MES COLLEGE OF ENGINEERING, KUTTIPPURAM
DEPARTMENT OF COMPUTER APPLICATIONS
20MCA246 – MAIN PROJECT

PRO FORMA FOR THE APPROVAL OF THE FOURTH SEMESTER MAIN PROJECT

(Note: All entries of the pro forma for approval should be filled up with appropriate and complete information. Incomplete Pro forma of approval in any respect will be rejected.)

Main Project Proposal No : _____
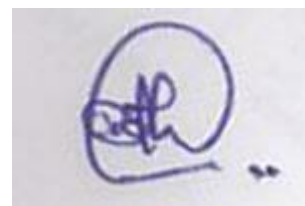*(Filled by the Department)*

Academic Year   : 2021- 22

Year of Admission   : 2020

1. Title of the Project   : BIG_MART

2. Name of the Guide   :   Ms.PRIYA.JD

3. Student Details (in BLOCK LETTERS)

Name	Register Number	Signature
MOHAMMED ADHEEB.P	MES20MCA-2025	

Date:

Approval Status :   Approved / Not Approved

Signature of
Committee Members

Comments of the Guide	Dated Signature
Initial Submission :	
First Review :	_____
Second Review :	_____

Comments of the Project Coordinator	Dated Signature
Initial Submission:	_____
First Review	_____

Second Review

Final Comments :

Dated Signature of HOD

BIG MART

Introduction:

E-commerce or electronic commerce is a process of Buying, selling, transferring, or exchanging products, services, and/or information via electronic networks and computers. Commerce is a fundamental to the success of any business. To streamline trading operations and maintain profits, the industry must focus on commerce, which deals with a lot more than just buying and selling. As the world is digitalizing, ecommerce solutions are increasingly becoming common. The advent of machine learning and artificial intelligence has further enhanced the effectiveness of ecommerce. The examples of ecommerce include eBay, Amazon, Upwork, Olx, etc.

The advantages of ecommerce shopping are Lower price for products compared to traditional shopping, Time saving, we can avoid crowds in shopping, Available wide range and verity of products, shipping/delivery options and also it provides Feedback option from customers.

The ecommerce provides two options for selling products they are Ecommerce Website and Ecommerce Mobile Application. Some customers choose to buy goods from the website and others from the mobile app. The company needs to make sure which one gets the most revenue/annual income for future benefits. The annual income of a company is the total money it earns from its business operation during one financial year.

Objectives:

The objective of this project is which variables (website or mobile app) are contributing towards the more annual income prediction based on Ecommerce Customers csv file from the company.

Firstly I use Exploratory Data Analysis (EDA), it is an approach to analyse the data using visual techniques. It is used to discover trends, patterns, or to check assumptions with the help of statistical summary and graphical representations.

The next step is Data Preparation, which includes:
● Data cleaning: - cleaning of data by checking for null values/missing values (if we have null values we need to impute mean, median or mode values)
● checking for duplicates and conversion of data types
● Feature engineering: - elimination of unwanted features, feature addition (if needed) and feature transformation
● Data transformation: - I need to transform the data to get good model (with low errors)

Then I test the data by using various Testing strategies, they are Normality Testing, Multicollinearity testing and also checking the outliers and Relationship between features and target variables. Finally I realize which variables are contributing towards the more annual income prediction. And split the data set for building models from it.

Then I build 4 models (Linear Regression,, Lasso, ElasticnetCV, Ridge Regression) from it, and find out the errors (MAE - Mean Absolute Error, RMSE - Root Mean Square Error) from these models And also again build these same model and find out errors after the aggregation log transformation are applied to these models for getting the accurate result. Then I finally get the best model out of these models with low MAE & RMSE on normal models and other transformation models. And build a page for annual income prediction for a new record (PagePython raw file, working through Sreamlit) So that I can predict the annual income of a new record by giving the values to the variables of the dataset.

Problem Definition:

A project with an Ecommerce company based in London sells clothing online but they also have in-store style and clothing advice sessions. Customers come in to the store, have sessions/meetings with a personal stylist, then they can go home and order either on a mobile app or website for the clothes they want.

The company is trying to decide whether to focus their efforts on their mobile app experience or their website. They've asked to help them figure it out.

I worked with the Ecommerce Customers csv file from the company. It has Customer info, such as Email, Address, and their color Avatar. Then it also has numerical value columns:

- Avg. Session Length: Average session of in-store style advice sessions.
- Time on App: Average time spent on App in minutes
- Time on Website: Average time spent on Website in minutes
- Length of Membership: How many years the customer has been a member.
- Yearly Amount Spent: The total amount the customer is spending.

Basic functionalities:

Interpret which variables are contributing towards the more annual income prediction in an ecommerce company based on the Ecommerce Customers csv file from the company (Attributes -> Average Session length, Time on App, Time on Website, Length of Membership, Yearly amount spent).

Tools / Platform, Hardware and Software Requirements:

Hardware Requirements

Processor: i5 min
Hard Disk: 100 GB or more
RAM: 8 GB

Software Requirements

Language: Python
Front End: Python-Jupyter
Operating system: windows 8 or above
IDE: Anaconda Navigator
Dataset: 2020 sales result
Techniques Used: Linear Regression, Decision Tree, Lasso, ElasticnetCV, Ridge Regression.

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Main Project Proposal No : _____
(Filled by the Department)

Academic Year   : 2021- 22

Year of Admission   : 2020

1. Title of the Project   : AI SYSTEM FOR PREDICTION AND RECOMMENDATION OF DIABETES

2. Name of the Guide   :   Ms.PRIYA.JD

3. Student Details (in BLOCK LETTERS)

Name	Register Number	Signature
MOHAMMED ADHEEB.P	MES20MCA-2025	

Date:

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Second Review :	_____

Comments of the Project Coordinator	Dated Signature
Initial Submission:	
First Review	_____
Second Review	_____

Final Comments :   Dated Signature of HOD

AI SYSTEM FOR PREDICTION AND RECOMMENDATION FOR DIABETES

Introduction:

Evidence-based medicine is a powerful tool to help minimize treatment variation and unexpected costs. Large amount of healthcare data such as physician notes, medical history, medical prescription, lab and scan reports generated is useless until there is a proper method to process this data interactively in real-time. We have an effective framework which is capable of handling large amount of structured, unstructured and live streaming data about the patients from their social network activities.

Objectives:

Healthcare Recommendation System(HRS)using machine learning can be developed to predict about the health condition by analyzing patient's life style, physical health factors, mental health factors and their social network activities. For example, on training the model with age of women and diabetes condition helps to predict the chances of getting diabetes for women patients without detailed diagnosis.

Problem Definition:

Data driven approaches like data mining and machine learning can be applied to extract insights from heterogeneous data of the patients. It provides individual recommendations based on the past learning experience and the patterns extracted from clinical data. Combination of information retrieval and machine learning can be used for medical diabetes classification.

Basic functionalities:

Step 1: Data collection and dataset preparation: Medical case history and diagnosis data are collected and stored.

Step 2: Developing a recommender system based on predictions using AI: Prediction is expressed as a numerical value that represents the disease risk diagnosis for future cases based on active patients.

Step 3: Training and experimentation on datasets: Diabetes data set can be taken from KN speciality clinic and downloaded from UCI repository.

Step 4: Deployment and analysis on real life scenario: The trained and tested recommender system will be developed in real-life scenario where historical medical records of diabetic patients will be collected from local hospitals.

Tools / Platform, Hardware and Software Requirements:

Hardware Requirements

Processor: i3

Hard Disk: 500 GB

RAM: 4 GB

Software Requirements

Language: Python

Front End: Python-django

Back end: SQlite

Techniques Used: Deep learning libraries will be exploited for the development and experimentation of the project. Training will be conducted on NVIDIA GPUs for training the CNN model

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Main Project Proposal No : _____ *(Filled by the Department)*	Academic Year : 2021- 22 Year of Admission : 2020

1. Title of the Project : FACE RECOGNITION BASED ATTENDANCE SYSTEM

2. Name of the Guide : Ms.PRIYA.JD

3. Student Details (in BLOCK LETTERS)

Name	Register Number	Signature
MOHAMMED ADHEEB.P	MES20MCA-2025	

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_____

First Review   :

_____

Second Review   :

Comments of the Project Coordinator   Dated Signature

Initial Submission:

_____

First Review

FACE RECOGNITION BASED ATTENDANCE SYSTEM

Introduction:

Attendance is an important part of daily classroom evaluation. At the beginning and ending of class, it is usually checked by the teacher, but it may appear that the teacher may miss someone or some students answer multiple times. Face recognition-based attendance system is a problem of recognizing face for taking attendance by using face recognition technology based on high-definition monitor video and other information technology.

Objectives: The concept of face recognition is to give a computer system the ability to finding and recognizing human faces fast and precisely in images or videos. The face recognition is an integral part of biometrics. In biometrics, basic traits of human are matched to the existing data. Facial features are extracted and implemented through algorithms, which are efficient and some modifications are done to improve the existing algorithm models. The face recognition system generally involves two stages:-

• Face Detection-where the input image is searched to find any face, then image processing cleans up the facial image for easier recognition.

• Face Recognition-where the detected and processed face is compared to the database of known faces to decide who that person is.

Problem Definition:

Face detection is a basic technology of human-computer interaction. It can get information from the faces in picture or video. Face recognition technology analyses the face image to extract the facial feature, and then identify specific target. The development of deep learning technology further improves the accuracy of face recognition. Deep Learning CNNs have made significant breakthrough in image classification.

Basic functionalities:

1: Record a video to ensure that every student is appeared in the video.

2: Separate a frame per minute for class attendance.

3: Apply deep learning algorithm CNN (Convolutional neural networks for face detection module. Detect all student's faces and output coordinates.

4: Apply deep learning face recognition algorithm for face recognition.

5: Automatic attendance analysis module. The seats of students are fixed so do not contrast their faces' coordinate and determine the identity of each student to achieve automatic attendance.

Tools / Platform, Hardware and Software Requirements:

Hardware Requirements

Processor: i3

Hard Disk: 500 GB

RAM: 4 GB

Software Requirements

Language: Python

Front End: Python-django

Back end: SQlite

Techniques Used:

Tools such as Anaconda Python and libraries such as OpenCV, TensorFlow, and Keras will be utilized for this process. Training will be conducted on NVDIA GPUs.