# A PROJECT REPORT ON

# PREDICTING BUS PASSENGER FLOW AND PRIORITIZING INFLUENTIAL FACTORS


Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**

Submitted by

RAMINI SRI RAMANI (2211710041)

CHILAGANI USHARANI (2211710096)

Under the guidance of

Mr. K. SRIDHAR

(Head, Department of Computer Science)


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2022-2023

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Viswambhara Educational Society

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AMARAVADI SHESHA CHALAM

M.A., P.G.C.T.E., P.G.D.T.E., Ph.D.

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## CERTIFICATE

This is to certify that **Ramini Sri Ramani** and **Chilagani Usharani** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Predicting Bus Passenger Flow and Prioritizing Influential Factors"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

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**External Examiner**

Rapid Technologie

Date: 5th July 2023.

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They have carried out project work during the period 20th March 2023 to 5th July 2023 under our guidance and supervision.

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Rapid Technologies * Hyderabad * Telangana, India *

**K. RAJU**
Project-Guide

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# A PROJECT REPORT ON

# ALZHERIMER PREDICTION FROM MRI IMAGES


Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**

Submitted by

**Anusha Marupaka** (2211710052)

**Polapelly Soumya** (2211710072)

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## CERTIFICATE

This is to certify that **Anusha Marupaka** and **Soumya Polapelly** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Alzheimers Prediction From MRI Images"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

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This is to certify that **Anusha Marupaka (2211710052)** and **Polapelly Soumya (2211710072)** of **Vaagdevi Degree and P.G College** are involved as project trainees in the project titled **"Alzheimers Prediction From MRI Images"** from Rapid Technologies, in partial fulfillment for the award of **"Master of Computer Applications"** degree by Kakatiya University, Hanamkonda. They have been extended access to computer systems, server access and all the software at our development facility center.

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This project was developed and tested successfully at our development facility center.

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Nizamabad, Telangana, India-503090

# A PROJECT REPORT ON

# BIRD SPECIES IDENTIFICATION USING DEEP LEARNING


Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**

Submitted by

ALLAM AKASH (2211710045)

KOYYADA SHRUTHI (2211710027)

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This is to certify that **Koyyada Shruthi** and **Allam Akash** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Bird Species Identification Using Deep Learning"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

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# CERTIFICATE

This is to certify that **Koyyada Shruthi (2211710027)** and **Allam Akash (2211710045)** of **Vaagdevi Degree and P.G College** are involved as project trainees in the project titled **"Bird Species Identification Using Deep Learning"** from Rapid Technologies, in partial fulfillment for the award of **"Master of Computer Applications"** degree by Kakatiya University, Hanamkonda. They have been extended access to computer systems, server access and all the software at our development facility center.

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This project was developed and tested successfully at our development facility center.

Rapid Technologies * 506009 * Hanamkonda, Telangana, India

K. RAJU
Project-Guide

A PROJECT REPORT ON

# Blockchain Based Accounts Payable Platform for Goods Trade

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**


Submitted by

Challa sucharitha(2211710043)

Boosa sriveni(2211710120)

Under the guidance of

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This is to certify that **challa sucharitha** and **Boosa sriveni** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Blockchain Based Accounts Payable Platform for Goods Trade"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

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This is to certify that **Challa Sucharitha (2211710043)** and **Boosa Sriveni (2211710120)** of **Vaagdevi Degree and P.G College** are involved as project trainees in the project titled **"Blockchain Based Accounts Payable Platform for Goods Trade"** from Rapid Technologies, in partial fulfillment for the award of **"Master of Computer Applications"** degree by Kakatiya University, Hanamkonda. They have been extended access to computer systems, server access and all the software at our development facility center.

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This project was developed and tested successfully at our development facility center.

Rapid Technologies Hyderabad Telangana India-500090

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Project Guide

# A PROJECT REPORT ON
# A TRUSTED BLOCKCHAIN-BASED TRACEABILTY SYSTEM FOR FRUIT AND VEGETABLE AGRICULTURAL PRODUCTS

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**


Submitted by

Uyyala .Navya(2211710124)

Yara .Kalyani (2211710088)


Under the guidance of

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## CERTIFICATE

This is to certify that **Uyyala Navya** and **Yara Kalyani** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"A Trusted Blockchain-Based Traceability System for Fruit and Vegetable Agricultural Products"** at Vaagdevi Degree & P.G College, Hanmakonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

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Date: 5th July 2023.

# CERTIFICATE

This is to certify that Yara Kalyani (2211710088) and Uyyala Navya (2211710124) of Vaagdevi Degree and P.G College are involved as project trainees in the project titled "A Trusted Blockchain-Based Traceability System for Fruit and Vegetable Agricultural Products" from Rapid Technologies, in partial fulfillment for the award of "Master of Computer Applications" degree by Kakatiya University, Hanamkonda. They have been extended access to computer systems, server access and all the software at our development facility center.

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Rapid Technologies * Telangana, India-500090

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Project Guide

A PROJECT REPORT ON

# A METHODOLOGY FOR SECURE SHARING OF PERSONAL HEALTH RECORDS IN THE CLOUD

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**

Submitted by


**VELUDANDI BASANTHI** (2211710079)

**PARUPATI ANANYA** (2211710083)


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## CERTIFICATE

This is to certify that **Veludandi Basanthi** and **Parupati Ananya** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"A Methodology for Secure Sharing of Personal Health Records in the Cloud"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.+

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# A PROJECT REPORT ON

# A BLOCKCHAIN BASED AUTONOMOUS DCENTRALIZED ONLINE SOCIALNETWORK

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**


Submitted by

**SOUKYA MYAKA** (2211710073)

**SURENDAR SAMAJI** (2211710081)

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This is to certify that **Soukya Myaka** and **Surendar Samaji** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"A Blockchain Based Autonomous Decentralized Online Social Network"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

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Rapid Technologies Hyderabad, Telangana, India-500090

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# A PROJECT REPORT ON

## MACHINE LEARNING BASED HEART DISEASE PREDICTION SYSTEM

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**


Submitted by

PITTA SHIVANI (2211710009)

MOHAMMAD KARISHMA (2211710036)

Under the guidance of

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This is to certify that **Pitta Shivani** and **Mohammad Karishma** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Machine learning based heart disease prediction system"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

**Head of the Department**

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Date: 5th July 2023.

# CERTIFICATE

This is to certify that **Pitta Shivani (2211710009)** and **Mohammad Karishma (2211710036)** of **Vaagdevi Degree and P.G College** are involved as project trainees in the project titled **"Machine Learning Based Heart Disease Prediction System"** from Rapid Technologies, in partial fulfillment for the award of **"Master of Computer Applications"** degree by Kakatiya University, Hanamkonda. They have been extended access to computer systems, server access and all the software at our development facility center.

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Rapid Technologies * 506009 India

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# A PROJECT REPORT ON

# Driver Drowsiness Monitoring System Visual Behaviour and Machine Learning

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**


Submitted by

**Ankar. Rahulsonal (2211710099)**

**Kadari Srikanth (2211710116)**

Under the guidance of

**Mr. K. SRIDHAR**
(Head, Department of Computer Science)



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2022-2023

## CERTIFICATE

This is to certify that **Ankar Rahulsonal** and **Kadari Srikanth** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Driver Drowsiness Monitoring System Using Visual Behaviour And Machine Learning"**at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

**Head of the Department** **Principal**

**External Examiner**

# DECLARATION

We, the undersigned hereby declare that the project **DRIVER DROWSINESS MONITORING SYSTEM USING VISUAL BEHAVIOUR AND MECHINE LEARING** with special reference to *Rapid Technologies – Hyderabad*, developed and submitted by us to **KAKATIYA UNIVERSITY**, Hanamkonda in partial fulfillments for the award of degree of **Master of Computer Applications** under the guidance of **Mr. K. SRIDHAR**, is our original work and implemented by us.

Place: Hanamkonda.

Date;

Ankar. Rahulsonal

Kadari. Srikanth

## ACKNOWLEDGEMENT

We wish to take this opportunity to express oursincere gratitude and deep sense of respect to our beloved principal, **Dr. A. SHESHA CHALAM**, Vaagdevi Degree & P.G College, Hanamkonda for making us available all the required assistance and for his support and inspiration to carry out this work in the institute.

We express our heartfelt thanks to the Head of the Department of computer Science,**Mr. K. Sridhar** for providing us with necessary infrastructure and thereby giving us freedom to carry out this project.

We also thankful to **Mr. K. Sridhar, HoD of CS** for providing the excellent facilities, motivation and valuable guidance throughout the project work. With his co-operation and encouragementwe completed the project work intime.

We owe an enormous debt of gratitude to **Mr. K. Sridhar,HoD of CS** for guiding us from the beginning through the end of the project with his intellectual advices and insightful suggestions. We truly value his consistent feedback on our progress, which was always constructive and encouraging and ultimately drove us to the right direction.

Finally, we express our thanks to all the faculty members for their co-operation in completing the project.

Last but not least we thank to our parents who inspired us always to do the best.

Ankar.Rahulsonal

Kadari.Srikanth

# INDEX

**Driver Drowsiness Monitoring System using Visual Behavior and Machine Learning**


## Abstract

Drowsy driving is one of the major causes of road accidents and death. Hence, detection of driver's fatigue and its indication is an active research area. Most of the conventional methods are either vehicle based, or behavioural based or physiological based. Few methods are intrusive and distract the driver, some require expensive sensors and data handling. Therefore, in this study, a low cost, real time driver's drowsiness detection system is developed with acceptable accuracy. In the developed system, a webcam records the video and driver's face is detected in each frame employing image processing techniques. Facial landmarks on the detected face are pointed and subsequently the eye aspect ratio, mouth opening ratio and nose length ratio are computed and depending on their values, drowsiness is detected based on developed adaptive thresholding. Machine learning algorithms have been implemented as well in an offline manner.



**Keywords:** drowsiness detection, visual behaviour, eye aspect ratio, mouth opening ratio, nose length ratio.

# INTRODUCTION

Drowsy driving is one of the major causes of deaths occurring in road accidents. The truck drivers who drive for continuous long hours (especially at night), bus drivers of long distance route or overnight buses are more susceptible to this problem. Driver drowsiness is an overcast nightmare to passengers in every country. Every year, a large number of injuries and deaths occur due to fatigue related road accidents. Hence, detection of driver's fatigue and its indication is an active area of research due to its immense practical applicability. The basic drowsiness detection system has three blocks/modules; acquisition system, processing system and warning system. Here, the video of the driver's frontal face is captured in acquisition system and transferred to the processing block where it is processed online to detect drowsiness. If drowsiness is detected, a warning or alarm is send to the driver from the warning system.

Generally, the methods to detect drowsy drivers are classified in three types; vehicle based, behavioural based and physiological based. In vehicle based method, a number of metrics like steering wheel movement, accelerator or brake pattern, vehicle speed, lateral acceleration, deviations from lane position etc. are monitored continuously. Detection of any abnormal change in these values is considered as driv drowsiness. This is a nonintrusive measurement as the sensors are not attached on the driver. In behavioural based method, the visual behavior of the driver i.e., eye blinking, eye closing, yawn, head bending etc. are analyzed to detect drowsiness. This is also nonintrusive measurement as simple camera is used to detect these features. In physiological based method, the physiological signals like Electrocardiogram (ECG), Electooculogram (EOG), Electroencephalogram (EEG), heartbeat, pulse rate etc. are monitored and from these metrics, drowsiness or fatigue level is detected. This is intrusive measurement as the sensors are attached on the driver which will distract the driver. Depending on the sensors used in the system, system cost as well as size will increase. However, inclusion of more parameters/features will increase the accuracy of the system to a certain extent. These factors motivate us to develop a low-cost, real time driver's drowsiness detection system with acceptable accuracy. Hence, we have proposed a webcam based system to detect driver's fatigue from the face image only using image processing and machine learning techniques to make the system low-cost as well as portable.

## LITERATURE SURVEY

**1. W. B. Horng, C. Y. Chen, Y. Chang, C. H. Fan, "Driver Fatigue Detection based on Eye Tracking and Dynamic Template Matching", IEEE International Conference on Networking,, Sensing and Control, Taipei, Taiwan, March 21-23, 2004.**

A vision-based real-time driver fatigue detection system is proposed for driving safely. The driver's face is located, from color images captured in a car, by using the characteristic of skin colors. Then, edge detection is used to locate the regions of eyes. In addition to being used as the dynamic templates for eye tracking in the next frame, the obtained eyes' images are also used for fatigue detection in order to generate some warning alarms for driving safety. The system is tested on a Pentium III 550 CPU with 128 MB RAM. The experiment results seem quite encouraging andpromising. The system can reach 20 frames per second for eye tracking, and the average correct rate for eye location and tracking can achieve 99.1% on four test videos. The correct rate for fatigue detection is l00%, but the average precision rate is 88.9% on the test videos.

**2. B. Alshaqaqi, A. S. Baquhaizel, M. E. A. Ouis, M. Bouumehed, A. Ouamri, M. Keche, "Driver Drowsiness Detection System", IEEE International Workshop on Systems, Signal Processing and their Applications, 2013.**

Drowsiness and Fatigue of drivers are amongst the significant causes of road accidents. Every year, they increase the amounts of deaths and fatalities injuries globally. In this paper, a module for Advanced Driver Assistance System (ADAS) is presented to reduce the number of accidents due to drivers fatigue and hence increase the transportation safety; this system deals with automatic driver drowsiness detection based on visual information and Artificial Intelligence. We propose an algorithm to locate, track, and analyze both the drivers face and eyes to measure PERCLOS, a scientifically supported measure of drowsiness associated with slow eye closure.

**3. A. Abas, J. Mellor, and X. Chen, "Non-intrusive drowsiness detection by employing Support Vector Machine," 2014 20th International Conference on Automation and Computing (ICAC), Bedfordshire, UK, 2014, pp. 188- 193.**

Monitoring the driver's action while during driving by examining the maneuvered of the vehicle can be a very prominent task in order to enhance driving safety. Differentiation

between unintentional and intentional car steering wheel movements could be a main key element to detect drowsiness during driving. There is a growth of interests in applying computerised automotive techniques to overcome those safety problems. This paper presents a new method to detect the drowsiness of drivers non-intrusively, which may trigger warning to drivers, so as to prevent accidents and to improve safety on the motorways. This method employs Support Vector Machine (SVM) to train the classifier by using steering wheel angle and distance to outside lane as input parameters to the SVM. All the parameters extracted from vehicle parametrical data collected in a driving simulator. With all considered features, a SVM drowsiness detection model has successfully been constructed.

**4. V. Kazemi and J. Sullivan; "One millisecond face alignment with an ensemble of regression trees", IEEE Conf. on Computer Vision and Pattern Recognition, 23-28 June, 2014, Columbus, OH, USA.**

This paper addresses the problem of Face Alignment for a single image. We show how an ensemble of regression trees can be used to estimate the face's landmark positions directly from a sparse subset of pixel intensities, achieving super-realtime performance with high quality predictions. We present a general framework based on gradient boosting for learning an ensemble of regression trees that optimizes the sum of square error loss and naturally handles missing or partially labelled data. We show how using appropriate priors exploiting the structure of image data helps with efficient feature selection. Different regularization strategies and its importance to combat overfitting are also investigated. In addition, we analyse the effect of the quantity of training data on the accuracy of the predictions and explore the effect of data augmentation using synthesized data.

# SYSTEM ANALYSIS

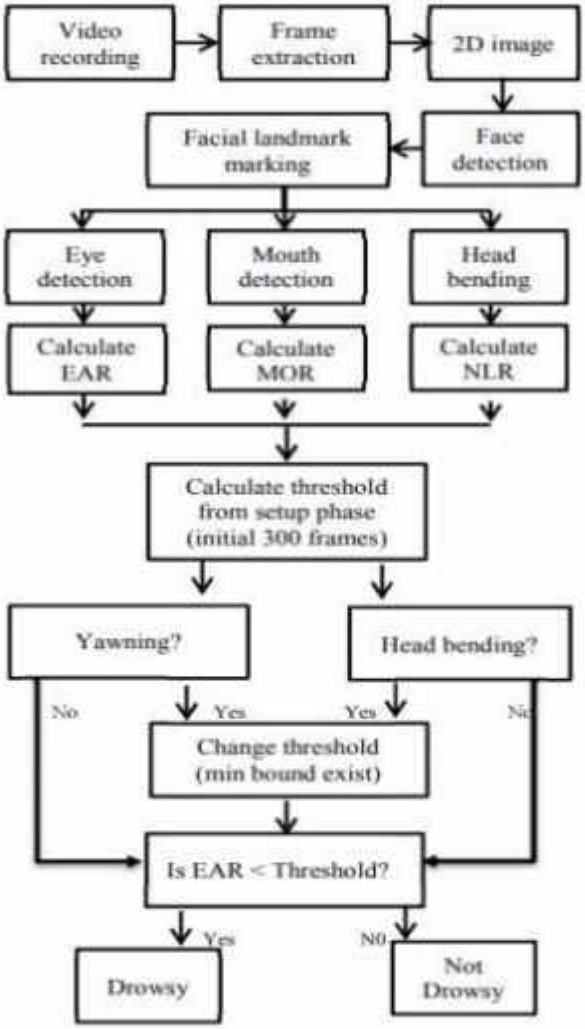
## Existing System

Generally, the methods to detect drowsy drivers are classified in three types; vehicle based, behavioural based and physiological based. In vehicle-based method, a number of metrics like steering wheel movement, accelerator or brake pattern, vehicle speed, lateral acceleration, deviations from lane position etc. are monitored continuously. Detection of any abnormal change in these values is considered as driver drowsiness. This is a nonintrusive measurement as the sensors are not attached on the driver. In behavioural based method, the visual behaviour of the driver i.e., eye blinking, eye closing, yawn, head bending etc. are analysed to detect drowsiness. This is also nonintrusive measurement as simple camera is used to detect these features. In physiological based method, the physiological signals like Electrocardiogram (ECG), Electrooculogram (EOG), Electroencephalogram (EEG), heartbeat, pulse rate etc. are monitored and from these metrics, drowsiness or fatigue level is detected. This is intrusive measurement as the sensors are attached on the driver which will distract the driver. Depending on the sensors used in the system, system cost as well as size will increase.

## Proposed System

In this system at first, the video is recorded using a webcam. The camera will be positioned in front of the driver to capture the front face image. From the video, the frames are extracted to obtain 2-D images. Face is detected in the frames using histogram of oriented gradients (HOG) and linear support vector machine (SVM) for object detection.After detecting the face, facial landmarks like positions of eye, nose, and mouth are marked on the images. From the facial landmarks, eye aspect ratio, mouth opening ratio and position of the head are quantified and using these features and machine learning approach, a decision is obtained about the drowsiness of the driver. If drowsiness is detected, an alarm will be sent to the driver to alert him/her.

## SYSTEM ARCHITECTURE



## MODULES DESCRIPTION

### Data Collection

A webcam (Sony CMU-BR300) is used to capture the footage, and the frames are captured and stored on a laptop. Following the extraction of the pictures, data processing methods are applied to these 2D images. Synthetic driver data is currently being developed. The volunteers are instructed to look at the webcam while blinking their eyes, shutting their eyes, yawning, and bending their heads. The video is recorded for 30 minute

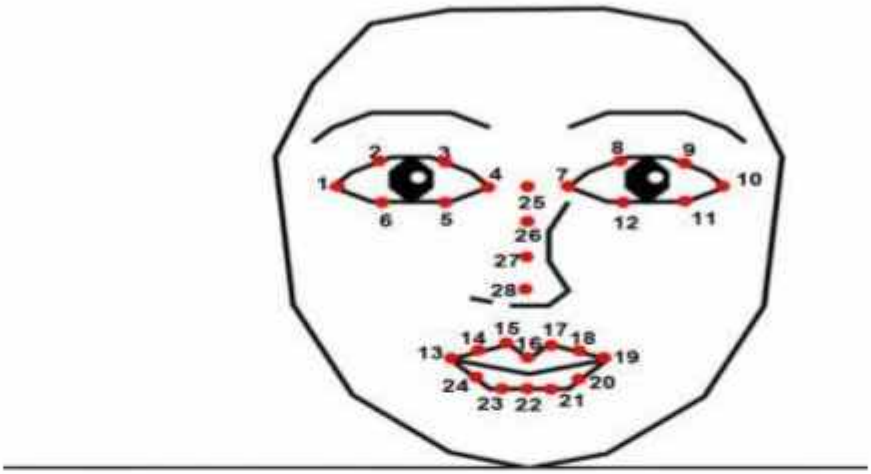
### Detection of Faces

The individual faces are identified first after the frames have been extracted. There are several online face recognition algorithms. A histogram of directed gradients (HOG) and the linear SVM system [10] are used in this analysis. Positive samples of a fixed window size are taken from the photographs and HOG descriptors are computed on them in this process. Following that, negative samples of the same size are taken (samples that do not include the requisite item to be observed, i.e., human face here) and HOG descriptors are measured. Typically, the number of negative samples far outnumbers the number of positive samples. Following the set of features for both groups, a linear SVM is trained for the classification role. Hard negative mining is used to increase the precision of SVM. After testing, the classifier is checked on labelled results, and the false positive sample function values are used for training again. The fixed-size window is translated over the image for the test image, and the classifier computes the output for each window position. Finally, the full value output is used to identify the identified face, and a bounding box is drawn around it. This non-maximum suppression measure eliminates the overlapping and unnecessary bounding boxes.

**C** As a result, the face picture is resized to 500 pixels in width and transformed to grayscale. An ensemble of regression trees [11] is used after image normalisation to approximate the landmark locations on the face from a sparse subset of pixel intensities. The number of square error loss is optimised using gradient boosting learning in this process. To discover different systems, different priors are used. The boundary points of the eyes, mouth, and central line of the nose are marked using this procedure, and the number of points for each are given in Table I. Definition 2 depicts the facial landmarks. The red points are the observed landmarks that will be processed further.

**Table I: Facial landmark points**

| Parts | Landmark Points |
|---|---|
| Mouth | [13-24] |
| Right eye | [1-6] |
| Left eye | [7-12] |
| Nose | [25-28] |




## Extraction of Characteristics

Following the detection of facial landmarks, the features are computed in the manner mentioned below. Eye aspect ratio (EAR): The eye aspect ratio is measured from the eye corner points as the ratio of the eye's height and width as defined by here denotes the point marked as I in a facial landmark and denotes the interval between points denoted as I and j. As a result, when the eyes are wide open, the EAR has a high value, and when the eyes are closed, the EAR value decreases to zero. As a result, monotonically declining EAR values suggest steadily closing eyes, and it is nearly zero for absolutely closed eyes (eye blink). As a result, EAR values suggest the driver's drowsiness and drowsiness causes eye blinks. Mouth opening ratio (MOR): MOR is a parameter used to diagnose yawning during drowsiness. It is measured in the same way as EAR.

# SYSTEM STUDY

## Feasibility Study

The feasibility of the project is analyzed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are,

- Economic Feasibility
- Operational Feasibility
- Technical Feasibility
- Social Feasibility

**Economic Feasibility**

This study is carried out to check the economic impact that the system will have on the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified. Thus the developed system as well within the budget and this was achieved because most of the technologies used are freely available. Only the customized products had to be purchased

**Operational Feasibility**

Are you into the production of "things"? Perhaps, your answer would be yes. We naturally don't call them things; instead, we call them products, services, or systems. Using the term "things" sounds foreign because you can't just drop them into an area without touching them. They need to be connected to an existing service or business. These "things" are an extension of the organization where they are produced.

**Technical Feasibility**

This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only minimal or null changes are required for implementing this system

**Social Feasibility**

The aspect of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of

acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it. His level of confidence must be raised so that he is also able to make some constructive criticism, which is welcomed, as he is the final user of the system

## SYSTEM REQUIREMENTS SPECIFICATION

### Introduction

The project involved analyzing the design of few applications so as to make the application more users friendly. To do so, it was really important to keep the navigations from one screen to the other well ordered and at the same time reducing the amount of typing the user needs to do. In order to make the application more accessible, the browser version had to be chosen so that it is compatible with most of the Browsers

### Purpose

typing the user needs to do. In order to make the application more accessible, the browser version had to be chosen so that it is compatible with most of the Browsers.

### Functional Requirements

- Graphical User interface with the User.

For developing the application the following are the Software Requirements:

1. Python
2. anaconda

### Operating Systems supported

1. Windows 7
2. Windows XP
3. Windows 8

### Technologies and Languages used to Develop

1. Python

### Debugger and Emulator

- Any Browser (Particularly Chrome)

### Hardware Requirements

For developing the application the following are the Hardware Requirements:

- Processor: Pentium IV or higher
- RAM: 256 MB

Space on Hard Disk: minimum 512MB

**Non Functional Requirements**

- Any Browser (Particularly Chrome)

## INPUT & OUTPUT DESIGN

### INPUT DESIGN:

The input design is the link between the information system and the user. It comprises the developing specification and procedures for data preparation and those steps are necessary to put transaction data in to a usable form for processing can be achieved by inspecting the computer to read data from a written or printed document or it can occur by having people keying the data directly into the system. The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps and keeping the process simple. The input is designed in such a way so that it provides security and ease of use with retaining the privacy. Input Design considered the following things:

- What data should be given as input?
- How the data should be arranged or coded?
- The dialog to guide the operating personnel in providing input.

Methods for preparing input validations and steps to follow when error occur

### OBJECTIVES

1. Input Design is the process of converting a user-oriented description of the input into a computer-based system. This design is important to avoid errors in the data input process and show the correct direction to the management for getting correct information from the computerized system.

2. It is achieved by creating user-friendly screens for the data entry to handle large volume of data. The goal of designing input is to make data entry easier and to be free from errors. The data entry screen is designed in such a way that all the data manipulates can be performed. It also provides record viewing facilities.

3. When the data is entered it will check for its validity. Data can be entered with the help of screens. Appropriate messages are provided as when needed so that the user will not be in maize of instant. Thus the objective of input design is to create an input layout that is easy to follow

## OUTPUT DESIGN

A quality output is one, which meets the requirements of the end user and presents the information clearly. In any system results of processing are communicated to the users and to other system through outputs. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system's relationship to help user decision-making.

1. Designing computer output should proceed in an organized, well thought out manner; the right output must be developed while ensuring that each output element is designed so that people will find the system can use easily and effectively. When analysis design computer output, they should Identify the specific output that is needed to meet the requirements.

2.Select methods for presenting information.

3.Create document, report, or other formats that contain information produced by the system.

The output form of an information system should accomplish one or more of the following objectives.

- Convey information about past activities, current status or projections of the
- Future.
- Signal important events, opportunities, problems, or warnings.
- Trigger an action.

Confirm an action

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### Software Requirements

For developing the application the following are the Software Requirements:

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4. anaconda

### Operating Systems supported

4. Windows 7
5. Windows XP
6. Windows 8

### Technologies and Languages used to Develop

Python

## SYSTEM DESIGN

The purpose of the design phase is to plan a solution of the problem specified by the requirement document. This phase is the first step in moving from the problem domain to the solution domain. In other words, starting with what is needed, design takes us toward how to satisfy the needs. The design of a system is perhaps the most critical factor affection the quality of the software; it has a major impact on the later phase, particularly testing, maintenance. The output of this phase is the design document. This document is similar to a blueprint for the solution and is used later during implementation, testing and maintenance. The design activity is often divided into two separate phases System Design and Detailed Design.

System Design also called top-level design aims to identify the modules that should be in the system, the specifications of these modules, and how they interact with each other to produce the desired results. At the end of the system design all the major data structures, file formats, output formats, and the major modules in the system and their specifications are decided.

During, Detailed Design, the internal logic of each of the modules specified in system design is decided. During this phase, the details of the data of a module are usually specified in a high-level design description language, which is independent of the target language in whichthe software will eventually be implemented.

In system design the focus is on identifying the modules, where as during detailed designthe focus is on designing the logic for each of the modules. In other works, in system designthe attention is on what components are needed, while in detailed design how the components can be implemented in software is the issue.

Design is concerned with identifying software components specifying relationships among components. Specifying software structure and providing blue print for the document phase. Modularity is one of the desirable properties of large systems. It implies that the system is divided into several parts. In such a manner, the interaction between parts is minimal clearlyspecified.

During the system design activities, Developers bridge the gap between the

requirements specification, produced during requirements elicitation and analysis, and the system that is delivered to the user.

Design is the place where the quality is fostered in development. Software design is a process through which requirements are translated into a representation of software

**UML Diagrams (9 types)**

Any complex system is best understood by making some kind of diagrams or pictures. These diagrams have a better impact on our understanding. If we look around, we will realize that the diagrams are not a new concept but it is used widely in different forms in different industries.

We prepare UML diagrams to understand the system in a better and simple way. A single diagram is not enough to cover all the aspects of the system. UML defines various kinds of diagrams to cover most of the aspects of a system. You can also create your own set of diagrams to meet your requirements. Diagrams are generally made in an incremental and iterative way. There are two broad categories of diagrams and they are again divided into

subcategories −

**Structural Diagrams**

**Behavioral Diagrams**

**Structural Diagrams**

The structural diagrams represent the static aspect of the system. These static aspects represent those parts of a diagram, which forms the main structure and are therefore stable.

These static parts are represented by classes, interfaces, objects, components, and nodes. The four structural diagrams are −

Class diagram

Object diagram

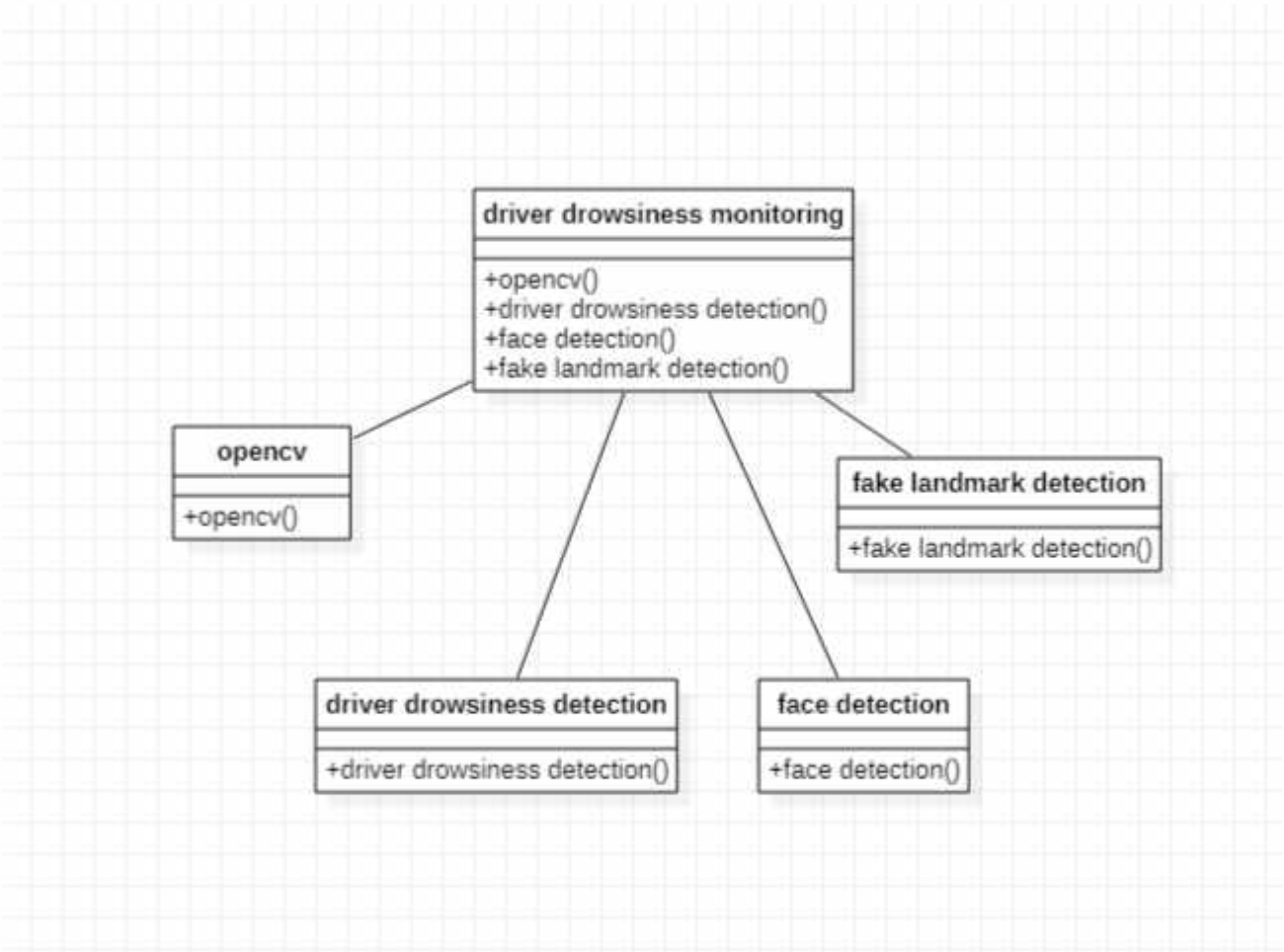
Component diagram

Deployment diagram

**Class Diagram**

Class diagrams are the most common diagrams used in UML. Class diagram consists of classes, interfaces, associations, and collaboration. Class diagrams basically represent the object-oriented view of a system, which is static in nature. Active class is used in a class diagram to represent the concurrency of the system.

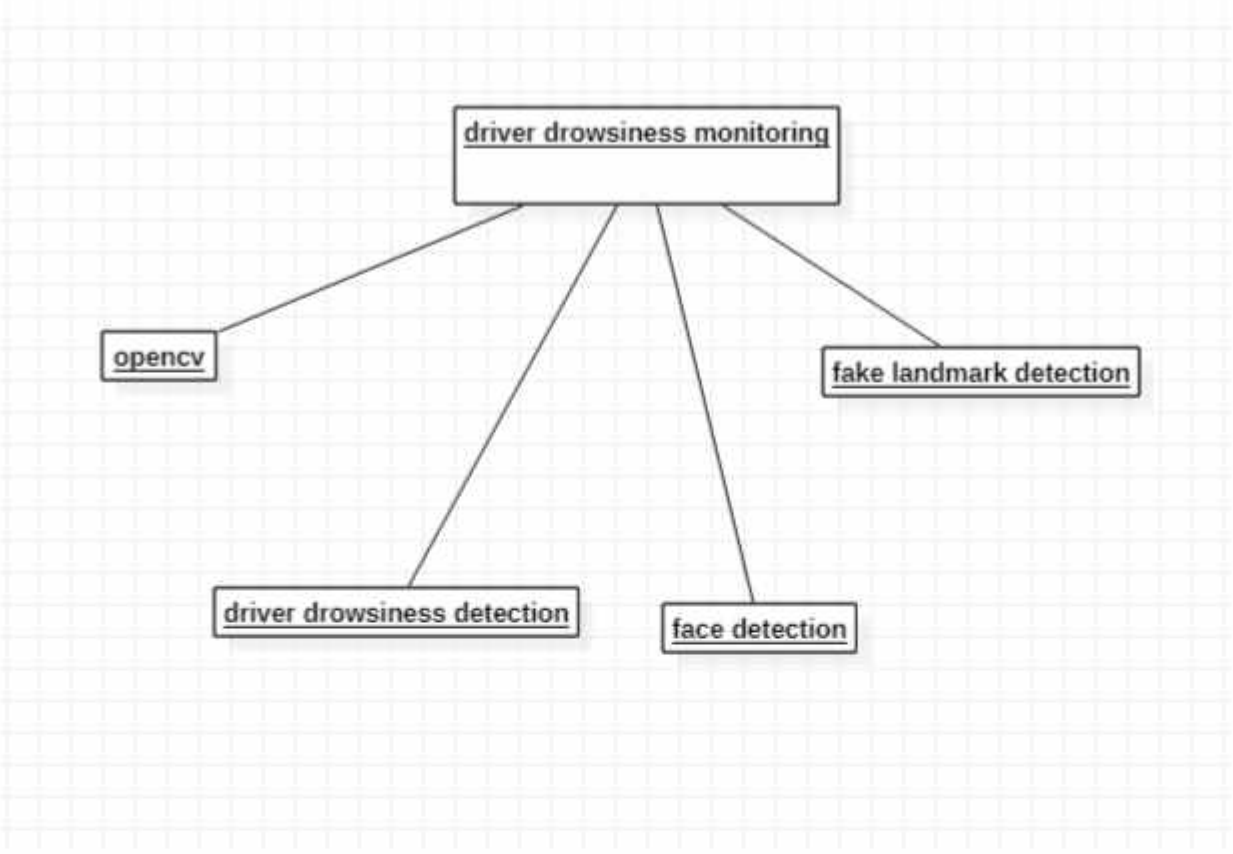
Class diagram represents the object orientation of a system. Hence, it is generally used for development purpose. is is the most widely used diagram at the time of system construction.




**Object Diagram**

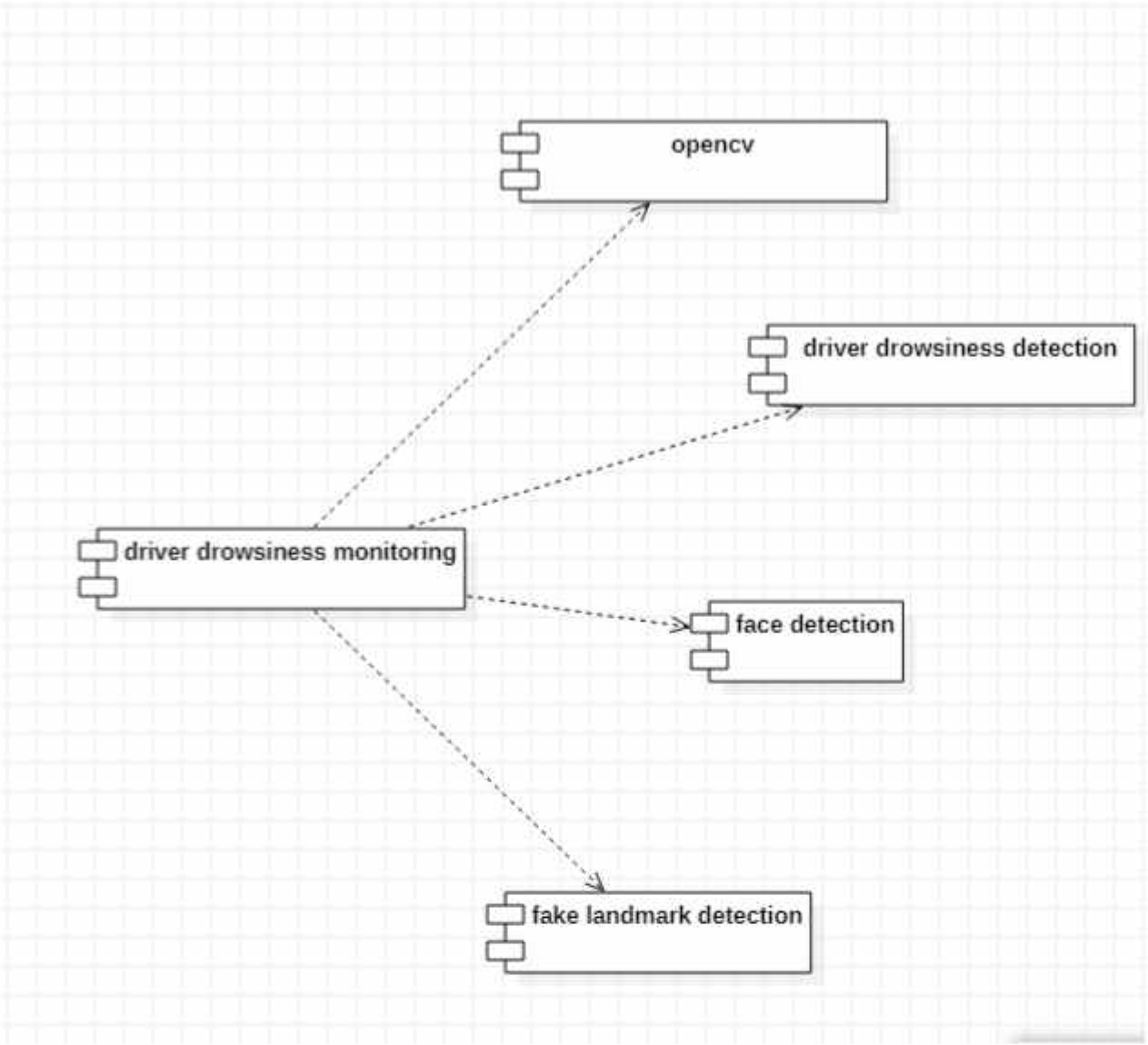
Object diagrams can be described as an instance of class diagram. Thus, these diagrams are more close to real-life scenarios where we implement a system. Object diagrams are a set of objects and their relationship is just like class diagrams. They also represent the static view of the system.

The usage of object diagrams is similar to class diagrams but they are used to build prototype of a system from a practical perspective.



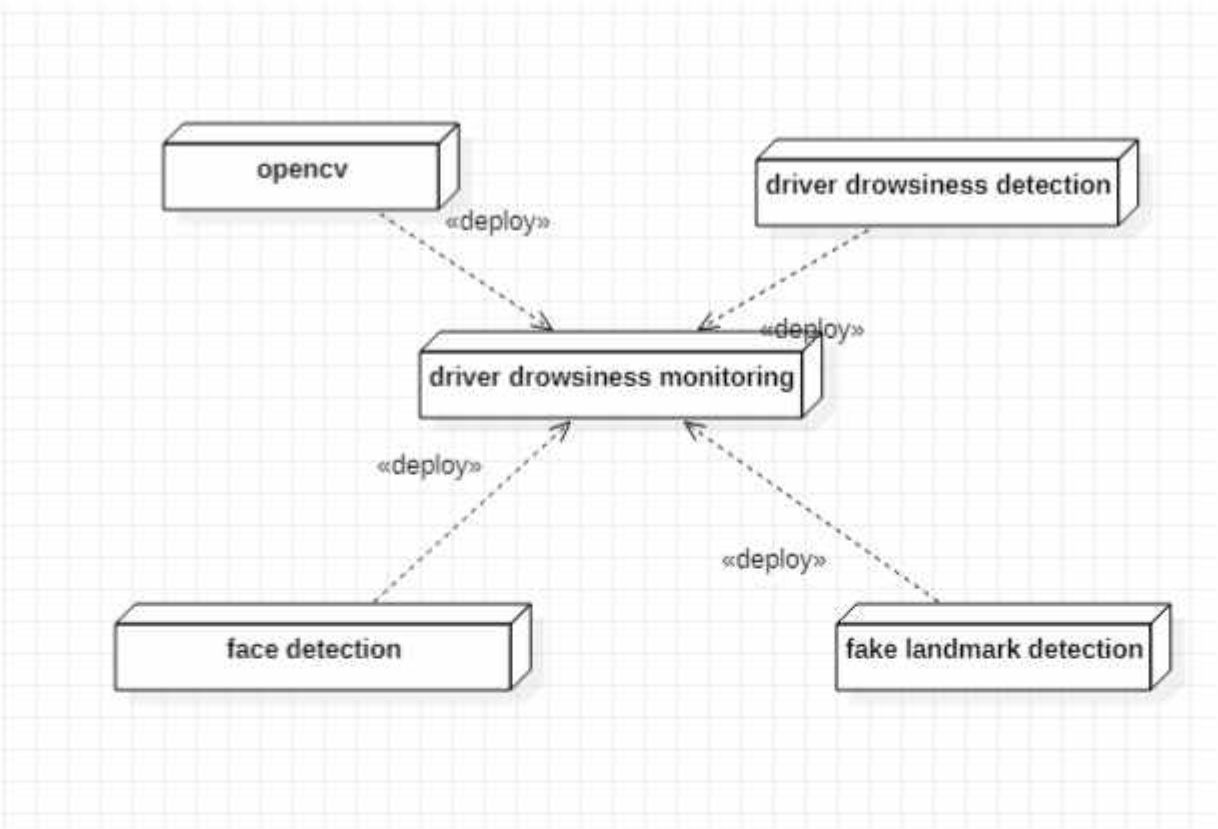

**Component Diagram**

Component diagrams represent a set of components and their relationships. These components consist of classes, interfaces, or collaborations. Component diagrams represent the implementation view of a system. During the design phase, software artifacts (classes, interfaces, etc.) of a system are arranged in different groups depending upon their relationship. Now, these groups are known as components. Finally, it can be said component diagrams are used to visualize the implementation.




**Deployment Diagram**

Deployment diagrams are a set of nodes and their relationships. These nodes are physical entities where the components are deployed. Deployment diagrams are used for visualizing the deployment view of a system. This is generally used by the deployment team. Note − If the above descriptions and usages are observed carefully then it is very clear that all the diagrams have some relationship with one another. Component diagrams are dependent upon the classes, interfaces, etc. which are part of class/object diagram. Again, the deployment diagram is dependent upon the components, which are used to make component diagrams.




**Behavioral Diagrams**

Any system can have two aspects, static and dynamic. So, a model is considered as complete when both the aspects are fully covered.

Behavioral diagrams basically capture the dynamic aspect of a system. Dynamic aspect can be further described as the changing/moving parts of a system.

UML has the following five types of behavioral diagrams −

**Use case diagram**

**Sequence diagram**

**Collaboration diagram**

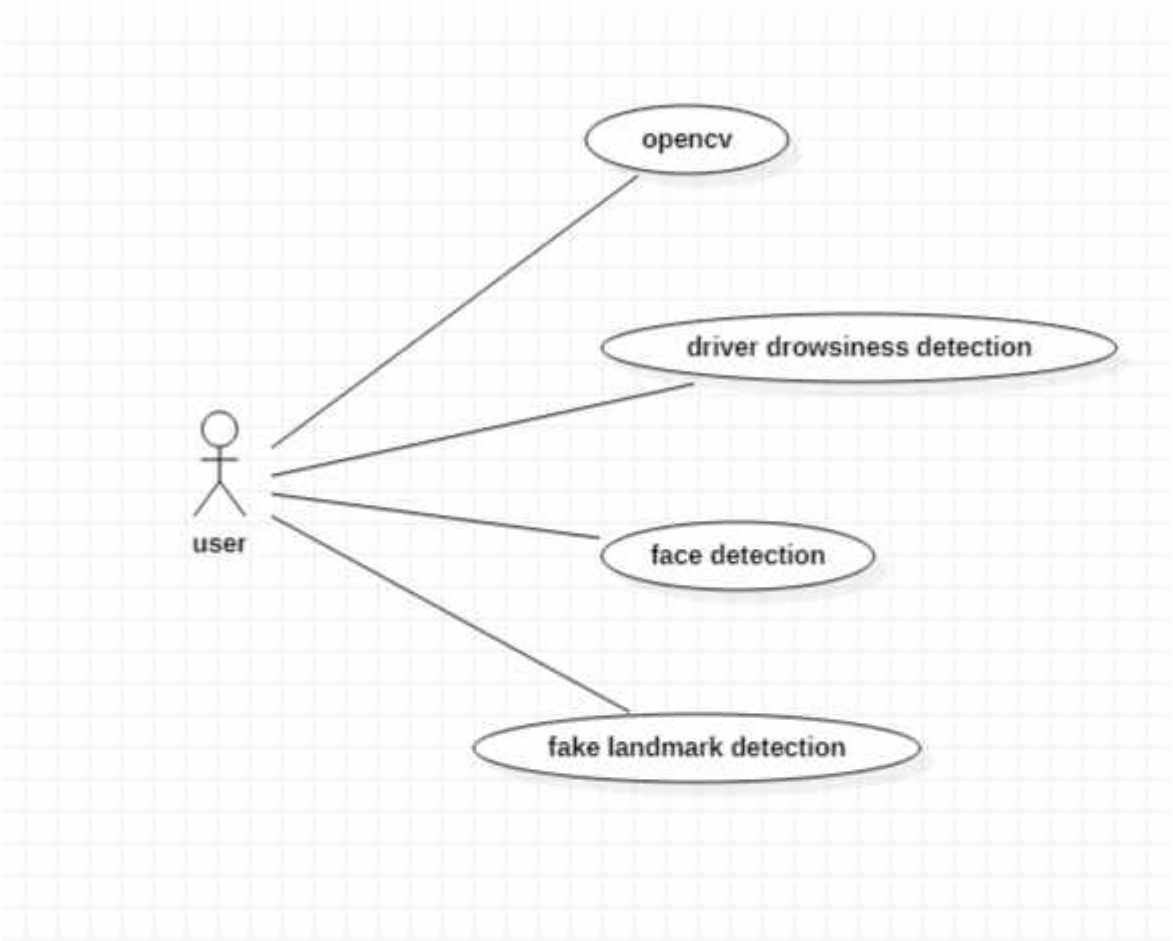
**Statechart diagram**

**Activity diagram**

**Use Case Diagram**

Use case diagrams are a set of use cases, actors, and their relationships. They represent the use case view of a system. A use case represents a particular functionality of a

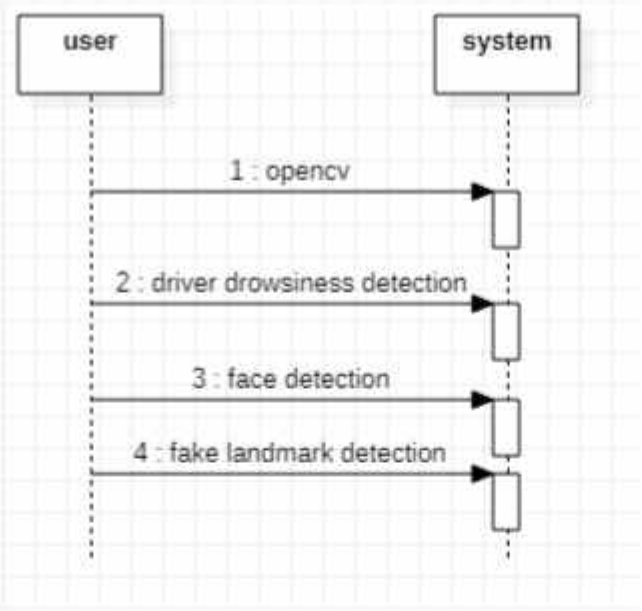
system. Hence, use case diagram is used to describe the relationships among the functionalities and their internal/external controllers. These controllers are known as actors.




**Sequence Diagram**

A sequence diagram is an interaction diagram. From the name, it is clear that the diagram deals with some sequences, which are the sequence of messages flowing from one object to another.

Interaction among the components of a system is very important from implementation and execution perspective. Sequence diagram is used to visualize the sequence of calls in a system to perform a specific functionality.

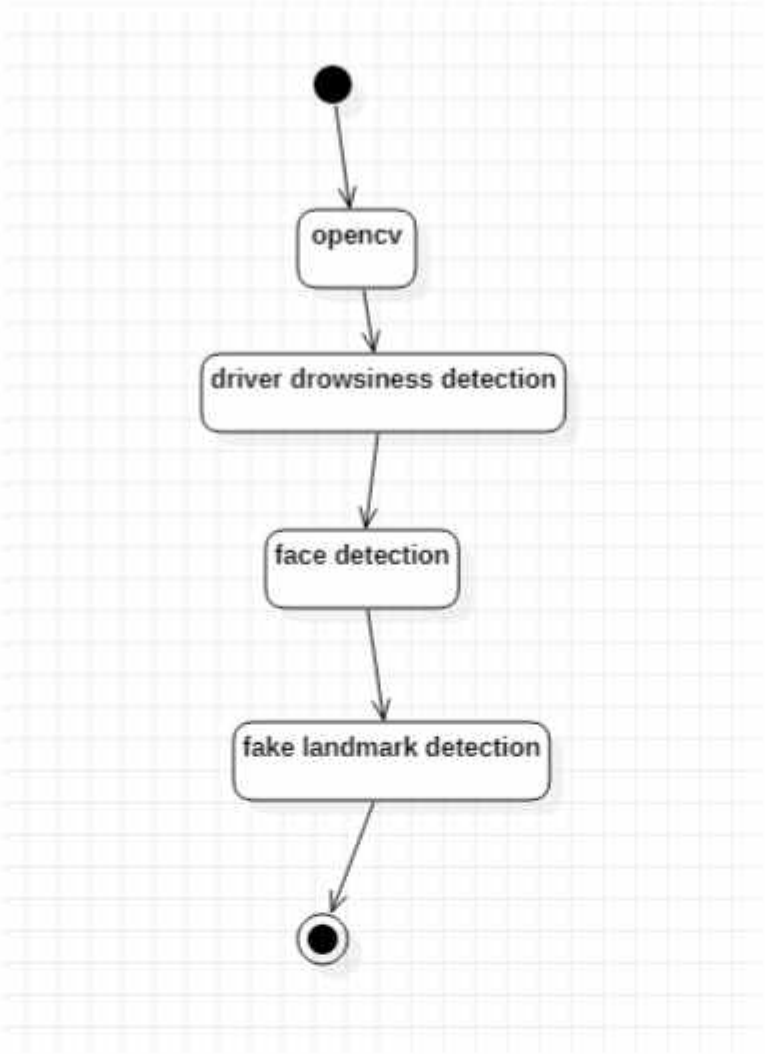



**Collaboration Diagram**

Collaboration diagram is another form of interaction diagram. It represents the structural organization of a system and the messages sent/received. Structural organization consists of objects and links. The purpose of collaboration diagram is similar to sequence diagram. However, the specific purpose of collaboration diagram is to visualize the organization of objects and their interaction.

**Statechart Diagram**

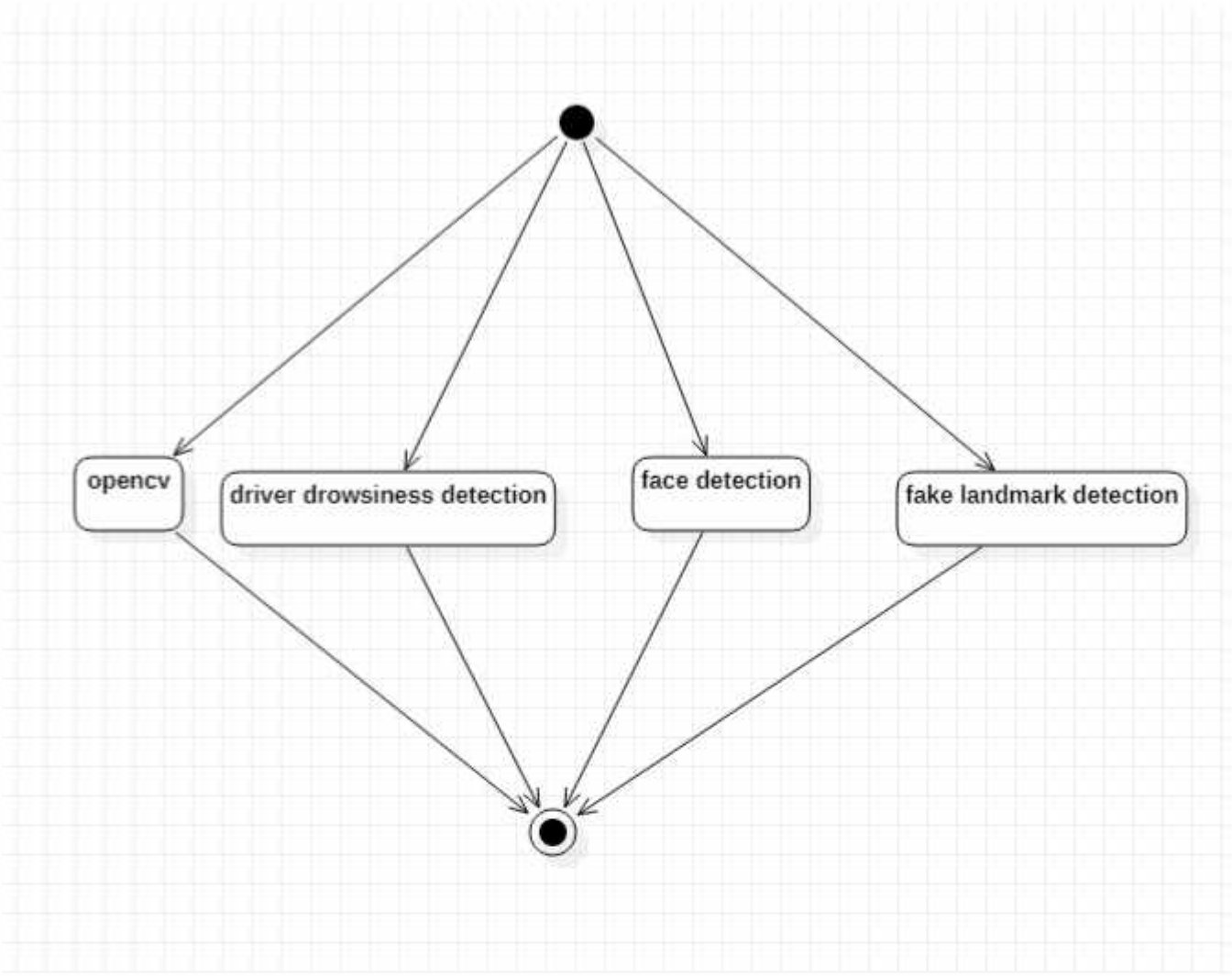
Any real-time system is expected to be reacted by some kind of internal/external events. These events are responsible for state change of the system. Statechart diagram is used to represent the event driven state change of a system. It basically describes the state change of a class, interface, etc. State chart diagram is used to visualize the reaction of a system by internal/external factors.




**Activity Diagram**

Activity diagram describes the flow of control in a system. It consists of activities and links. The flow can be sequential, concurrent, or branched. Activities are nothing but the functions of a system. Numbers of activity diagrams are prepared to capture the entire flow in a system. Activity diagrams are used to visualize the flow of controls in a system. This is prepared to have an idea of how the system will work when executed.

Note − Dynamic nature of a system is very difficult to capture. UML has provided features to capture the dynamics of a system from different angles. Sequence diagrams and collaboration diagrams are isomorphic, hence they can be converted from one another without losing any information. This is also true for Statechart and activity diagram



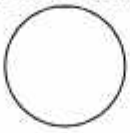

**Ddata flow diagrams**

A graphical tool used to describe and analyze the moment of data through a system manual or automated including the process, stores of data, and delays in the system. Data Flow Diagrams are the central tool and the basis from which other components are developed. The transformation of data from input to output, through processes, may be described logically and independently of the physical components associated with the system. The DFD is also know as a data flow graph or a bubble chart.

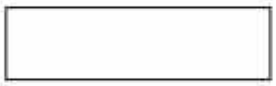
DFDs are the model of the proposed system. They clearly should show the requirements on which the new system should be built. Later during design activity this is taken as the basis for drawing the system's structure charts. The Basic Notation used to create a DFD's are asfollows:

1. **Dataflow:** Data move in a specific direction from an origin to a destination.

**2. Process:** People, procedures, or devices that use or produce (Transform) Data. Thephysical component is not identified.

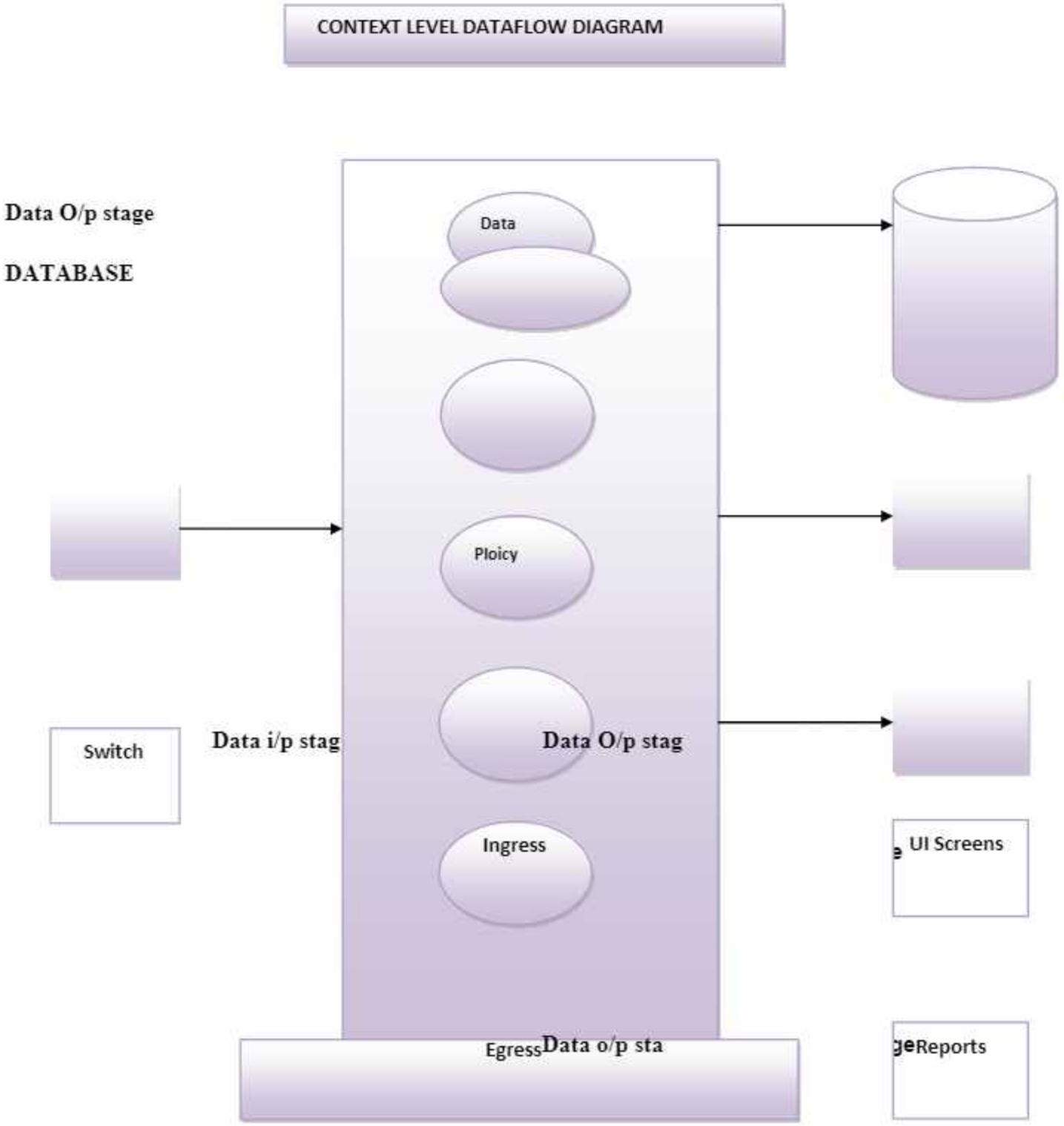


**3. Source:** External sources or destination of data, which may be People, programs,organizations or other entities.



**4. Data Store:** Here data are stored or referenced by a process in the System.

CONTEXT LEVEL 0 DIAGRAM:



Received

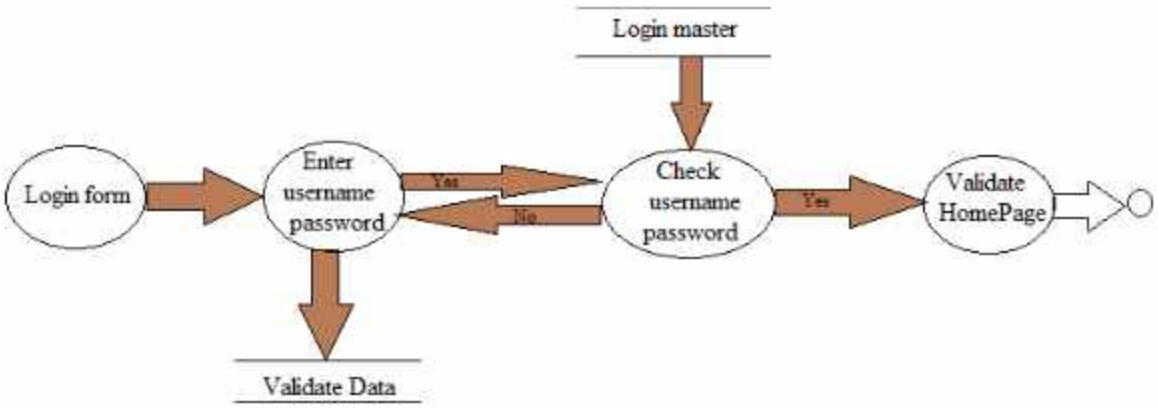
**A New Architecture for Network Intrusion Detection and**

Prevention

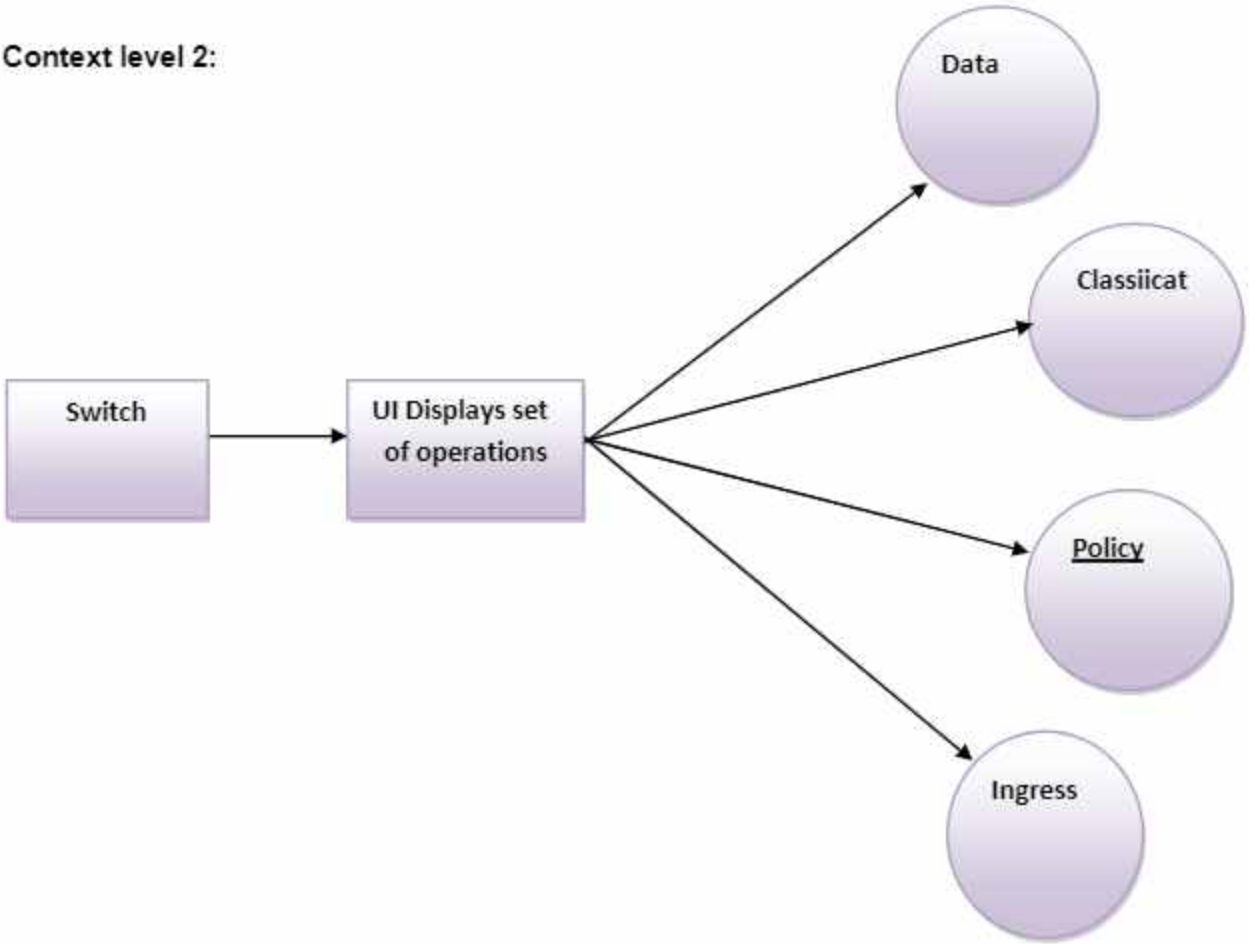
Context lev

System Process

**Login DFD**



**Context level 2:**




## Data Dictionaries and ER Diagram

ER diagrams are related to data structure diagrams (DSDs), which focus on the relationships of elements within entities instead of relationships between entities themselves. ER diagrams also are often used in conjunction with data flow diagrams (DFDs), which map out the flow of information for processes or systems.

| Column Name | Data Type | Nullable | Default | Primary Key |
|---|---|---|---|---|
| SID | NUMBER | No | - | 1 |
| SERVICENAME | VARCHAR2(4000) | Yes | - | - |
| STORAGE | NUMBER | Yes | - | - |
| MEMORYRESERVATION | VARCHAR2(4000) | Yes | - | - |
| PRIORITY | VARCHAR2(4000) | Yes | - | - |
| STATUS | VARCHAR2(4000) | Yes | - | - |
| | | | | 1 - 6 |

## SOFTWARE ENVIRONMENT

## PYTHON

Python is a widely used general-purpose, high level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It was designed with an emphasis on code readability, and its syntax allows programmers to express their concepts in fewer lines of code.

Python is a programming language that lets you work quickly and integrate systems more efficiently.

There are two major Python versions: **Python 2 and Python 3**. Both are quite different.

Writing our first program:

Just type in the following code after you starts the interpreter.

```
# Script Begins

print("Python Language")

# Scripts Ends
```

Output:

```
Python Language
```

Let's analyze the script line by line.

***Line 1: [*# Script Begins**]** In Python, comments begin with a #. This statement is ignored by the interpreter and serves as documentation for our code.

***Line 2: [print("Python Language")]*** To print something on the console, print() function is used. This function also adds a newline after our message is printed(unlike in C). Note that in Python 2, "print" is not a function but a keyword and therefore can be used without parentheses. However, in Python 3, it is a function and must be invoked with parentheses.

***Line 3: [#* Script Ends]** This is just another comment like in Line 1.

**Reason for increasing popularity**

1. Emphasis on **code readability, shorter codes**, ease of writing
2. Programmers can express logical concepts in **fewer lines** of code in comparison to languages such as C++ or Java.
3. Python supports **multiple** programming paradigms, like object-oriented, imperative and functional programming or procedural.
4. There exists inbuilt functions for almost all of the frequently used concepts.
5. Philosophy is "Simplicity is the best".

## LANGUAGE FEATURES

- **Interpreted**
    - There are no separate compilation and execution steps like C and C++.
    - Directly *run* the program from the source code.
    - Internally, Python converts the source code into an intermediate form called bytecodes which is then translated into native language of specific computer to run it.
    - No need to worry about linking and loading with libraries, etc.
- **Platform Independent**
    - Python programs can be developed and executed on multiple operating system platforms.
    - Python can be used on Linux, Windows, Macintosh, Solaris and many more.
- **Free and Open Source;** Redistributable
- **High-level Language**

- In Python, no need to take care about low-level details such as managing the memory used by the program.

- **Simple**
  - Closer to English language;Easy to Learn
  - More emphasis on the solution to the problem rather than the syntax
- **Embeddable**
  - Python can be used within C/C++ program to give scripting capabilities for the program's users.

- **Robust**:
  - Exceptional handling features
  - Memory management techniques in built
- **Rich Library Support**
  - The Python Standard Library is very vast.
  - Known as the **"batteries included"** philosophy of Python ;It can help do various things involving regular expressions, documentation generation, unit testing, threading, databases, web browsers, CGI, email, XML, HTML, WAV files, cryptography, GUI and many more.
  - Besides the standard library, there are various other high-quality libraries such as the Python Imaging Library which is an amazingly simple image manipulation library.

**Python vs JAVA**

| **Python** | **Java** |
|---|---|
| Dynamically Typed<br>• No need to declare anything. An assignment statement binds a name to an object, and the | Statically Typed<br>• All variable names (along with their types) must be explicitly declared. Attempting to assign an object of the wrong type to a |

| Python | Java |
| --- | --- |
| object can be of any type.<br>• No type casting is required when using container objects | variable name triggers a type exception.<br>• Type casting is required when using container objects. |
| Concise Express much in limited words | Verbose Contains more words |
| Compact | Less Compact |
| Uses Indentation for structuring code | Uses braces for structuring code |

**Softwares making use of Python**

Python has been successfully embedded in a number of software products as a scripting language.

1. GNU Debugger uses Python as a **pretty printer** to show complex structures such as C++ containers.
2. Python has also been used in artificial intelligence
3. Python is often used for **natural language processing** tasks.

**Current Applications of Python**

1. A number of Linux distributions use installers written in Python example in Ubuntu we have the **Ubiquity**
2. Python has seen extensive use in the **information security industry**, including in exploit development.
3. Raspberry Pi– single board computer uses Python as its principal user-programming language.

4. Python is now being used **Game Development** areas also.

**Pros:**

1. Ease of use
2. Multi-paradigm Approach

**Cons:**

1. Slow speed of execution compared to C,C++
2. Absence from mobile computing and browsers
3. For the C,C++ programmers switching to python can be irritating as the language requires proper indentation of code. Certain variable names commonly used like sum are functions in python. So C, C++ programmers have to look out for these.

**Industrial Importance**

Most of the companies are now looking for candidates who know about Python Programming. Those having the knowledge of python may have more chances of impressing the interviewing panel. So I would suggest that beginners should start learning python and excel in it.

Python is a high-level, interpreted, and general-purpose dynamic programming language that focuses on code readability. It has fewer steps when compared to Java and C. It was founded in 1991 by developer Guido Van Rossum. Python ranks among the most popular and fastest-growing languages in the world. Python is a powerful, flexible, and easy-to-use language. In addition, the community is very active there. It is used in many organizations as it supports multiple programming paradigms. It also performs automatic memory management.

**Advantages :**

1. Presence of third-party modules
2. Extensive support libraries(NumPy for numerical calculations, Pandas for data analytics etc)

3. Open source and community development
4. Versatile, Easy to read, learn and write
5. User-friendly data structures
6. High-level language
7. Dynamically typed language(No need to mention data type based on the value assigned, it takes data type)
8. Object-oriented language
9. Portable and Interactive
10. Ideal for prototypes – provide more functionality with less coding
11. Highly Efficient(Python's clean object-oriented design provides enhanced process control, and the language is equipped with excellent text processing and integration capabilities, as well as its own unit testing framework, which makes it more efficient.)
12. (IoT)Internet of Things Opportunities
13. Interpreted Language
14. Portable across Operating systems

**Applications :**

1. GUI based desktop applications
2. Graphic design, image processing applications, Games, and Scientific/ computational Applications
3. Web frameworks and applications
4. Enterprise and Business applications

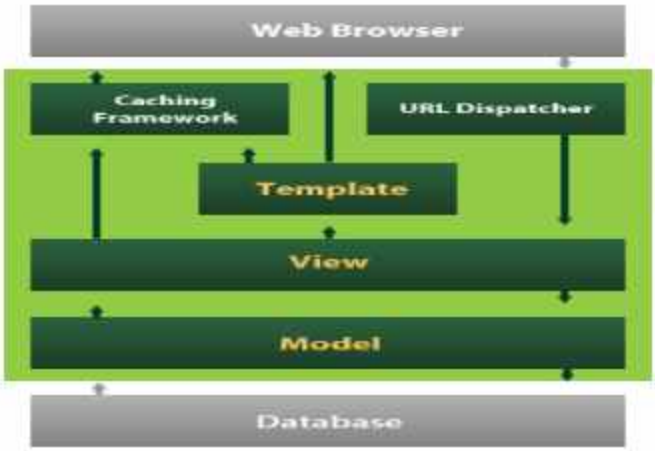
5. Operating Systems
6. Education
7. Database Access
8. Language Development
9. Prototyping
10. Software Development

**Organizations using Python :**

1. Google(Components of Google spider and Search Engine)
2. Yahoo(Maps)
3. YouTube
4. Mozilla
5. Dropbox
6. Microsoft
7. Cisco
8. Spotify
9. Quora

## DJANGO

Django is a high-level Python web framework that enables rapid development of secure and maintainable websites. Built by experienced developers, Django takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It is free and open source, has a thriving and active community, great documentation, and many options for free and paid-for support.




Django helps you write software that is:

### Complete

Django follows the "Batteries included" philosophy and provides almost everything developers might want to do "out of the box". Because everything you need is part of the one "product", it all works seamlessly together, follows consistent design principles, and has extensive and up-to-date documentation.

### Versatile

Django can be (and has been) used to build almost any type of website — from content management systems and wikis, through to social networks and news sites. It can work with any client-side framework, and can deliver content in almost any format (including HTML, RSS feeds, JSON, and XML).

Internally, while it provides choices for almost any functionality you might want (e.g. several popular databases, templating engines, etc.), it can also be extended to use other components if needed.

**Secure**

Django helps developers avoid many common security mistakes by providing a framework that has been engineered to "do the right things" to protect the website automatically. For example, Django provides a secure way to manage user accounts and passwords, avoiding common mistakes like putting session information in cookies where it is vulnerable (instead cookies just contain a key, and the actual data is stored in the database) or directly storing passwords rather than a password hash.

*A password hash is a fixed-length value created by sending the password through a cryptographic hash function. Django can check if an entered password is correct by running it through the hash function and comparing the output to the stored hash value. However due to the "one-way" nature of the function, even if a stored hash value is compromised it is hard for an attacker to work out the original password.*

Django enables protection against many vulnerabilities by default, including SQL injection, cross-site scripting, cross-site request forgery and clickjacking

**Scalable**

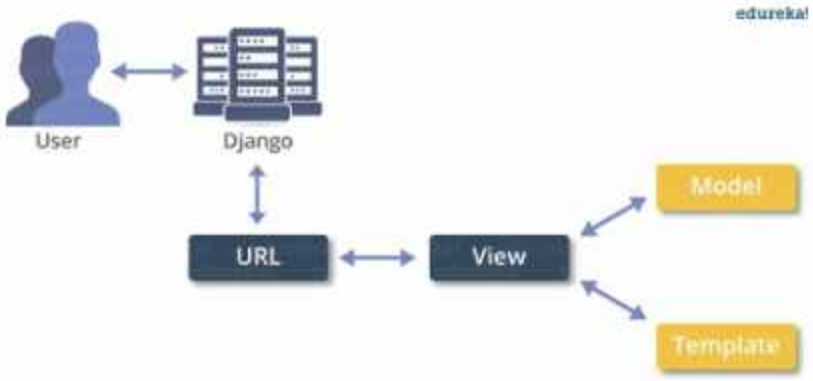
Django uses a component-based "shared-nothing" architecture (each part of the architecture is independent of the others, and can hence be replaced or changed if needed). Having a clear separation between the different parts means that it can scale for increased traffic by adding hardware at any level: caching servers, database servers, or application servers. Some of the busiest sites have successfully scaled Django to meet their demands (e.g. Instagram and Disqus, to name just two).

**Maintainable**

Django code is written using design principles and patterns that encourage the creation of maintainable and reusable code. In particular, it makes use of the Don't Repeat Yourself (DRY) principle so there is no unnecessary duplication, reducing the amount of code. Django also promotes the grouping of related functionality into reusable "applications" and, at a lower level, groups related code into modules (along the lines of the Model View Controller (MVC) pattern).

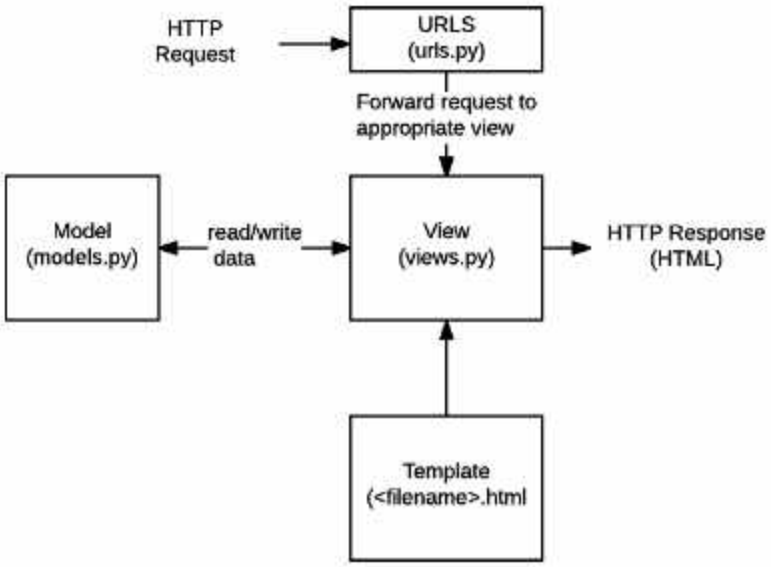
**Portable**

Django is written in Python, which runs on many platforms. That means that you are not tied to any particular server platform, and can run your applications on many flavors of Linux, Windows, and macOS. Furthermore, Django is well-supported by many web hosting providers, who often provide specific infrastructure and documentation for hosting Django sites.




In a traditional data-driven website, a web application waits for HTTP requests from the web browser (or other client). When a request is received the application works out what is needed based on the URL and possibly information in `POST` data or `GET` data. Depending on what is required it may then read or write information from a database or perform other tasks required to satisfy the request. The application will then return a response to the web browser, often dynamically creating an HTML page for the browser to display by inserting the retrieved data into placeholders in an HTML template.

Django web applications typically group the code that handles each of these steps into separate files:




- **URLs:** While it is possible to process requests from every single URL via a single function, it is much more maintainable to write a separate view function to handle each resource. A URL mapper is used to redirect HTTP requests to the appropriate view based on the request URL. The URL mapper can also match particular patterns of strings or digits that appear in a URL and pass these to a view function as data.
- **View:** A view is a request handler function, which receives HTTP requests and returns HTTP responses. Views access the data needed to satisfy requests via *models*, and delegate the formatting of the response to *templates*.
- **Models:** Models are Python objects that define the structure of an application's data, and provide mechanisms to manage (add, modify, delete) and query records in the database.
- **Templates:** A template is a text file defining the structure or layout of a file (such as an HTML page), with placeholders used to represent actual content. A *view* can dynamically create an HTML page using an HTML template, populating it with data from a *model*. A template can be used to define the structure of any type of file; it doesn't have to be HTML!

**Sending the request to the right view (urls.py)**

A URL mapper is typically stored in a file named **urls.py**. In the example below, the mapper (`urlpatterns`) defines a list of mappings between *routes* (specific URL *patterns)* and corresponding view functions. If an HTTP Request is received that has a URL matching a specified pattern, then the associated view function will be called and passed the request.

```
urlpatterns = [
    path('admin/', admin.site.urls),
    path('book/<int:id>/', views.book_detail, name='book_detail'),
    path('catalog/', include('catalog.urls')),
    re_path(r'^([0-9]+)/$', views.best),
]
```

The `urlpatterns` object is a list of `path()` and/or `re_path()` functions (Python lists are defined using square brackets, where items are separated by commas and may have an optional trailing comma. For example: `[item1, item2, item3,]`).

The first argument to both methods is a route (pattern) that will be matched. The `path()` method uses angle brackets to define parts of a URL that will be captured and passed through to the view function as named arguments. The `re_path()` function uses a flexible pattern matching approach known as a regular expression. We'll talk about these in a later article!

The second argument is another function that will be called when the pattern is matched. The notation `views.book_detail` indicates that the function is called `book_detail()` and can be found in a module called `views` (i.e. inside a file named `views.py`)

**Handling the request (views.py)**

Views are the heart of the web application, receiving HTTP requests from web clients and returning HTTP responses. In between, they marshal the other resources of the framework to access databases, render templates, etc.

The example below shows a minimal view function `index()`, which could have been called by our URL mapper in the previous section. Like all view functions it receives an `HttpRequest` object as a parameter (`request`) and returns an `HttpResponse` object. In this case we don't do anything with the request, and our response returns a hard-coded string. We'll show you a request that does something more interesting in a later section.

```
# filename: views.py (Django view functions)

from django.http import HttpResponse

def index(request):
    # Get an HttpRequest - the request parameter
    # perform operations using information from the request.
    # Return HttpResponse
    return HttpResponse('Hello from Django!')
```

Views are usually stored in a file called **views.py**.

**Defining data models (models.py)**

Django web applications manage and query data through Python objects referred to as models. Models define the structure of stored data, including the field *types* and possibly also their maximum size, default values, selection list options, help text for documentation, label text for forms, etc. The definition of the model is independent of the underlying database — you can choose one of several as part of your project settings. Once you've chosen what database you want to use, you don't need to talk to it directly at all — you just write your model structure and other code, and Django handles all the "dirty work" of communicating with the database for you.

The code snippet below shows a very simple Django model for a `Team` object. The `Team` class is derived from the Django class `models.Model`. It defines the team name and team level as character fields and specifies a maximum number of characters to be stored for each record. The `team_level` can be one of several values, so we define it as a choice field and provide a mapping between choices to be displayed and data to be stored, along with a default value.

```
# filename: models.py
```

```
from django.db import models

class Team(models.Model):
    team_name = models.CharField(max_length=40)

    TEAM_LEVELS = (
        ('U09', 'Under 09s'),
        ('U10', 'Under 10s'),
        ('U11', 'Under 11s'),
        # …
        # list other team levels
    )
    team_level    =    models.CharField(max_length=3,    choices=TEAM_LEVELS,
default='U11')
```

**Querying data (views.py)**

The Django model provides a simple query API for searching the associated database. This can match against a number of fields at a time using different criteria (e.g. exact, case-insensitive, greater than, etc.), and can support complex statements (for example, you can specify a search on U11 teams that have a team name that starts with "Fr" or ends with "al").

The code snippet shows a view function (resource handler) for displaying all of our U09 teams. The `list_teams = Team.objects.filter(team_level__exact="U09")` line shows how we can use the model query API to filter for all records where the `team_level` field has exactly the text '`U09`' (note how this criteria is passed to the `filter()` function as an argument, with the field name and match type separated by a double underscore: `team_level__exact`).

```
## filename: views.py
```

```
from django.shortcuts import render
from .models import Team

def index(request):
    list_teams = Team.objects.filter(team_level__exact="U09")
    context = {'youngest_teams': list_teams}
    return render(request, '/best/index.html', context)
```

This function uses the `render()` function to create the `HttpResponse` that is sent back to the browser. This function is a *shortcut*; it creates an HTML file by combining a specified HTML template and some data to insert in the template (provided in the variable named "`context`"). In the next section we show how the template has the data inserted in it to create the HTML.

**Rendering data (HTML templates)**

Template systems allow you to specify the structure of an output document, using placeholders for data that will be filled in when a page is generated. Templates are often used to create HTML, but can also create other types of document. Django supports both its native templating system and another popular Python library called Jinja2 out of the box (it can also be made to support other systems if needed).

The code snippet shows what the HTML template called by the `render()` function in the previous section might look like. This template has been written under the assumption that it will have access to a list variable called `youngest_teams` when it is rendered (this is contained in the `context` variable inside the `render()` function above). Inside the HTML skeleton we have an expression that first checks if the `youngest_teams` variable exists, and then iterates it in a `for` loop. On each iteration the template displays each team's `team_name` value in an `<li>` element.

```
## filename: best/templates/best/index.html

<!DOCTYPE html>
```

```
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>Home page</title>
</head>
<body>
  {% if youngest_teams %}
    <ul>
      {% for team in youngest_teams %}
        <li>{{ team.team_name }}</li>
      {% endfor %}
    </ul>
  {% else %}
    <p>No teams are available.</p>
  {% endif %}
</body>
</html>
```

## SYSTEM TESTING

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub assemblies, assemblies and/or a finished product It is the process of exercising software with the intent of ensuring that the Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement.

## TYPES OF TESTS

### Unit testing

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

### Integration testing

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

**Functional test**

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

Valid Input : identified classes of valid input must be accepted.

Invalid Input : identified classes of invalid input must be rejected.

Functions : identified functions must be exercised.

Output : identified classes of application outputs must be exercised.

Systems/Procedures : interfacing systems or procedures must be invoked.

Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

**System Test**

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

**White Box Testing**

White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

## Black Box Testing

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box .you cannot "see" into it. The test provides inputs and responds to outputs without considering how the software works.

## Unit Testing

Unit testing is usually conducted as part of a combined code and unit test phase of the software lifecycle, although it is not uncommon for coding and unit testing to be conducted as two distinct phases.

## Test strategy and approach

Field testing will be performed manually and functional tests will be written in detail.

### Test objectives

- All field entries must work properly.
- Pages must be activated from the identified link.
- The entry screen, messages and responses must not be delayed.

### Features to be tested

- Verify that the entries are of the correct format
- No duplicate entries should be allowed
- All links should take the user to the correct page.

## Integration Testing

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects.

The task of the integration test is to check that components or software applications, e.g. components in a software system or – one step up – software applications at the company level – interact without error.

**Test Results:** All the test cases mentioned above passed successfully. No defects encountered.

**Acceptance Testing**

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

**Test Results:** All the test cases mentioned above passed successfully. No defects encountered

## OUTPUT SCREENS (FORMS & REPORTS)

Driver Drowsiness Monitoring System using VisualBehaviour and Machine Learning

In this project by monitoring Visual Behaviour of a driver with webcam and machine learning SVM (support vector machine) algorithm we are detecting Drowsiness in a driver. This application will use inbuilt webcam to read pictures of a driver and then using OPENCV SVM algorithm extract facial features from the picture and then check whether driver in picture is blinking his eyes for consecutive 20 frames or yawning mouth then application will alert driver with Drowsiness messages. We are using SVM pre-trained drowsiness model and then using Euclidean distance function we are continuously checking or predicting EYES and MOUTH distance closer to drowsiness, if distance is closer to drowsiness then application will alert driver.

To implement above concept we are using following modules

Video Recording: Using this module we will connect application to webcam using OPENCV built-in function called VideoCapture.

Frame Extraction: Using this module we will grab frames from webcam and then extract each picture frame by frame and convert image into 2 dimensional array.

Face Detection & Facial Landmark Detection: Using SVM algorithm we will detect faces from images and then extract facial expression from the frames.

Detection: Using this module we will detect eyes and mouth from the face

Calculate: Using this module we will calculate distance with Euclidean Distance formula to check whether given face distance closer to eye blinks or yawning, if eyes blink for 20 frames continuously and mouth open as yawn then it will alert driver.

OpenCV is an artificial intelligence API available in python to perform various operation on images such as image recognition, face detection, and convert images to gray or coloured imagesetc. This API written in C++ languages and then make C++ functions available to call from python using native language programming. Steps involved in face detection using OpenCV.

Face Detection Using OpenCV

This seems complex at first but it is very easy. Let me walk you through the entire process and you will feel the same.

Step 1: Considering our prerequisites, we will require an image, to begin with. Later we need to create a cascade classifier which will eventually give us the features of the face.

Step 2: This step involves making use of OpenCV which will read the image and the features file. So at this point, there are NumPy arrays at the primary data points.

All we need to do is to search for the row and column values of the face NumPy N dimensional array. This is the array with the face rectangle coordinates.

Step 3: This final step involves displaying the image with the rectangular face box.

SVM Description

Machine learning involves predicting and classifying data and to do so we employ various machine learning algorithms according to the dataset. SVM or Support Vector Machine is a linear model for classification and regression problems. It can solve linear and non-linear problems and work well for many practical problems. The idea of SVM is simple: The algorithm creates a line or a hyperplane which separates the data into classes. In machine learning, the radial basis function kernel, or RBF kernel, is a popular kernel function used in various kernelized learning algorithms. In particular, it is commonly used in support vector machine classification. As a simple example, for a classification task with only two features (like the image above), you can think of a hyperplane as a line that linearly separates and classifies a set of data.

Intuitively, the further from the hyperplane our data points lie, the more confident we are that they have been correctly classified. We therefore want our data points to be as far away from the hyperplane as possible, while still being on the correct side of it.

So when new testing data is added, whatever side of the hyperplane it lands will decide the class that we assign to it.

How do we find the right hyperplane?

Or, in other words, how do we best segregate the two classes within the data?

The distance between the hyperplane and the nearest data point from either set is known as the margin. The goal is to choose a hyperplane with the greatest possible margin between the hyperplane and any point within the training set, giving a greater chance of new data being classified correctly.

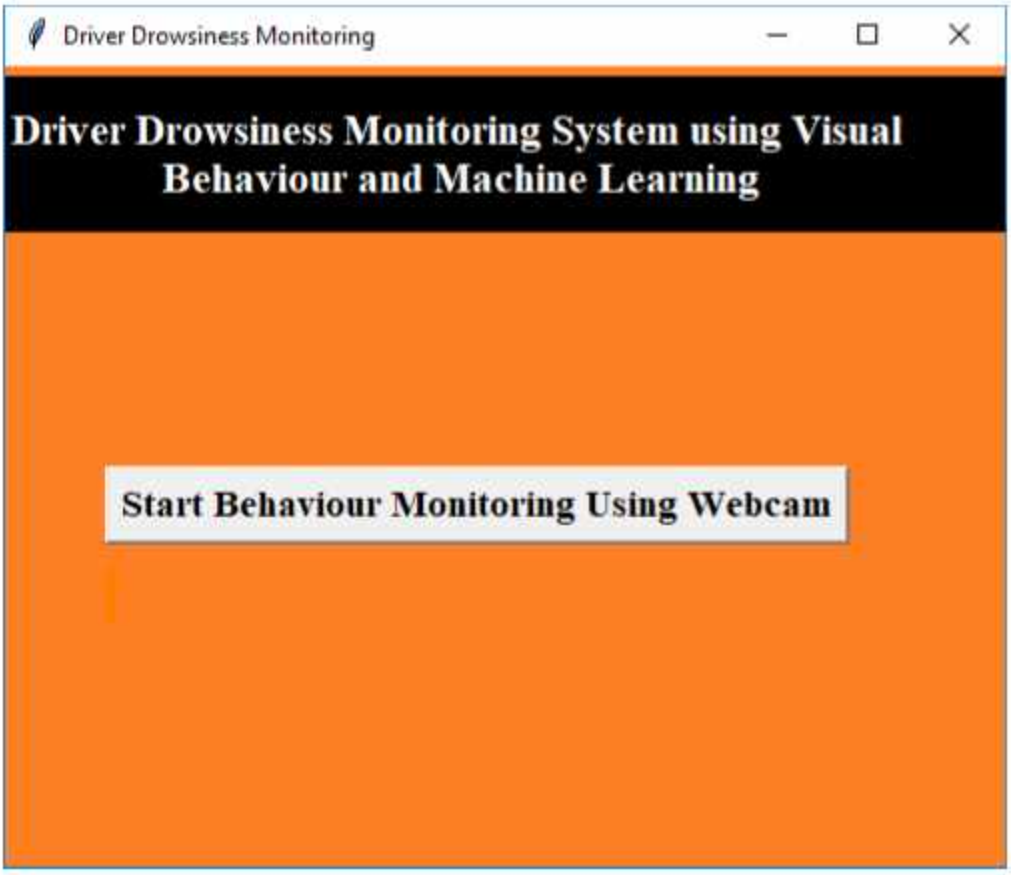
Project Description

Drowsy driving is one of the major causes of roadaccidents and death. Hence, detection of driver's fatigue and itsindication is an active research area. Most of the conventionalmethods are either vehicle based, or behavioural based orphysiological based. Few methods are intrusive and distract thedriver, some require expensive sensors and data handling.Therefore, in this study, a low cost, real time driver's drowsinessdetection system is developed with acceptable accuracy. In thedeveloped system, a webcam records the video and driver's face is
detected in each frame employing image processing techniques.Facial landmarks on the detected face are pointed andsubsequently the eye aspect ratio, mouth opening ratio and nose

length ratio are computed and depending on their values,drowsiness is detected based on developed adaptive thresholding.

## Screen shots

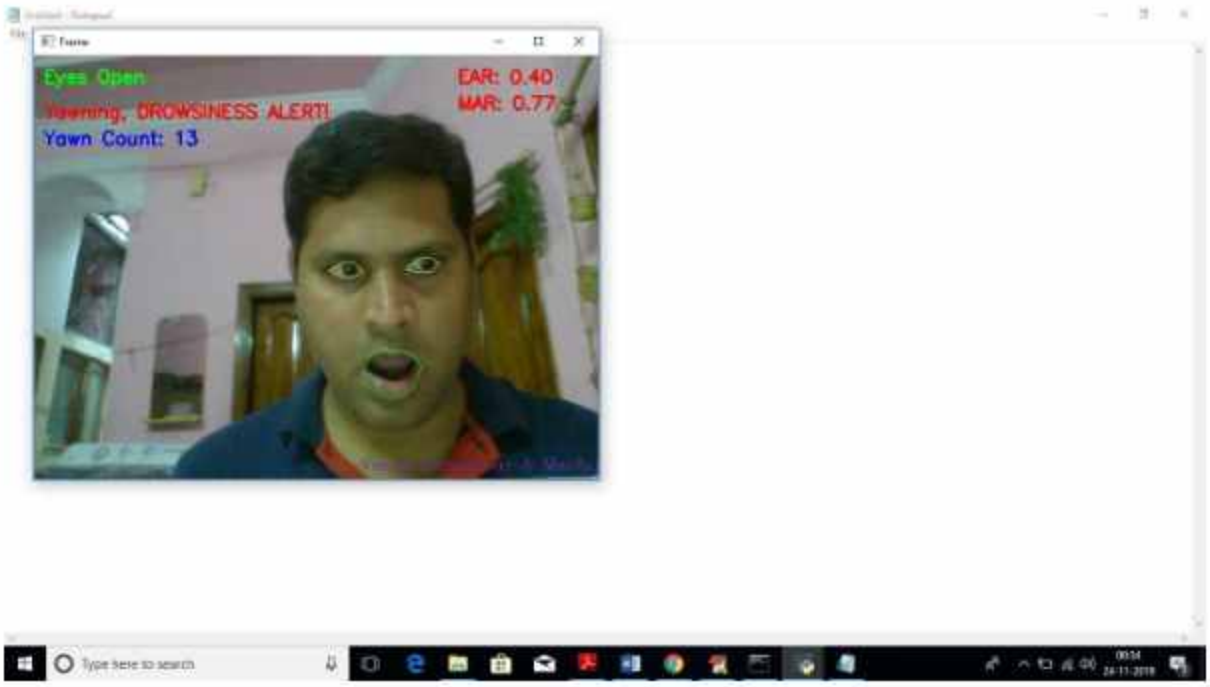
To run this project double click on 'run.bat' file to get below screen

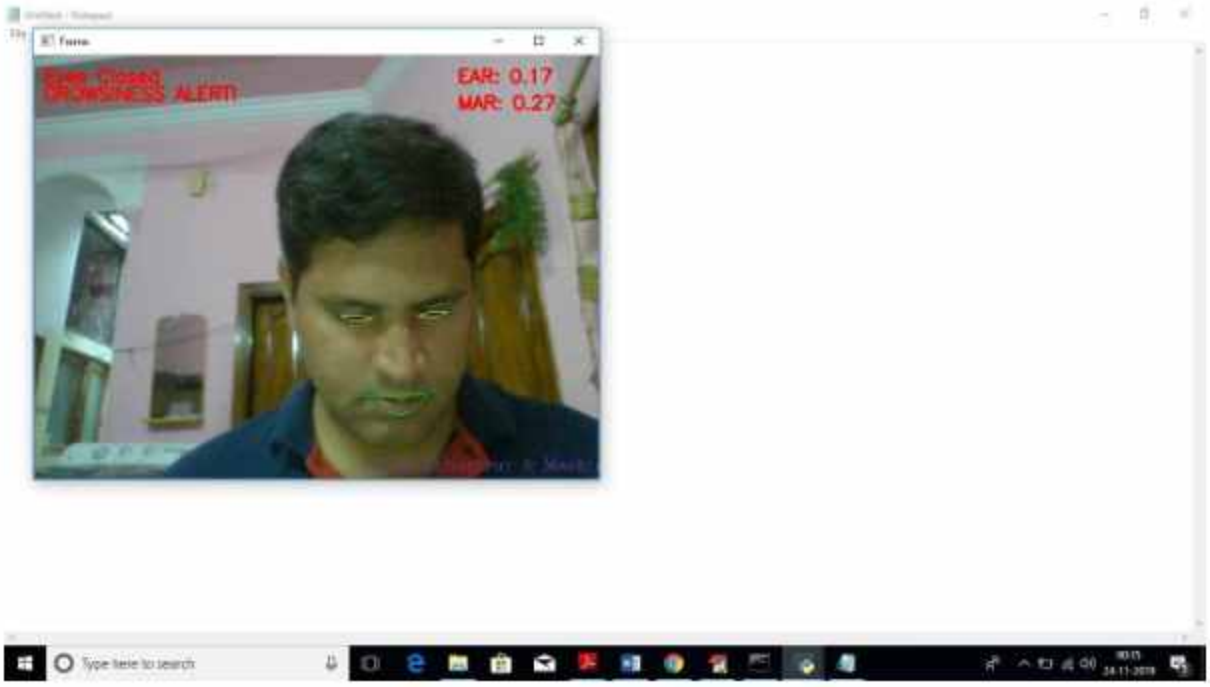



In above screen click on 'Start Behaviour Monitoring Using Webcam' button to connect application with webcam, after clicking button will get below screen with webcam streaming


In above screen we can see web cam stream then application monitor all frames to see person eyes are open or not, if closed then will get below message


Similarly if mouth starts yawn then also will get alert message


Frame
Eyes Open
Yawning, DROWSINESS ALERT!
Yawn Count: 13
EAR: 0.40
MAR: 0.77
Type here to search


Frame
EAR: 0.17
MAR: 0.27
Type here to search

## FUTURE ENHANCEMENT

Drowsy driving is one of the major causes of road accidents and death. Hence, detection of driver's fatigue and its indication is an active research area. Most of the conventional methods are either vehicle based, or behavioural based or physiological based. Few methods are intrusive and distract the driver, some require expensive sensors and data handling. Therefore, in this study, a low cost, real time driver's drowsiness detection system is developed with acceptable accuracy. In the developed system, a webcam records the video and driver's face is detected in each frame employing image processing techniques. Facial landmarks on the detected face are pointed and subsequently the eye aspect ratio, mouth opening ratio and nose length ratio are computed and depending on their values, drowsiness is detected based on developed adaptive thresholding. Machine learning algorithms have been implemented as well in an offline manner. A sensitivity of 95.58% and specificity of 100% has been achieved in Support Vector Machine based classification

## CONCLUSION

In this paper, a low cost, real time driver drowsiness monitoring system has been proposed based on visual behavior and machine learning. Here, visual behavior features like eye aspect ratio, mouth opening ratio and nose length ratio are computed from the streaming video, captured by a webcam. An adaptive thresholding technique has been developed to detect driver drowsiness in real time. The developed system works accurately with the generated synthetic data. Subsequently, the feature values are stored and machine learning algorithms have been used for classification. Bayesian classifier, FLDA and SVM have been explored here. It has been observed that FLDA and SVM outperform Bayesian classifier. The sensitivity of FLDA and SVM is 0.896 and 0.956 respectively whereas the specificity is 1 for both. As FLDA and SVM give better accuracy, work will be carried out to implement them in the developed system to do the classification (i.e., drowsiness detection) online. Also, the system will be implemented in hardware to make it portable for car system and pilot study on drivers will be carried out to validate the developed system.

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Dataset: https://sites.google.com/site/invedrifac/

A PROJECT REPORT

# Phishing Email Detection Using Improved RCNN Model


Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**

Submitted by

NEDURU. RAKESH (2211710067)

SOORA. NISCHALA (2211710105)

V. SAIKRISHNNA (221710127)

Under the guidance of

Mr. K. SRIDHAR

(Head, Department of Computer Science)


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2022-2023

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ncipal

## CERTIFICATE

This is to certify that **Neduru. Rakesh** and **Soora. Nischala, V. Saikrishnna** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Phishing Email Detection Using Improved RCNN Model"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

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Rapid Technologie

Date: 5th July 2023.

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This is to certify that **Neduru Rakesh (2211710067), V Sai Krishna (2211710125) and Soora Nischala (2211710105)** of **Vaagdevi Degree and P.G College** are involved as project trainees in the project titled **"Phishing Email Detection Using Improved RCNN Model"** from Rapid Technologies, in partial fulfillment for the award of **"Master of Computer Applications"** degree by Kakatiya University, Hanamkonda. They have been extended access to computer systems, server access and all the software at our development facility center.

They have carried out project work during the period 20th March 2023 to 5th July 2023 under our guidance and supervision.

This project was developed and tested successfully at our development facility center.

Rapid Technologies Telangana, India-506009

K. RAJU
Project Guide

# DECLARATION

We, the undersigned hereby declare that the project **Phishing Email Detection Using Improved RCNN Model** with special reference to *Rapid Technologies – Hyderabad*, developed and submitted by us to **KAKATIYA UNIVERSITY**, Hanamkonda in partial fulfillments for the award of degree of **Master of Computer Applications** under the guidance of **Mr. K. SRIDHAR**, is our original work and implemented by us.

Place: Hanamkonda.

Date:

Neduru. Rakesh

Soora. Nischala

V.SaiKrishnna

## ACKNOWLEDGEMENT

We wish to take this opportunity to express our sincere gratitude and deep sense of respect to our beloved principal, **Dr. A. SHESHA CHALAM**, Vaagdevi Degree & P.G College, Hanamkonda for making us available all the required assistance and for his support and inspiration to carry out this work in the institute.

We express our heartfelt thanks to the Head of the Department of computer Science, **Mr. K. Sridhar** for providing us with necessary infrastructure and thereby giving us freedom to carry out this project.

We also thankful to **Mr. K. Sridhar, HoD of CS** for providing the excellent facilities, motivation and valuable guidance throughout the project work. With his co-operation and encouragement we completed the project work in time.

We owe an enormous debt of gratitude to **Mr. K. Sridhar, HoD of CS** for guiding us from the beginning through the end of the project with his intellectual advices and insightful suggestions. We truly value his consistent feedback on our progress, which was always constructive and encouraging and ultimately drove us to the right direction.

Finally, we express our thanks to all the faculty members for their co-operation in completing the project.

Last but not least we thank to our parents who inspired us always to do the best.

Neduru.Rakesh

Soora.Nischala

V.Saikrishnna

A PROJECT REPORT ON

# PREDICTING THE REVIEWS OF THE RESTAURANT USING NATURAL LANGUAGE PROCESSING TECHNIQUE

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**


Submitted by

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MEESALA RAMYA (2211710069)

Under the guidance of

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(Head, Department of Computer Science)



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This is to certify that **R.Nagarani** and **M.Ramya** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Predicting The Reviews Of Restaurant Using Natural Language Processing Technique"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

**Head of the Department**

**Principal**

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**External Examiner**

Rapid Technologies

Date: 5th July 2023.

# CERTIFICATE

This is to certify that **Ramilla Nagarani (2211710004)** and **Meesala Ramya (2211710069)** of **Vaagdevi Degree and P.G College** are involved as project trainees in the project titled **"Predicting the Reviews of the Restaurant Using Natural Language Processing Technique"** from Rapid Technologies, in partial fulfillment for the award of **"Master of Computer Applications"** degree by Kakatiya University, Hanamkonda. They have been extended access to computer systems, server access and all the software at our development facility center.

They have carried out project work during the period 20th March 2023 to 5th July 2023 under our guidance and supervision.

This project was developed and tested successfully at our development facility center.

Rapid Technologies * Hyderabad, Telangana, India-500060 *

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Project-Guide

# A PROJECT REPORT ON

# Crime Rate Prediction Using K-Means Clustering Algorithm


Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**

Submitted by

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This is to certify that **Bitla Sankeerthana** and **Janga Sujatha** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Crime Rate Prediction Using K-Means Clustering Algorithm"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

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They have carried out project work during the period 20th March 2023 to 5th July 2023 under our guidance and supervision.

This project was developed and tested successfully at our development facility center.

K. RAJU
Project Guide

# A PROJECT REPORT ON

# DESIGN AND IMPLEMENTING HEART DISEASE PREDICTION USING NAIVES BAYESIAN


Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**

Submitted by

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# A PROJECT REPORT ON

# FAKE IMAGES DETECTION USING NEURAL NETWORK ALOGRITHM

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**

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This is to certify that **Myakala Akhila** and **Gande Supriya** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **Fake Images Detection Using Neural Networking Algorithms** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

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They have carried out project work during the period 20th March 2023 to 5th July 2023 under our guidance and supervision.

This project was developed and tested successfully at our development facility center.

Rapid Technologies * Hyderabad, Telangana, India-500055 *

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# A PROJECT REPORT ON

# ANALYSIS OF MACHINE LEARNING CLASSIFIERS IN BREAST CANCER DIAGNOSIS

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**


Submitted by

**BOLLAM VAMSHI SAI (2211710034)**

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This is to certify that **Bollam Vamshi Sai** and **Bandaru Bhavya Sri** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Analysis of Machine Learning Classifiers in Breast Cancer Diagnosis"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

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They have carried out project work during the period 20th March 2023 to 5th July 2023 under our guidance and supervision.

This project was developed and tested successfully at our development facility center.

Rapid Technologies * Hyderabad, Telangana, India-500090 *

K. RAJU
Project-Guide

# A PROJECT REPORT ON

## Detection Of Fake and Clone Accounts In Twitter Using Tweets

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**


Submitted by

**SOLAM SINDHUJA (2211710016)**

**GAJULA SRINITHA (2211710033)**

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Rapid Technologi

Date: 5th July 2023.

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This project was developed and tested successfully at our development facility center.

Rapid Technologies * 500090 * Hyderabad Telangana, India

K. RAJU
Project-Guide

# A PROJECT REPORT ON

**Academic Perfomance Prediction Based On Multisource, Multi Features Behavioral Data**

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**

Submitted by

**GUJJARI DHARANI** (2211710055)

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2022-2023

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Principal

## CERTIFICATE

This is to certify that **GUJJARI DHARANI** and **PASUNOOTI PRAVALIKA** students of Master of Computer Application,Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Academic Performance Prediction Based on Multisources, Multi Features Behavioural Data"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

**Head of the Department**

Department of Computer Science
VAAGDEVI DEGREE & P.G. COLLEGE
Hanamkonda.

**Principal**

Principal
Vaagdevi Degree & P.G. College
Kishanpura, Hanamkonda

**External Examiner**

Rapid Technologies

Date: 5th July 2023.

## CERTIFICATE

This is to certify that **Gujjari Dharani (2211710055) and Pasunooti Pravalika (2211710056)** of **Vaagdevi Degree and P.G College** are involved as project trainees in the project titled **"Academic Performance Prediction Based on Multisource, Multi Feature Behavioral Data"** from Rapid Technologies, in partial fulfillment for the award of **"Master of Computer Applications"** degree by Kakatiya University, Hanamkonda. They have been extended access to computer systems, server access and all the software at our development facility center.

They have carried out project work during the period 20th March 2023 to 5th July 2023 under our guidance and supervision.

This project was developed and tested successfully at our development facility center.

Rapid Technologies Hyderabad Telangana, India-500090

K. RAJU
Project-Guide

## DECLARATION

We, the undersigned hereby declare that the project **Academic Performance Prediction Based On Multisource, Multi Feature Behavioral Data** with special reference to *Rapid Technologies – Hyderabad*, developed and submitted by us to **KAKATIYA UNIVERSITY**, Hanamkonda in partial fulfillments for the award of degree of **Master of Computer Applications** under the guidance of **Mr. K. SRIDHAR**, is our original work and implemented by us.

GUJJARI DHARANI

Place: Hanamkonda.

PASUNOOTI PRAVALIKA

Date:

## ACKNOWLEDGEMENT

We wish to take this opportunity to express our sincere gratitude and deep sense of respect to our beloved principal, **Dr. A. SHESHA CHALAM**, Vaagdevi Degree & P.G College, Hanamkonda for making us available all the required assistance and for his support and inspiration to carry out this work in the institute.

We express our heartfelt thanks to the Head of the Department of computer Science, **Mr. K. Sridhar** for providing us with necessary infrastructure and thereby giving us freedom to carry out this project.

We also thankful to **Mr. K. Sridhar, HoD of CS** for providing the excellent facilities, motivation and valuable guidance throughout the project work. With his co-operation and encouragement we completed the project work in time.

We owe an enormous debt of gratitude to **Mr. K. Sridhar, HoD of CS** for guiding us from the beginning through the end of the project with his intellectual advices and insightful suggestions. We truly value his consistent feedback on our progress, which was always constructive and encouraging and ultimately drove us to the right direction.

Finally, we express our thanks to all the faculty members for their co-operation in completing the project.

Last but not least we thank to our parents who inspired us always to do the best.

GUJJARI DHARANI

PASUNOOTI PRAVALIKA

# A PROJECT REPORT ON

# CRIME TYPE AND OCCURRENCE PREDICTION USING MACHINE LEARNING

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**


Submitted by

BOMMASANI VYSHNAVI (2211710086)

PITTALA RANI (2211710102)

Under the guidance of

Mr. K. SRIDHAR

(Head, Department of Computer Science)



**VAAGDEVI DEGREE & P.G COLLEGE**

(Affiliated to Kakaitya University)

Hanamkonda, Telangana, India 506001.


2022-2023

Viswambhara Educational Society
Ph : 0870-24551

# VAAGDEVI DEGREE & P.G. COLLEGE

Accredited by NAAC with 'A' Grade
*(Approved by A.I.C.T.E., New Delhi & Affiliated to Kakatiya University)*
# 2-2-457/A, Kishanpura, Hanamkonda - 506 001, Warangal, T.S.
www.vaagdevicolleges.com, E-mail:a.schalam213@gmail.com, principal@vaagdevicolleges.com

Dr. AMARAVADI SHESHA CHALAM
M.A., P.G.C.T.E., P.G.D.T.E., Ph.D.
Principal

## CERTIFICATE

This is to certify that **Bommasani Vyshnavi** and **Pittala Rani** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Crime Type and Occurrence Prediction Using Machine Learning"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

**Head of the Department**

Department of Computer Science
VAAGDEVI DEGREE & P.G. COLLEGE
Hanamkonda.

**Principal**

Principal
Vaagdevi Degree & P.G. College
Kishanpura, Hanamkonda

**External Examiner**

Rapid Technologie

Date: 5th July 2023.

# CERTIFICATE

This is to certify that **Bommasani Vyshnavi (2211710086)** and **Pittala Rani (2211710102)** of **Vaagdevi Degree and P.G College** are involved as project trainees in the project titled **"Crime Type and Occurrence Prediction Using Machine Learning"** from Rapid Technologies, in partial fulfillment for the award of **"Master of Computer Applications"** degree by Kakatiya University, Hanamkonda. They have been extended access to computer systems, server access and all the software at our development facility center.

They have carried out project work during the period 20th March 2023 to 5th July 2023 under our guidance and supervision.

This project was developed and tested successfully at our development facility center.

Rapid Technologies

K. RAJU
Project Guide

# A PROJECT REPORT ON

## Students Performance Prediction in Online Courses Using Machine Learning Algorithm

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**


Submitted by

**Kankanala Nagarani**(22117I0042)

**Thalla Akshitha**(22117I0100)

Under the guidance of

Mr. K. SRIDHAR

(Head, Department of Computer Science)



**VAAGDEVI DEGREE & P.G COLLEGE**

(Affiliated to Kakaitya University)

Hanamkonda, Telangana, India 506001.


2022-2023

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VAAGDEVI DEGREE & P.G. COLLEGE
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ARAVADI SHESHA CHALAM
M.A., P.G.C.T.E., P.G.D.T.E., Ph.D.

## CERTIFICATE

This is to certify that **Kankanala Nagarani** and **Thalla Akshitha** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Students Performance Prediction in Online Courses Using Machine Learning Algorithm"** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

**Head of the Department**
Dept. of Computer Science
VAAGDEVI DEGREE & P.G. COLLEGE
Hanamkonda.

**Principal**
Principal
Vaagdevi Degree & P.G. College
Kishanpura, Hanamkonda

**External Examiner**

Rapid Technologies

Date: 5th July 2023.

## CERTIFICATE

This is to certify that Kankanala Nagarani (2211710042) and Thalla Akshitha (2211710100) of Vaagdevi Degree and P.G College are involved as project trainees in the project titled "Students Performance Prediction in Online Courses Using Machine Learning Algorithm" from Rapid Technologies, in partial fulfillment for the award of "Master of Computer Applications" degree by Kakatiya University, Hanamkonda. They have been extended access to computer systems, server access and all the software at our development facility center.

They have carried out project work during the period 20th March 2023 to 5th July 2023 under our guidance and supervision.

This project was developed and tested successfully at our development facility center.

Rapid Technologies * Telangana, India-500090 *

K. RAJU
Project Guide

# A PROJECT REPORT ON

# PLAGIARISM CHECKER USING FLASK

Submitted to Kakatiya University

for the partial fulfillment of the requirements for the

award of the degree of

**Master of Computer Applications**


Submitted by

**VELPUKONDA VENNELA (22117I0013)**

**GALI KEERTHANA (21117I0025)**

**GAJULA ARAVIND (22117I0066)**

Under the guidance of

**Mr. K. SRIDHAR**

(Head, Department of Computer Science)



**VAAGDEVI DEGREE & P.G COLLEGE**

(Affiliated to Kakaitya University)

Hanamkonda, Telangana, India 506001.

2022-2023

## CERTIFICATE

This is to certify that **V.Vennela , G.Keerthana** and **G.Aravind** students of Master of Computer Applications, Vaagdevi Degree & P.G College affiliated to Kakatiya University have successfully completed the project entitled **"Plagiarism Checker Using Flask "** at Vaagdevi Degree & P.G College, Hanamkonda in partial fulfillment of requirement for the award of the **Master of Computer Applications** from **Kakatiya University** is a record of bonafied work carried out by them under my supervision.

**Head of the Department** **Principal**

**External Examiner**

# DECLARATION

We, the undersigned hereby declare that the project PLAGIARISM CHECKER USING FLASK with special reference to *Rapid Technologies – Hyderabad*, developed and submitted by us to **KAKATIYA UNIVERSITY**, Hanamkonda in partial fulfillments for the award of degree of **Master of Computer Applications** under the guidance of **Mr. K. SRIDHAR**, is our original work and implemented by us.

Place: Hanamkonda.

Date:

V.Vennela

G.Keerathana

G.Aravind

## ACKNOWLEDGEMENT

We wish to take this opportunity to express our sincere gratitude and deep sense of respect to our beloved principal, **Dr. A. SHESHA CHALAM**, Vaagdevi Degree & P.G College, Hanamkonda for making us available all the required assistance and for his support and inspiration to carry out this work in the institute.

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Last but not least we thank to our parents who inspired us always to do the best.

V.Vennela

G.Keerthana

G.Aravind