Project Report

IBM-Project-31693-1660204264

University Admit Eligibility Predictor

1. INTRODUCTION

Project Overview

The problem statement is to design a college prediction/ prediction system and to provide a probabilistic insight into college administration for overall rating, cut-offs of the colleges, admission intake and preferences of students.

It has always been a troublesome process for students in finding the perfect university and course for their further studies.

At times they do know which stream they want to get into, but it is not easy for them to find colleges based on their academic marks and other performances.

We aim to develop and provide a place which would give a probabilistic output of how likely it is to get into a university given their details.

Purpose

- Students are often worried about their chances of admission to University.
- The aim of this project is to help students in shortlisting universities with their profiles.
- The predicted output gives them a fair idea about their admission chances to a particular university.
- This analysis should also help students who are currently preparing or will be preparing to get a better idea.

2. LITERATURE SURVEY

Existing problem

- We have so many websites with problems in inaccuracy and not getting the right thing out.
- Our project, which is based on University Admit Eligibility Predictor, with a great accuracy mark, gives the output more effectively and efficiently.

References

- P.KaviPriya**, "**A Review on Predicting Students' Academic Performance Earlier, Using Data Mining Techniques", International Jour-nal of Advanced Research in Computer Science and Software Engineering
- Ali Daud, Naif Radi Aljohani, "Predicting Student Performance using Advanced Learning Analytics", 2017 International World Wide Web Conference Committee (IW3C2).
- Marium-E-Jannat,SaymaSultana,Munira Akther, "A Probabilistic Machine Learning Approach for Eligible Candidate Selection", Inter-national Journal of Computer Applications (0975 – 8887)Volume 144 – No.10, June 2016
- Sudheep Elayidom, Dr. Sumam Mary Idikkula, "Applying Data mining using Statistical Techniques for Career Selection", International Journal of Recent Trends in Engineering, Vol. 1, No. 1, May 2009.
- Dr. Mahendra Tiwari ,Manmohan Mishra, "Accuracy Estimation of Classification Algorithms with DEMP Model", International Jour-nal of Advanced Research in Computer and Communication Engineering Vol. 2, Issue 11, November 2013.
- Ms. Roshani Ade,Dr. P. R. Deshmukh, "An incremental ensemble of classifiers as a technique for prediction of student's career choice", 2014 First International Conference on Networks & Soft Compu-ting
- Nikita Gorad ,Ishani Zalte, "Career Counselling Using Data Mining", International Journal of Innovative Research in Computer and Communication Engineering.
- Bo Guo , Rui Zhang, "Predicting Students Performance in Educa-tional Data Mining",2015 International Symposium on Educational Technology
- Ali Daud , Naif Radi Aljohani , "Predicting Student Performance using Advanced Learning Analytics"
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- Comparative Analysis of KNN Algorithms: ID3, C4.5 and KNNShiju Sathyadevan and Remya R. Nair

- Yu Lou, Ran Ren, "A Machine Learning Approach for Future Ca-reer Planning"
- Gareth James ,Daniela Witten ,Trevor Hastie, "An Introduction to Statistical Learning with Applications in R"
- Anuj Karpatne, Gowtham Atluri, "Theory- Guided Data Science: A New Paradigm for Scientific Discovery from Data", IEEE trans-actions on knowledge and data engineering, vol.29, no. 10, october 2017.

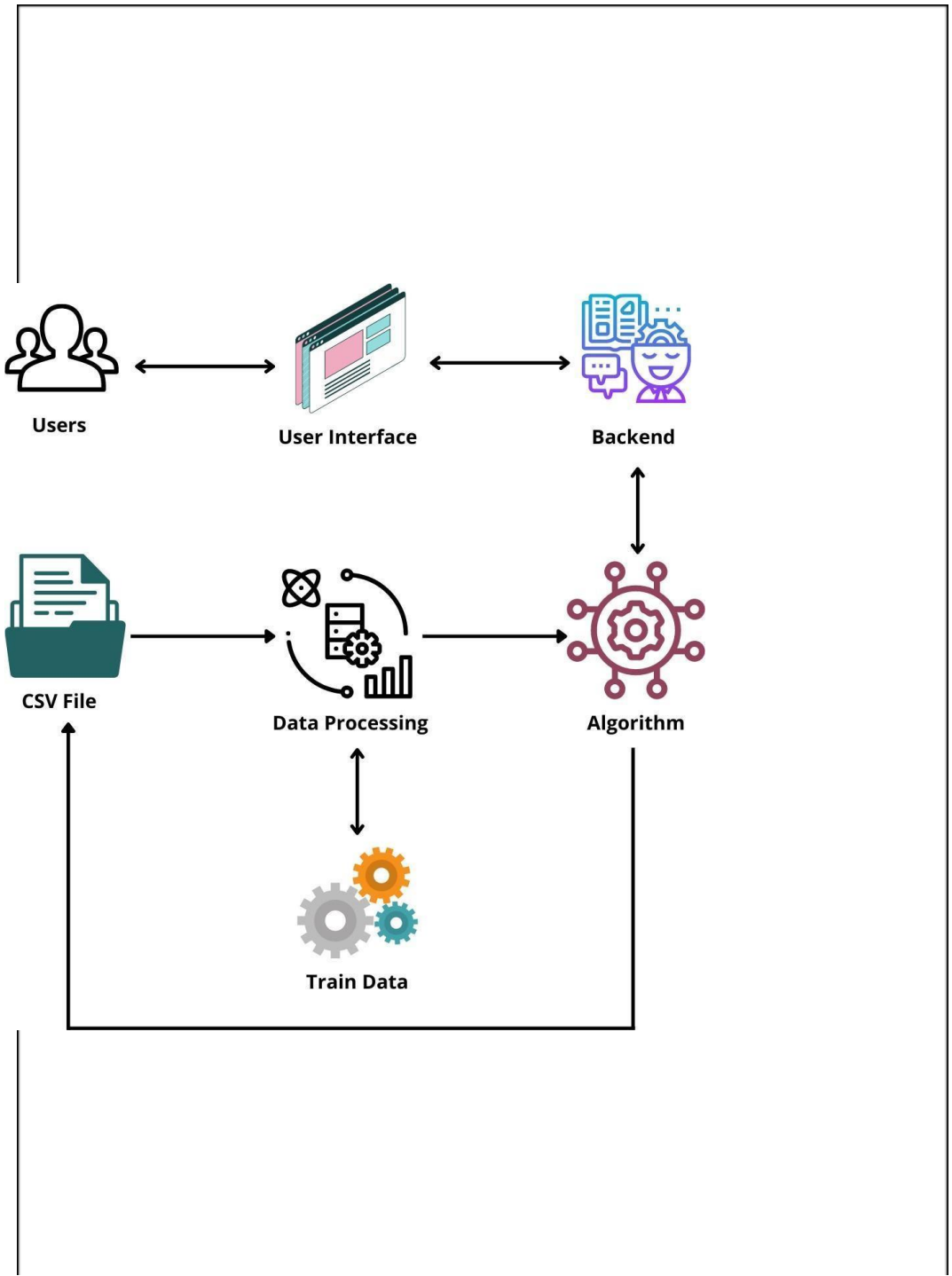
Problem Statement Definition

Problem Statement

- The problem statement is to design a college prediction/ prediction system and to provide a probabilistic insight into college administration for overall rating, cut-offs of the colleges, admission intake and preferences of students.
- It has always been a troublesome process for students in finding the perfect university and course for their further studies.
- At times they do know which stream they want to get into, but it is not easy for them to find colleges based on their academic marks and other performances.
- We aim to develop and provide a place which would give a probabilistic output of how likely it is to get into a university given their details.

Abstract:

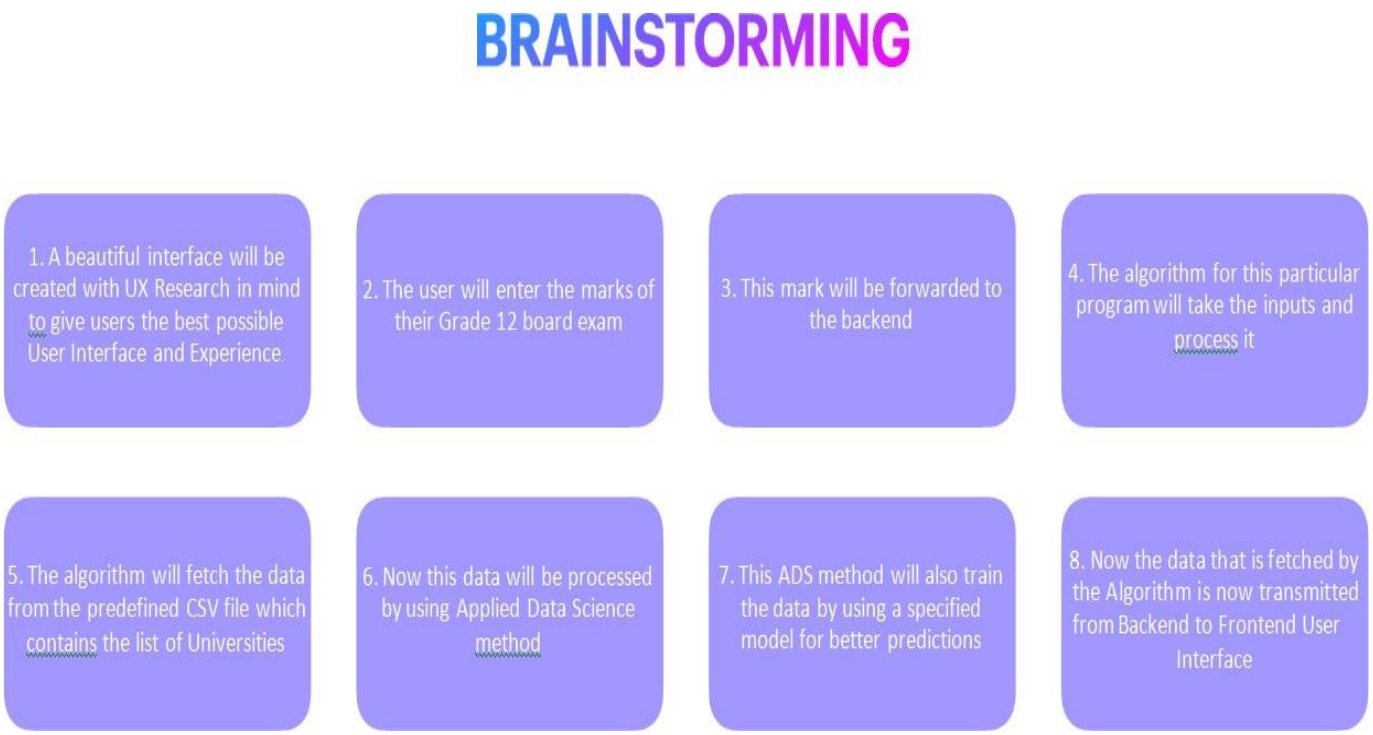
- Students are often worried about their chances of admission to University.
- The aim of this project is to help students in shortlisting universities with their profiles.
- The predicted output gives them a fair idea about their admission chances to a particular university.
- This analysis should also help students who are currently preparing or will be preparing to get a better idea.


Users
User Interface
Backend
CSV File
Data Processing
Algorithm
Train Data

3. IDEATION & PROPOSED SOLUTION

Empathy Map Canvas

Ideation & Brainstorming



Proposed Solution

Proposed Solution :

Project team shall fill the following information in proposed solution template.

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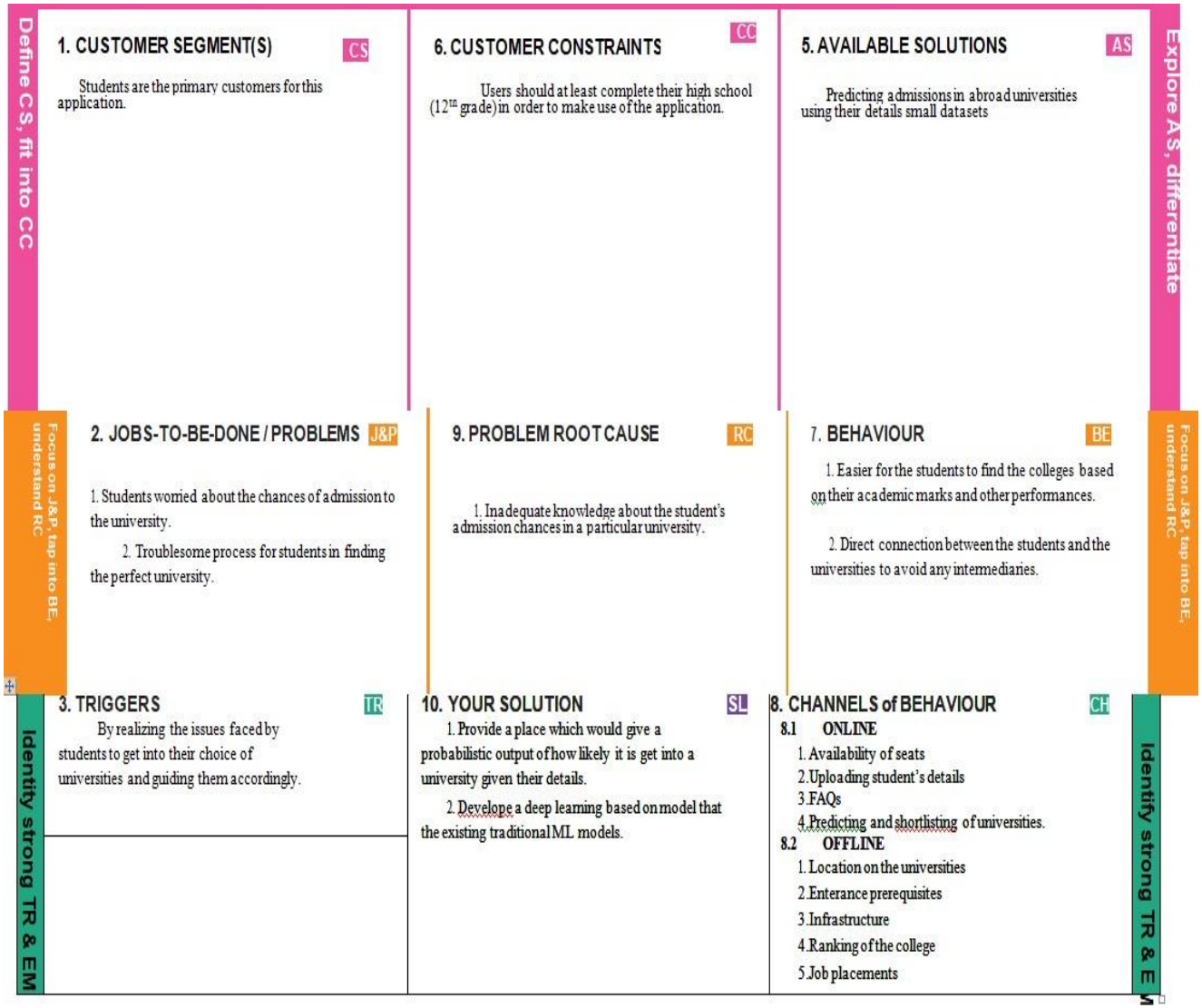
Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Students are often worried about their chances of admission to university. The aim of this project is to help students in shortlisting universities with their profiles. The predicted output gives them a fair idea about their admission chances in a particular university. This analysis should also help students who are currently preparing or will be preparing to get a better idea. It also aims to make a direct connection between the students and the universities and avoid any intermediaries.
2.	Idea / Solution description	This project intends to calculate the probability of acceptance in a particular grad-school after assessing the candidate's profile. The key attributes that will be considered for making the decisions are: i) GRE & TOEFL Scores ii) Undergrad CGPA iii) SOP & LOR iv) Corporate Work Experience / Research Experience v) Extracurriculars For determining the % of acceptance, we will be using various ML models such as Logistic Regression, Multiple Linear Regression, Decision Tree & Random Forest and assess which model gives the highest accuracy with the help of performance metrics like accuracy-score, precision and recall.
3.	Novelty / Uniqueness	● We intend to develop a novel deep learning-based hybrid model that has a better accuracy than the existing traditional ML models.

		● The web-app will also provide feedback on the parameters where the candidate is lacking so that he can improve on those areas.
4.	Social Impact / Customer Satisfaction	● Students often feel difficult in shortlisting the universities to apply which they tend to wonder if their profile matches the requirement of a certain university. ● Moreover, the cost of applying to a university is extremely high making it critical that students shortlist universities based on their profile. ● A university admission prediction system is quite useful for students to determine their chances of acceptance to a specific university. ● This system reduces dependence on educational consultancies, who charge loads of money to analyse a candidate's profile and determine the universities he/she should apply to.
5.	Business Model (Revenue Model)	● Advertisements of different universities could be placed in the web-app to generate revenue through ads. ● In the future, a separate premium plan could be created where the students can directly interact with the professors and alumni of the university through video calls.

6.	Scalability of the Solution	● A future update could have chat space where candidates, faculties, current students of the university and alumni can interact and candidates can get their doubts resolved instantly. ● To deal with huge volumes of data in the future (Both - applicants and university details), cloud-based storages (IBM cloud, AWS, GCP, AZURE) and NoSQL databases (MongoDB, Redis, etc.) could be used instead of the traditional RDBMS storage. ● Alternatively, distributed big-data processing techniques could be explored if the no. of users using the website increase exponentially during the course of time.

Problem Solution fit



4. REQUIREMENT ANALYSIS

4.1 Functional requirement

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Landing page	There is no registration from the user end. The users can access the website with ease, **without worrying about any security** issues.
FR-2	Entering Marks	The users will enter their respective marks that are required. Based on the live data we get from the user, we provide them the list of Universities they are eligible to attend.
FR-3	List Display	The list of Universities will be displayed based on the marks given.

4.2 Non-Functional requirements

Following are the non-functional requirements of the proposed solution.

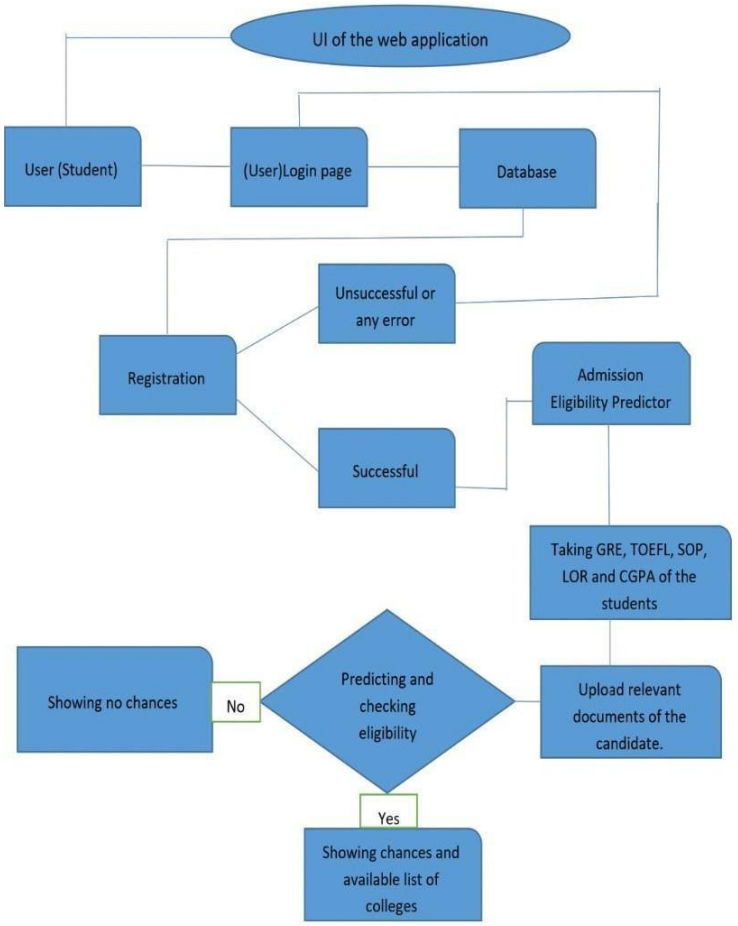
FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	User friendly, with direct instructions and UX principles considered.

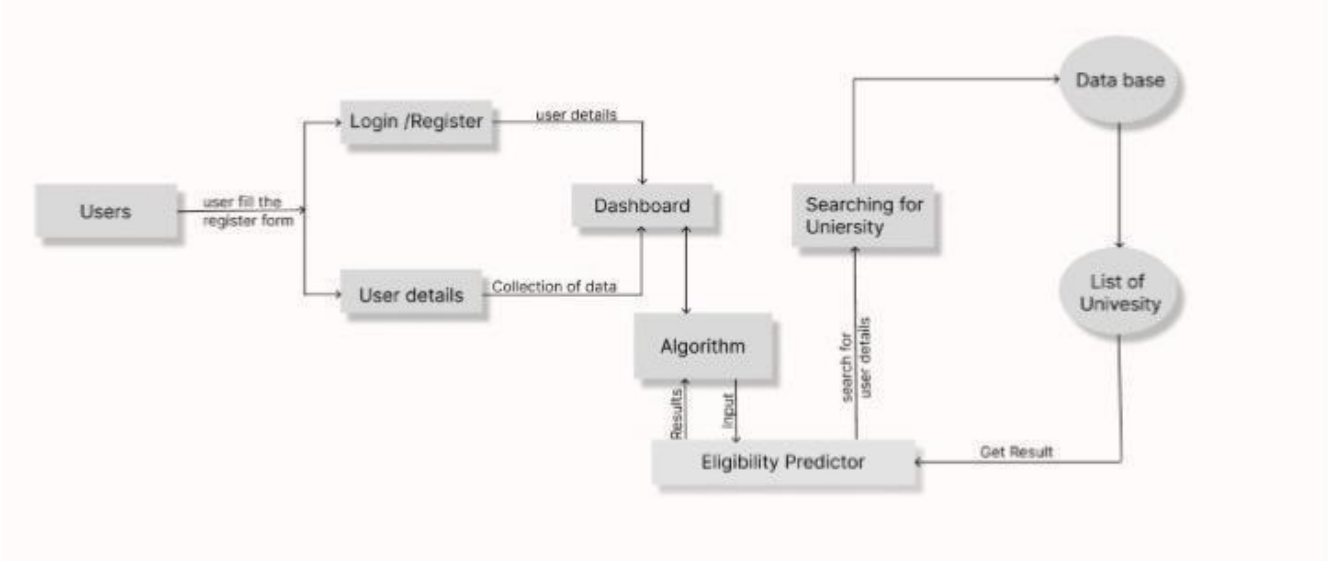
NFR-2	**Security**	As we don't get the personal data from the user, their data is protected and there won't be any leakage. The system gets trained by passing only the data of marks to the cloud.
NFR-3	**Reliability**	The website is reliable in terms of immediate information regarding the university decisions.
NFR-4	**Performance**	It is a light application, with a flask in the backend.
NFR-5	**Availability**	It is free of cost and available to anyone who is looking to find the Universities that fit them and their needs.
NFR-6	**Scalability**	It can be further extended to Higher Education and abroad studies.

5. PROJECT DESIGN

Data Flow Diagrams

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.


UI of the web application
User (Student)
(User)Login page
Database
Unsuccessful or any error
Registration
Admission Eligibility Predictor
Successful
Taking GRE, TOEFL, SOP, LOR and CGPA of the students
Showing no chances
No
Predicting and checking eligibility
Upload relevant documents of the candidate.
Yes
Showing chances and available list of colleges

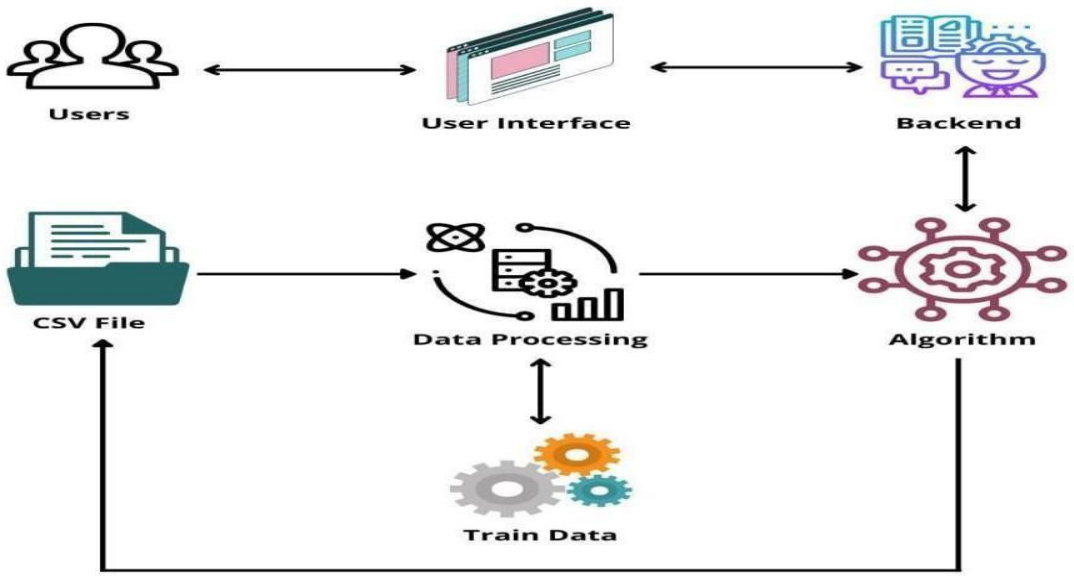

Users
user fill the register form
Login /Register
user details
User details
Collection of data
Dashboard
Algorithm
Results
Input
Searching for Uniersity
search for user details
Data base
List of Univesity
Eligibility Predictor
Get Result

User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer 1 (Web user)	Landing Page	USN-1	It is pretty clear about why we use this website and how it should be used, just by looking at this page.	Understandable	High	Sprint-1
Customer 2 (Web User)	Landing Page	USN-2	The concept of the application is clear with all the how to do instructions and everything.	Very clear	High	Sprint-1
Customer 3 (Web User)	Marks page	USN-3	Its pretty clear what kind of data should be given in.	I can give my marks details.	Low	Sprint-2
Customer 4 (Web User)	Results Page	USN-4	I can see the right and correct results based on the marks given to the system	Got the details	High	Sprint-1

Solution & Technical Architecture

Architecture Diagram:



Solution Architecture :

Students are often worried about their chances of admission to University.

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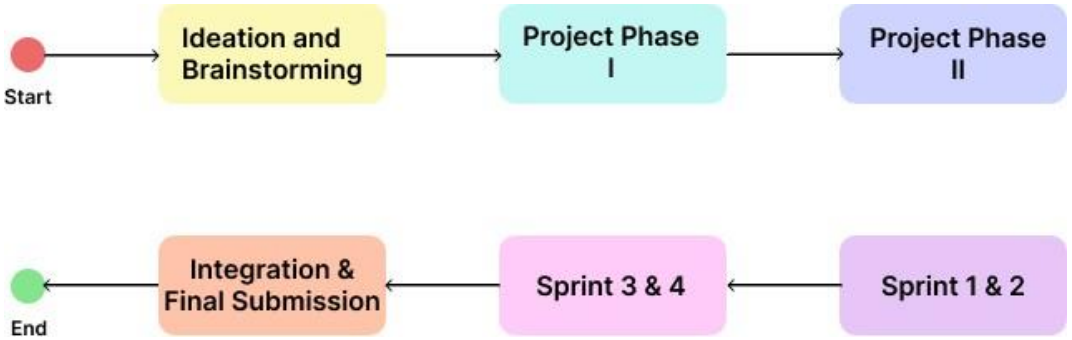
6. PROJECT PLANNING & SCHEDULING

Sprint Planning & Estimation



- The sprints started right after our Training session by IBM.
- Though it started then, we started brainstorming our project since the beginning of this semester's calendar.

- We completed the “Ideation and Brainstorming” phase first, moving on to each other phases one by one.
- Each took a task (exactly what we estimated) to complete.
- First Sprint contains the HTML Code, which acts as a building block for our application.
- Second Sprint is the CSS Code, which enhances the look of the website.
- Third Sprint is the initialization of the flask language and a little bit of backend code. This is where we learned all the important topics needed to complete this project.
- Then the last Sprint, the fourth one, contains only the backend python-flask code, that performs various Data Manipulation and trains the model

Sprint Delivery Schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Frontend - HTML	USN-1	I’m able to see the tables or columns where I can inject my marks into.	2	High	Harish R
Sprint-2	Frontend - CSS	USN-2	Now the application looks more appealing and nice to the eyes.	2	Medium	Jayasurya G
Sprint-3	Flask	USN-3	I can see that my data is being processed.	2	High	Gopala Krishnan R
Sprint-4	Python	USN-4	I can get the results from the inputs I have given to the system.	1	Low	Thirumurugan M

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	03 Nov 2022	20	17.11.22
Sprint-2	20	6 Days	31 Oct 2022	04 Nov 2022	20	17.11.22
Sprint-3	20	6 Days	11 Nov 2022	16 Nov 2022	20	17.11.22
Sprint-4	20	6 Days	11 Nov 2022	16 Nov 2022	20	17.11.22

7. CODING & SOLUTIONING

Feature 1

HTML CODE:

```
<!DOCTYPE html>
```

```
<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <meta http-equiv="X-UA-Compatible" content="ie=edge">

    <title>Login</title>

    <link rel="stylesheet" href="login-style.css">

    <link
href="https://fonts.googleapis.com/css?family=Raleway:700,500,1000&display=sw
ap" rel="stylesheet">

<script type="text/javascript"
src="http://ajax.googleapis.com/ajax/libs/jquery/1.6.2/jquery.min.js">
</script>



<script>



    $(function() {




   var people = [];



   $.getJSON('
https://api.thingspeak.com/channels/1013258/feeds.json?results=1',
function(data) {

       $.each(data.feeds, function(i, f) {

          var tblRow = "<tr>" + "<td>" + f.created_at + "</td>" +"<td>" +
f.entry_id + "</td>" + "<td>" + f.field8 + "</td>"+"</tr>"



           $(tblRow).appendTo("#userdata tbody");

     });
```

```
   });


});

</script>


</head>

<body>

    <main>

        <div class="background">

            <div class="text">

                <center style="color:blue">

<h1>PREDICTING COLLEGES</h1>


</center><br>

<center>

<form action="https://api.thingspeak.com/update?api_key=QNRWO798ZZV2OEIL&"
method="post" target="_blank">

GRE Score         :<input type="text" name="field1"><br><br>


TOEFL Score       :<input type="text" name="field2"><br><br>


University Rating :<input type="text" name="field3"><br><br>


SOP               :<input type="text" name="field4"><br><br>


LOR               :<input type="text" name="field5"><br><br>
```

```
CGPA              :<input type="text" name="field6"><br><br>

Research          :<input type="text" name="field7"><br><br>

<button type="submit">SUBMIT</button>
</form>
<br>
<br>
<br>
<br>
<br>
<br>
<br>
<br>
<br>

<table id= "userdata" border="2">
  <thead>
            <th>Date</th>
            <th>S.no</th>
            <th>COLLAGES</th>

             </thead>
      <tbody>
       </tbody>
   </table>
```

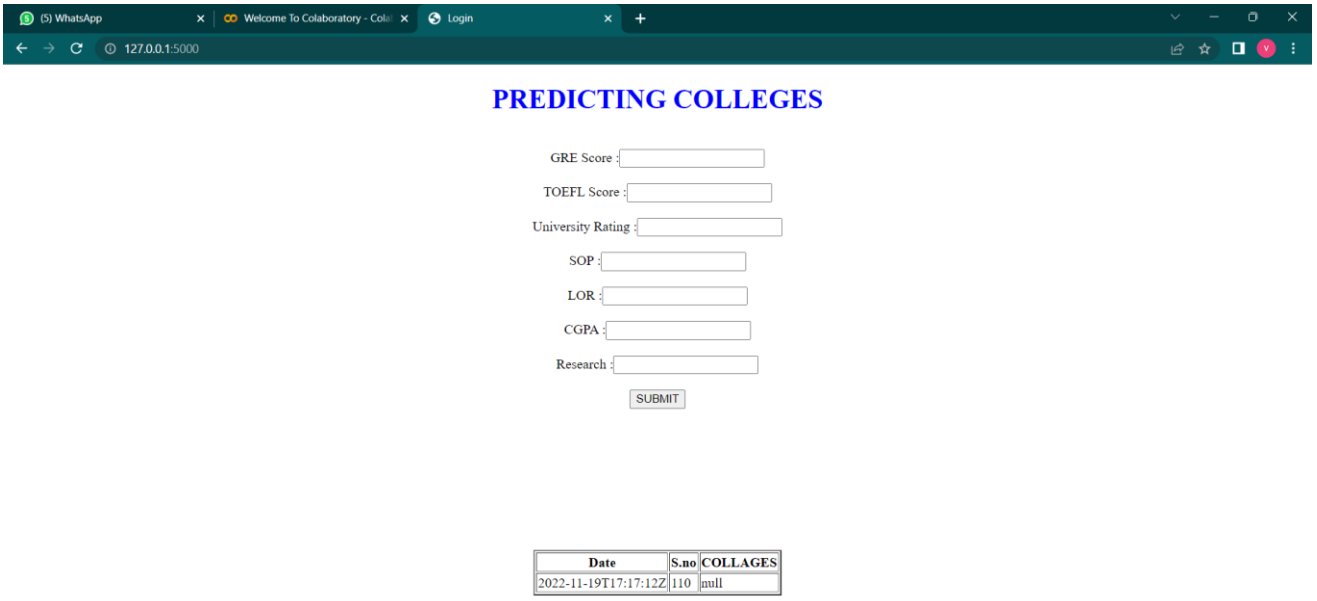
```
<iframe id='track' frameborder="0" scrolling="no" width="1" height="1">

</script>



</center>

            </div>

        </div>

    </main>

</body>

</html>
```

CSS CODE:

```
*{
    margin: 0;
    padding: 0;
    box-sizing: border-box;
    text-decoration: none;
}

body{
    font-family: 'Raleway', sans-serif;
    background: #000;
}

.background{
    background: url(background.jpeg) no-repeat;
 background-position: center top;

    background-size: contain;
height:2200px;
position:relative
    display: flex;
}

.text, .box{
    margin-top:0vh;
    flex: 1;
}

.text{
    margin-left: 0%;
    font-weight: 200px;
color:white;
```

```
}

.box{
    margin-right: 25%;
}

.text h1{
    font-size: 70px;
    color: #fff;
    font-weight: 500;
}

.text h2{
    font-size: 70px;
    color: #fff;
    font-weight: 500;
}


.text p{
    font-size: 20px;
    color: #fff;
    font-weight: 300;
}

.text p a{
    color: #fff;
    font-weight: 700;
}

.form{
    background: transparent;
    color: #fff;
    box-sizing: border-box;
    display: flex;
    flex-direction: column;
    width: 250px;
}

input{
    margin: 20px 0;
    padding: 10px;
    background: transparent;
    border: none;
    outline: none;
    color: #fff;
    font-family: 'Raleway', sans-serif;
}

.username, .password{
    border-bottom: 1px solid #fff;
```

```
}

.button{
    background: transparent;
    border: 1px solid #fff;
    color: #fff;
    font-size: 18px;
}

.button:hover{
    background: #000;
    color: #fff;
}
```



Feature 2

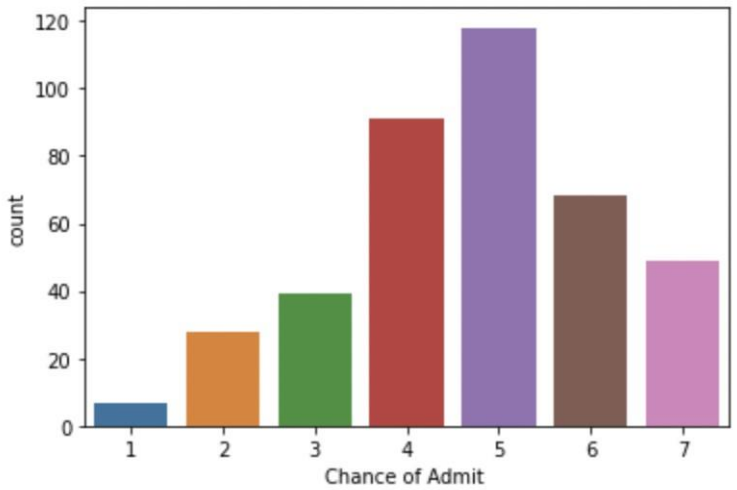
college.ipynb

```
import numpy as np

import pandas as pd

from sklearn import metrics

from sklearn.model_selection import train_test_split

import matplotlib.pyplot as plt
```

```
import seaborn as sns

import pickle

data = pd.read_csv('data.csv')

data.head()

data.shape

X = data.iloc[:,:-1]

X.head()

y = data.iloc[:,-1]

y.head()

print(X)

print(y)

data['Chance of Admit '].value_counts()

X_train,X_test,y_train,y_test = train_test_split(X,y,test_size=0.3,random_state=1)

sns.countplot(x='Chance of Admit ',data=data)

plt.show()

X_train.shape

X_train.head()

y_test.shape

y_test.head()

from sklearn.metrics import accuracy_score

max_accuracy = 0


from sklearn.neighbors import KNeighborsClassifier



for x in range(1,100):

    model = KNeighborsClassifier(n_neighbors=x)

    model.fit(X_train,y_train)
```

```
    y_pred = model.predict(X_test)
    current_accuracy = round(accuracy_score(y_pred,y_test)*100,2)
    if(current_accuracy>max_accuracy):
        max_accuracy = current_accuracy
        best_x = x

#print(max_accuracy)
print(best_x)

model = KNeighborsClassifier(n_neighbors=best_x)
model.fit(X_train,y_train)
y_pred = model.predict(X_test)
filename = 'knn.sav'
pickle.dump(model, open(filename, 'wb'))
acc=(metrics.accuracy_score(y_pred,y_test)*100)
print("Accuracy is:",acc)
cm1 = metrics.confusion_matrix(y_pred,y_test)

total1=sum(sum(cm1))


sensitivity1 = cm1[0,0]/(cm1[0,0]+cm1[0,1])
print('Sensitivity : ', sensitivity1 )

specificity1 = cm1[1,1]/(cm1[1,0]+cm1[1,1])
print('Specificity : ', specificity1)
```

```
     GRE Score  TOEFL Score  University Rating  SOP  LOR   CGPA  Research
0          337          118                  4  4.5   4.5  9.65         1
1          324          107                  4  4.0   4.5  8.87         1
2          316          104                  3  3.0   3.5  8.00         1
3          322          110                  3  3.5   2.5  8.67         1
4          314          103                  2  2.0   3.0  8.21         0
..         ...          ...                ...  ...   ...   ...       ...
395        324          110                  3  3.5   3.5  9.04         1
396        325          107                  3  3.0   3.5  9.11         1
397        330          116                  4  5.0   4.5  9.45         1
398        312          103                  3  3.5   4.0  8.78         0
399        333          117                  4  5.0   4.0  9.66         1

[400 rows x 7 columns]
0      7
1      5
2      5
3      5
4      4
      ..
395    6
396    6
397    7
398    4
399    7
Name: Chance of Admit , Length: 400, dtype: int64
```




```
14
Accuracy is: 53.333333333333336
Sensitivity :  nan
Specificity :  1.0
```

```
import   pickle
import urllib.request
import json
from time import sleep
while True:
  conn =
urllib.request.urlopen("https://api.thingspeak.com/channels/1013258/feeds.json?resu
lts=1")
  response = conn.read()
  print ("http status code=%s" % (conn.getcode()))
```

```
  data=json.loads(response)
  x=int(data['feeds'][0]['entry_id'])
  y=x
  conn.close()
  while x==y:
    conn =
urllib.request.urlopen("https://api.thingspeak.com/channels/1013258/feeds.json?resu
lts=1")
    response = conn.read()
    #print ("http status code=%s" % (conn.getcode()))
    data=json.loads(response)
    y=int(data['feeds'][0]['entry_id'])
    conn.close()

  conn =
urllib.request.urlopen("https://api.thingspeak.com/channels/1013258/feeds.json?resu
lts=1")
  response = conn.read()
  print ("http status code=%s" % (conn.getcode()))
  data=json.loads(response)
  a=float(data['feeds'][0]['field1'])
  b=float(data['feeds'][0]['field2'])
  c=float(data['feeds'][0]['field3'])
  d=float(data['feeds'][0]['field4'])
  e=float(data['feeds'][0]['field5'])
  f=float(data['feeds'][0]['field6'])
  g=float(data['feeds'][0]['field7'])

  conn.close()
  filename = 'knn.sav'
  loaded_model = pickle.load(open(filename, 'rb'))
  person_reports = [[a,b,c,d,e,f,g]]
  predicted = loaded_model.predict(person_reports)
  print("ANALYSING.....")
  print(predicted[0])
  sleep(15)
  if predicted[0]==1:
      conn =
urllib.request.urlopen("https://api.thingspeak.com/update?api_key=QNRWO798ZZV2OEIL&
field8=1-VIT
2-JPR
3-AGNI")
  elif predicted[0]==2:
      conn =
urllib.request.urlopen("https://api.thingspeak.com/update?api_key=QNRWO798ZZV2OEIL&
field8=1-SREC
2-KEC
3-KPR")
  elif predicted[0]==3:
      conn =
urllib.request.urlopen("https://api.thingspeak.com/update?api_key=QNRWO798ZZV2OEIL&
field8=1-KONGU
2-KCT
3-HIT")
```

```
  elif predicted[0]==4:
      conn =
urllib.request.urlopen("https://api.thingspeak.com/update?api_key=QNRWO798ZZV2OEIL&
field8=1-SASTHRA
2-SKCET
3-BIT")
  elif predicted[0]==5:
      conn =
urllib.request.urlopen("https://api.thingspeak.com/update?api_key=QNRWO798ZZV2OEIL&
field8=1-SRM
2-THIAGARAJAR
3-NIIT")
  elif predicted[0]==6:
      conn =
urllib.request.urlopen("https://api.thingspeak.com/update?api_key=QNRWO798ZZV2OEIL&
field8=1-PSG
2-CIT
3-GCT")
  elif predicted[0]==7:
      conn =
urllib.request.urlopen("https://api.thingspeak.com/update?api_key=QNRWO798ZZV2OEIL&
field8=1-IIT
2-MIT
3-ANNA_UNIVERSITY-CHE")
```

```
http status code=200
http status code=200
ANALYSING....
5
```

Integration:

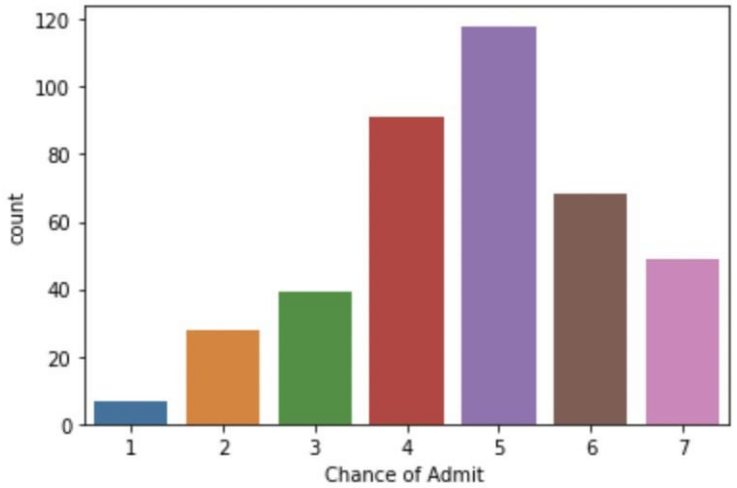
```
from flask import Flask, render_template
app = Flask(__name__)
import os
import subprocess
@app.route(r'/')
def index():
  return render_template('login.html')
```

```
if__name__== '__main__':
  app.run(debug=True)
```

8. TESTING

Test Cases

```
     GRE Score  TOEFL Score  University Rating  SOP  LOR   CGPA  Research
0          337          118                  4  4.5   4.5  9.65         1
1          324          107                  4  4.0   4.5  8.87         1
2          316          104                  3  3.0   3.5  8.00         1
3          322          110                  3  3.5   2.5  8.67         1
4          314          103                  2  2.0   3.0  8.21         0
..         ...          ...                ...  ...   ...   ...       ...
395        324          110                  3  3.5   3.5  9.04         1
396        325          107                  3  3.0   3.5  9.11         1
397        330          116                  4  5.0   4.5  9.45         1
398        312          103                  3  3.5   4.0  8.78         0
399        333          117                  4  5.0   4.0  9.66         1

[400 rows x 7 columns]
0      7
1      5
2      5
3      5
4      4
      ..
395    6
396    6
397    7
398    4
399    7
Name: Chance of Admit , Length: 400, dtype: int64
```

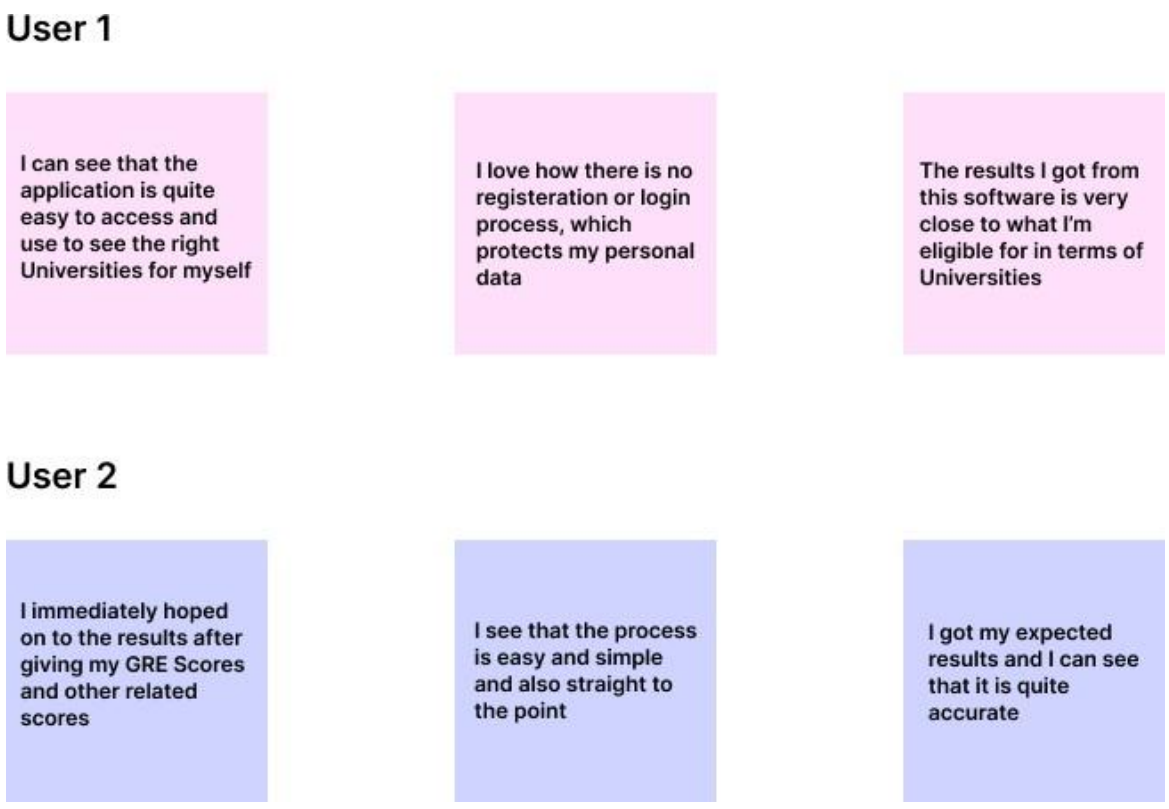



```
14
Accuracy is: 53.333333333333336
Sensitivity :  nan
Specificity :  1.0
```

```
http status code=200
http status code=200
ANALYSING....
5
```

- All the test cases got passed and the expected output is received as the result.

User Acceptance Testing



9. RESULTS

Performance Metrics

The data is trained and tested with all three algorithms and out of all KNN gave more accuracy with 90.3 percent and then the KNN with 88.33 percent accuracy. As KNN gave the highest accuracy, all further data predictions are chosen to be followed with KNN. So, finally a web application is made to give the input parameters of the student and the final

prediction is generated and displayed. The background algorithm being used is KNN and the new prediction are keep on adding to the dataset for further more accuracy.

11. CONCLUSION

It has been concluded that the software system that we built is successfully executing our aim. The students that are willing to get into a great college, use this website to get more awareness. All this features given to the users at ease, without collecting any of their personal data expect the marks, which we use to train the system, to produce more better and accurate result as we go.

12. FUTURE SCOPE

A powerful web application can be developed where inputs are not given directly instead student parameters are taken by evaluating students through various evaluations and examinations. Technical, analytical, logical, memory based, psychometry and general awareness, interests and skill based tests can be designed and parameters are collected through them so that results will be certainly accurate and the system will be more reliable to use.

Also KNNs have few limitations like overfitting, no pruning, lack of capability to deal with null and missing values and few algorithms have problem with huge number of values. All these can be taken into consideration and even more reliable and more accurate algorithms can be used. Then the project will be more powerful to depend upon and even more efficient to depend upon.

13. APPENDIX

Source Code:

Login.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <meta name="viewport" content="width=device-width, initial-scale=1, maximum-scale=1,
user-scalable=no">
    <link rel="stylesheet" type="text/css" rel="noopener" target="_blank"
href="../static/css/styles.css">
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
Zenh87qX5JnK2Jl0vWa8Ck2rdkQ2Bzep5IDxbcnCeuOxjzrPF/et3URy9Bv1WTRi"
crossorigin="anonymous">
    <title>University Admit Eligibility Predictor</title>
</head>
<body>
    <nav class="navbar navbar-expand-lg bg-light">
        <div class="container-fluid">
```

```
            <a class="navbar-brand text-responsive-h" href="/">
                <img src="..\static\img\hat.png" alt="Logo" width="30" height="24"
class="d-inline-block align-text-top ">
                University Admission Eligibility Prediction System
            </a>
        </div>
    </nav>
    {% block body %}
    <h1> Index Page </h1>
    {% endblock %}
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/js/bootstrap.bundle.min.js"
integrity="sha384-OERcA2EqjJCMA+/3y+gxIOqMEjwtxJY7qPCqsdltbNJuaOe923+mo//f6V8Qbsw3"
crossorigin="anonymous"></script>
</body>
</html>
```

DEMO.html:

```
html code
{% extends 'index.html' %}
{% block body %}
    <div class="p-4">
        <div class="row mb-3">
            <div class="col-4">
                <h2 class="text-responsive-h">
                    Enter your details and get probability of your admission
                </h2>
                <p class="text-responsive">
                    Students are often worried about their chances of
admission to University. The aim of this project is to help students in
shortlisting universities with their profiles. The predicted output gives them
a fair idea about their admission chances in a particular university. This
analysis should also help students who are currently preparing or will be
preparing to get a better idea.
                </p>
                <div class="d-flex justify-content-right">
                    <img src="../static/img/animated-teach.gif" border="0"
alt="..." />
                </div>
                </div>
            <div class="col-8">
                <div class="card p-2 ms-2 my-2">
                    <div class="card-body">
                        <h5 class="card-title pb-4">
                            Enter the details
                        </h5>
                        <form action="/" method="post" id="theForm">
                            <div class="row mb-3">
                                <label for="gre" class="col-lg-2 col-form-
label">GRE Score:</label>
                                <div class="col-lg-10">
                                    <input type="number" class="form-control"
id="gre" name="gre" min="250" max="340" placeholder="250 to 340" required>
                                </div>
                            </div>
```

```
                            <div class="row mb-3">
                                <label for="tofel" class="col-lg-2 col-form-
label">TOFEL Score:</label>
                                <div class="col-lg-10">
                                    <input type="number" class="form-control"
id="tofel" name="tofel" min="50" max="120" placeholder="50 to 120" required>
                                </div>
                            </div>
                            <div class="row mb-3">
                                <label for="university_rating" class="col-lg-2
col-form-label">University Rating:</label>
                                <div class="col-lg-10">
                                    <input type="number" class="form-control"
id="university_rating" step="0.01" name="university_rating" min="1" max="5"
placeholder="1 to 5" required>
                                </div>
                            </div>
                            <div class="row mb-3">
                                <label for="sop" class="col-lg-2 col-form-
label">SOP:</label>
                                <div class="col-lg-10">
                                    <input type="number" class="form-control"
id="sop" name="sop" step="0.01" min="1" max="5" placeholder="1 to 5" required>
                                </div>
                            </div>
                            <div class="row mb-3">
                                <label for="lor" class="col-lg-2 col-form-
label">LOR:</label>
                                <div class="col-lg-10">
                                    <input type="number" class="form-control"
id="lor" name="lor" step="0.01" min="1" max="5" placeholder="1 to 5" required>
                                </div>
                            </div>
                            <div class="row mb-3">
                                <label for="cgpa" class="col-lg-2 col-form-
label">CGPA:</label>
                                <div class="col-lg-10">
                                    <input type="number" class="form-control"
id="cgpa" name="cgpa" step="0.01" min="5" max="10" placeholder="5 to 10"
required>
                                </div>
                            </div>
                            <fieldset class="row mb-3">
                                <legend class="col-form-label col-sm-2 pt-
0">Research:</legend>
                                <div class="col-sm-10">
                                    <div class="form-check">
                                        <input class="form-check-input"
type="radio" name="yes_no_radio" id="gridRadios1" value="1">
                                        <label class="form-check-label"
for="yes_no_radio">
                                        Yes
                                        </label>
                                    </div>
                                    <div class="form-check">
```

```
                                        <input class="form-check-input"
type="radio" name="yes_no_radio" id="gridRadios2" value="0" checked>
                                        <label class="form-check-label"
for="yes_no_radio">
                                        No
                                        </label>
                                    </div>
                                </div>
                            </fieldset>
                            <div class="row lg-3">
                                <div class="col-lg-2 mb-2 me-3">
                                    <button type="submit" class="btn btn-
primary" id="button">Predict</button>
                                </div>
                                <div class="col-lg-2" id="spinner">
                                    <div class="spinner-border text-primary m-
1" role="status">
                                        <span class="visually-
hidden">Loading...</span>
                                    </div>
                                    <div class="spinner-grow text-primary m-1"
role="status">
                                        <span class="visually-
hidden">Loading...</span>
                                    </div>
                                </div>
                        </form>
                    </div>
                </div>
            </div>
        </div>
    </div>
<script type="text/javascript" src="../static/js/script.js" async></script>
{% endblock %}
Footer
```

chance.html:

```
{% extends 'index.html' %}

{% block body %}

<div class="container text-center p-4">
    <div class="d-flex justify-content-center">

        <div class="card" style="width: 34rem;">
            <img src="..\static\img\chance.png" class="card-img-top"
alt="...">
            <div class="card-body">
                <h5 class="card-title">You Have Chance</h5>
                <p class="card-text">The model has predicted that you have
<strong>{{content[0]}}%</strong> chance</p>
                <a href="/home" class="btn btn-primary">Go Back</a>
            </div>
```

```
        </div>
    </div>
</div>

{% endblock %}
Footer
```

No chance.html

```
{% extends 'index.html' %}
{% block body %}

<div class="container text-center p-4">
    <div class="d-flex justify-content-center">
        <div class="card" style="width: 34rem;">
            <img src="..\static\img\noChance.jpg" class="card-img-top"
alt="...">
            <div class="card-body">
                <h5 class="card-title">You have a LOW / NO chance</h5>
                <p class="card-text">The model has predicted that you only
have <strong>{{content[0]}}%</strong> chance</p>
                <a href="/home" class="btn btn-primary">Go Back</a>
            </div>
        </div>
    </div>
</div>

{% endblock %}
```

style.css:

```
* {
    margin: 0;
    padding: 0;
    border: 0;
}
body {
    font: 62.5%/1.5  "Lucida Grande", "Lucida Sans", Tahoma, Verdana, sans-serif;
    background: #e0eafc;
    background: -webkit-linear-gradient(to right, #e0eafc, #cfdef3);
    background: linear-gradient(to right, #e0eafc, #cfdef3);
    color: #000000;
    text-align:center;
}

h1 {
    font-size: 2.2em;
}

h2 {
    font-size: 2.0em;
}

h4 {
    font-size: 1.6em;
}

p {
```

```
    font-size: 1.2em;
}

input.text
  {
  padding: 3px;
  border: 1px solid #999999;
}

img {
    max-width: auto;
    height: auto;
}

.text-responsive {
    font-size: calc(50% + 0.6vw + 0.6vh);
}

.text-responsive-h {
    font-size: calc(80% + 0.6vw+0.6vh);
```

script.js

```
const

button =

document.g

etElementB

yId('butto

n');

const

theForm =

document.g

etElementB

yId('theFo

rm');

const

loading =

document.g

etElementB

yId('spinn

er');
```

```
const
disableBut
ton = ()
=> {

console.lo
g('Submitt
ing
form...');

button.dis
abled =
true;

button.cla
ssName =
"btn btn-
outline-
primary";

button.inn
erHTML =
"Predictin
g..."

loading.st
yle.displa
y =
"block"
```

```
};

const
enableButt
on = () =>
{

console.lo
g('Loading
window...'
);

button.dis
abled =
false;

button.cla
ssName =
"btn btn-
primary"

button.inn
erHTML =
"Predict"

loading.st
yle.displa
y = "none"
}
```

```
theForm.on

submit =

disableBut

ton;



window.onl

oad=ena

bleButton;
```

app.py

```
from flask import Flask, render_template, redirect, url_for, request
import requests


app = Flask(__name__)

@app.route("/", methods = ['POST', 'GET'])
def index():
    if request.method == 'POST':
        arr = []
        for i in request.form:
            val = request.form[i]
            if val == '':
                return redirect(url_for("demo2"))
            arr.append(float(val))

        # deepcode ignore HardcodedNonCryptoSecret: <please specify a reason of ignoring this>
        API_KEY = "wf8mge_OQdwVO8ao2kmWCtfxOfLWl8442SH44V85v2Ls"
        token_response = requests.post('https://iam.cloud.ibm.com/identity/token', data={
            "apikey": API_KEY,
            "grant_type": 'urn:ibm:params:oauth:grant-type:apikey'
            })
        mltoken = token_response.json()["access_token"]
        header = {'Content-Type': 'application/json', 'Authorization': 'Bearer ' + mltoken}
        payload_scoring = {
            "input_data": [{"fields":[  'GRE Score',
                                        'TOEFL Score',
                                        'University Rating',
                                        'SOP',
                                        'LOR ',
                                        'CGPA',
                                        'Research'],
                            "values": [arr]
                            }]
                        }

        response_scoring = requests.post(
            'https://us-south.ml.cloud.ibm.com/ml/v4/deployments/8308fd4c-24a5-46ab-96fa-
263657ae4ad0/predictions?version=2022-10-18',
            json=payload_scoring,
            headers=header
        ).json()
```

```
        result = response_scoring['predictions'][0]['values']

        if result[0][0] > 0.5:
            return redirect(url_for('chance', percent=result[0][0]*100))
        else:
            return redirect(url_for('no_chance', percent=result[0][0]*100))
    else:
        return redirect(url_for("demo2"))

@app.route("/home")
def demo2():
    return render_template("demo2.html")

@app.route("/chance/<percent>")
def chance(percent):
    return render_template("chance.html", content=[percent])

@app.route("/nochance/<percent>")
def no_chance(percent):
    return render_template("noChance.html", content=[percent])

@app.route('/<path:path>')
def catch_all():
    return redirect(url_for("demo2"))

if __name__ == "__main__":
    app.run()
```

GitHub & Project Demo Link

Github:

https://github.com/IBM-EPBL/IBM-Project-31693-1660204264