IBM NALAIYA THIRAN

Batch No : B1 – 1M3E

Sri Sairam Engineering College

Department of Electronics and communication engineering

University Admit Eligibility Predictor

Project Report Submitted by:

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Faculty Mentor : B.Rajalakshmi

1.INTRODUCTION

1.1 PROJECT OVERVIEW

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.

1.2 PURPOSE

This project Engineering Admission Predictor System is web based application in which students can register with their personal as well as marks details for prediction the admission in colleges and the administrator can allot the seats for the students. Administrator can add the college details and he batch details

2.Literature Survey

2.1 Existing problem: The problem here is the students can’t able to know their chance percentage of getting into the desired college and the difficulty they face here is at what kind of percentage is needed to get into that college.

2.2 References:

- https://ieeexplore.ieee.org/document/9042216

- https://ieeexplore.ieee.org/abstract/document/9397988
- https://ieeexplore.ieee.org/document/8862140
- https://ieeexplore.ieee.org/abstract/document/9249747\

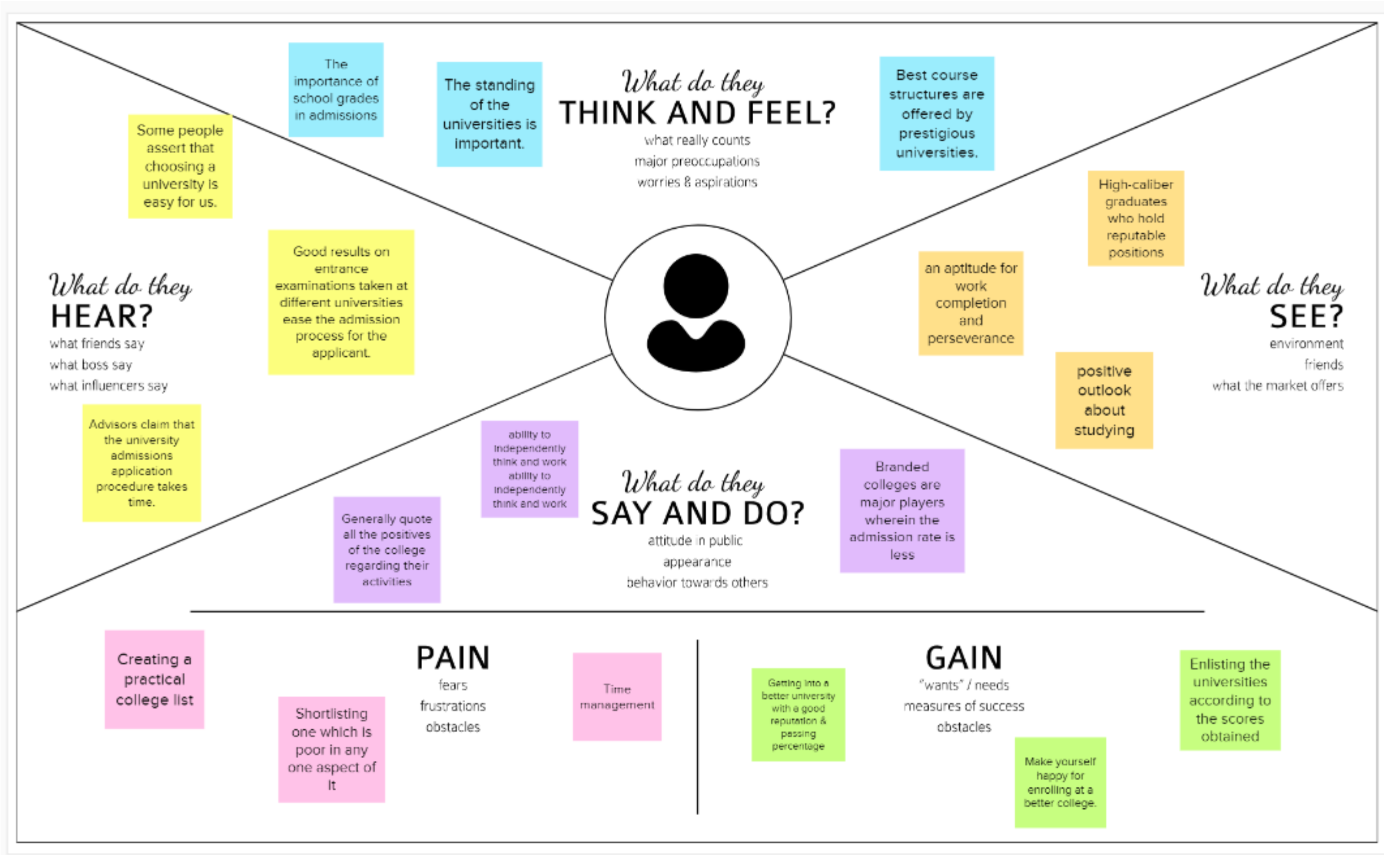
2.3 Problem Statement Definition

Concerns about getting into college are common among students. This project's goal is to assist students in narrowing down institutions based on their profiles. The anticipated results offer them a good indication of their prospects of admission to a particular university. This analysis ought to provide better insight for students who are or will be preparing for exams. The issue here is that the students are unable to determine their likelihood of entering the desired college, and they struggle to understand what kind of percentage is required to enter that institution.

3.IDEATION AND PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS

A concise, easy-to-understand image called an empathy map condenses information about a user's activities and view points . It is a useful tool that enables teams to better understand their users.


What do they
THINK AND FEEL?
what really counts
major preoccupations
worries & aspirations
The importance of school grades in admissions
The standing of the universities is important.
Best course structures are offered by prestigious universities.
What do they
HEAR?
what friends say
what boss say
what influencers say
Some people assert that choosing a university is easy for us.
Good results on entrance examinations taken at different universities ease the admission process for the applicant.
Advisors claim that the university admissions application procedure takes time.
What do they
SEE?
environment
friends
what the market offers
High-caliber graduates who hold reputable positions
an aptitude for work completion and perseverance
positive outlook about studying
What do they
SAY AND DO?
attitude in public
appearance
behavior towards others
ability to independently think and work ability to independently think and work
Generally quote all the positives of the college regarding their activities
Branded colleges are major players wherein the admission rate is less
PAIN
fears
frustrations
obstacles
Creating a practical college list
Shortlisting one which is poor in any one aspect of it
Time management
GAIN
"wants" / needs
measures of success
obstacles
Getting into a better university with a good reputation & passing percentage
Make yourself happy for enrolling at a better college.
Enlisting the universities according to the scores obtained

3.2 Ideation & Brainstorming

Everyone in a team is urged to participate in the process of original thought that yields problem solutions during a brainstorming session. In order to generate a wealth of unique solutions, volume over quality is prioritized , unexpected ideas are embraced and expanded upon, and everyone is urged to participate.

Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

5 minutes

PROBLEM

Students were unaware of admission standards of universities and wasting time and money by seeking help of third parties. This project university admit eligibility predictor is web-based application in which students can register with their personal as well as marks details for prediction the admission in colleges. By this the students making decision for choosing a right college, without having to depend on Educational Consultancies.

Key rules of brainstorming

To run an smooth and productive session

Stay in topic.

Encourage wild ideas.

Defer judgment.

Listen to others.

Go for volume.

If possible, be visual.

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP

You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

JAGANATHAN S

Make direct connections between Students and Universities to avoid intermediaries

Connecting with Alumni or Students who are currently enrolled in the college

Provide references from trustable third party websites for a University

Admission criteria for Person with Disorders(PwD)

KAVIN E

Prevent applicants from creating multiple user profiles to avoid data duplication and inconsistencies

Verify genuineness of the applicant to avoid any false applications.

Apart from eligibility criteria make a comparison between multiple universities in the applicants preference list based on the entire fees for a particular stream/course. This will be help the applicants to save a lot of money in the admission process.

Collect and store all universities admission criteria to access from one place.

SURIYAKUMAR

Government should provide a portal with all university eligibility requirements listed and organised so that students can use them.

Always look for university information and compare it to better understand how to choose a university.

Students who applied to a university but were turned down should be informed, and if the university seat is not filled, they should be given the opportunity.

The top college is determined by many factors than just an institution's rating. It could not be a favourable environment for you, therefore researching the institution would be good.

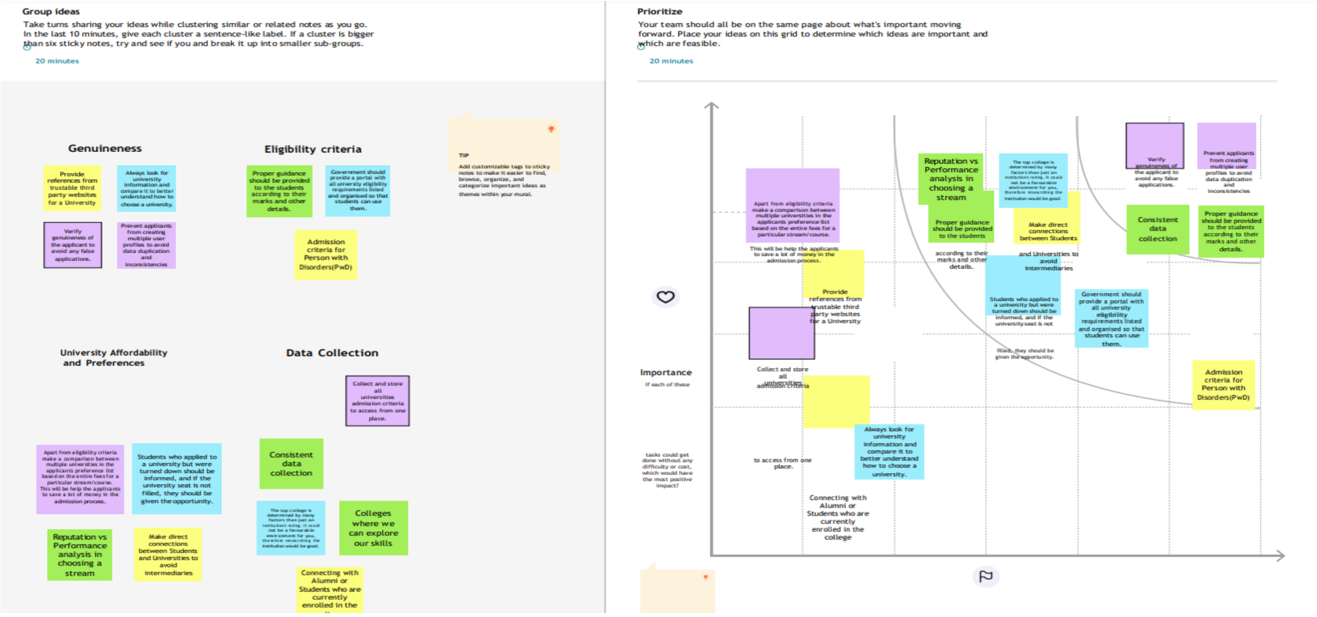
RAKESHKUMAR T

Proper guidance should be provided to the students according to their marks and other details.

Colleges where we can explore our skills

Reputation vs Performance analysis in choosing a stream

Consistent data collection



Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

20 minutes

Genuineness

Provide references from trustable third party websites for a University

Always look for university information and compare it to better understand how to choose a university.

Verify genuineness of the applicant to avoid any false applications.

Prevent applicants from creating multiple user profiles to avoid data duplication and inconsistencies

Eligibility criteria

Proper guidance should be provided to the students according to their marks and other details.

Government should provide a portal with all university eligibility requirements listed and organised so that students can use them.

Admission criteria for Person with Disorders(PwD)

TIP

Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

University Affordability and Preferences

Apart from eligibility criteria make a comparison between multiple universities in the applicants preference list based on the entire fees for a particular stream/course. This will be help the applicants to save a lot of money in the admission process.

Students who applied to a university but were turned down should be informed, and if the university seat is not filled, they should be given the opportunity.

Reputation vs Performance analysis in choosing a stream

Make direct connections between Students and Universities to avoid intermediaries

Data Collection

Collect and store all universities admission criteria to access from one place.

Consistent data collection

The top college is determined by many factors than just an institution's rating. It could not be a favourable environment for you, therefore researching the institution would be good.

Colleges where we can explore our skills

Connecting with Alumni or Students who are currently enrolled in the

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

Importance

If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?

Apart from eligibility criteria make a comparison between multiple universities in the applicants preference list based on the entire fees for a particular stream/course. This will be help the applicants to save a lot of money in the admission process.

Provide references from trustable third party websites for a University

Collect and store all universities admission criteria to access from one place.

Always look for university information and compare it to better understand how to choose a university.

Connecting with Alumni or Students who are currently enrolled in the college

Reputation vs Performance analysis in choosing a stream

Proper guidance should be provided to the students according to their marks and other details.

The top college is determined by many factors than just an institution's rating. It could not be a favourable environment for you, therefore researching the institution would be good.

Make direct connections between Students and Universities to avoid intermediaries

Students who applied to a university but were turned down should be informed, and if the university seat is not filled, they should be given the opportunity.

Government should provide a portal with all university eligibility requirements listed and organised so that students can use them.

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Consistent data collection

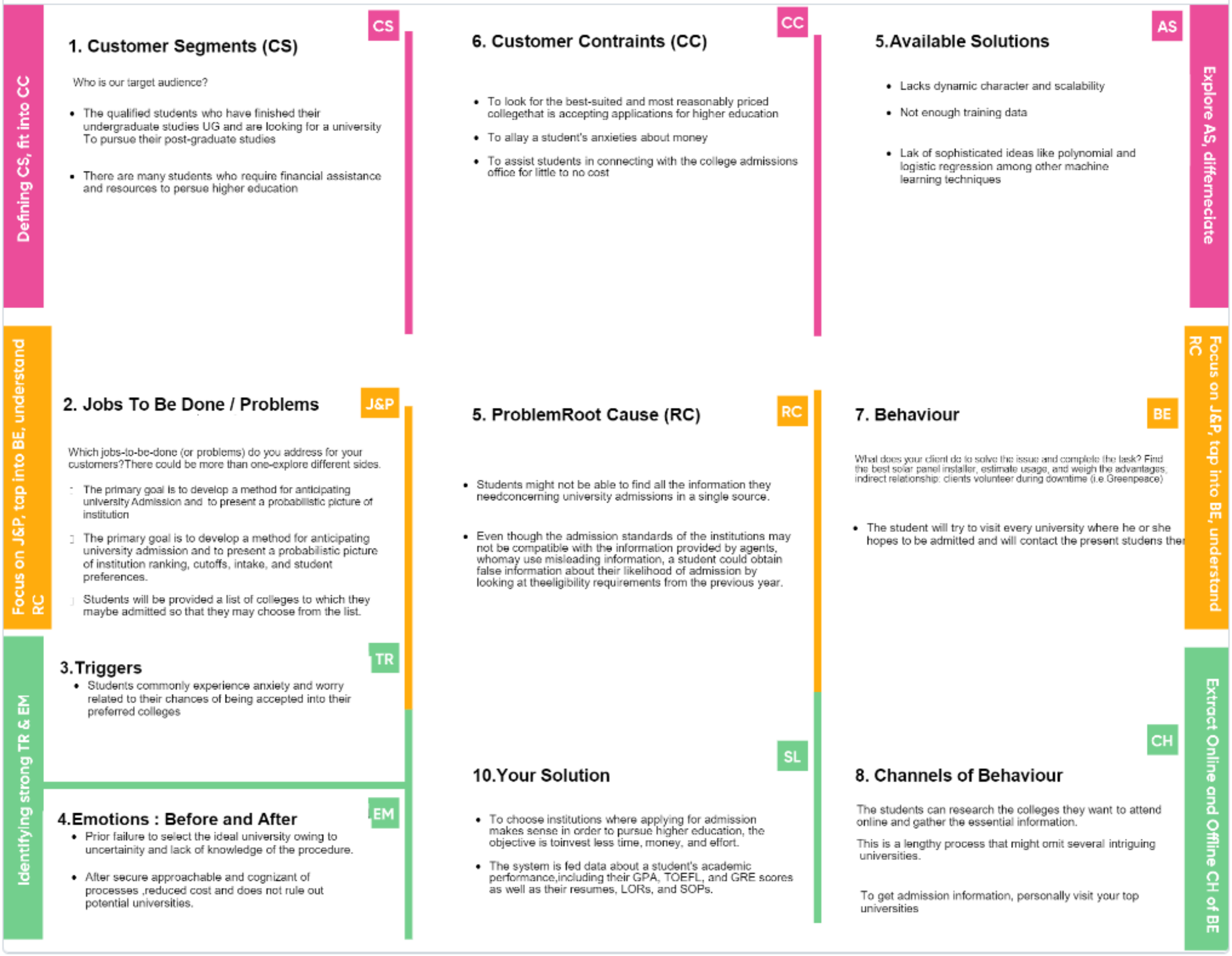
Proper guidance should be provided to the students according to their marks and other details.

Admission criteria for Person with Disorders(PwD)

3.3 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	To check the University eligibility criteria of a student by using their cut-off mark.
2.	Idea / Solution description	In order to immediately benefit from preparing themselves in accordance with the university's requirements, students and parents need a mechanism to analyse and list the universities available for their cut-off mark.
3.	Novelty / Uniqueness	Machine language is used in order to analyse the fastest way to know whether the eligibility criteria is met for the particular college
4.	Social Impact / Customer Satisfaction	The interface is much easier to use so that anyone make use of it easier way to know their eligibility criteria
5.	Business Model (Revenue Model)	This can be deployed so that based on this usability colleges get admission and the institutions and colleges can be charged for this to get added in the list.
6.	Scalability of the Solution	It is most scalable that the seats available in the college and based on the students ranking based on their cut-off marks the seats are allotted based on their rankings

3.4 Problem Solution Fit


Defining CS, fit into CC
CS
CC
AS
Explore AS, differneciate
Focus on J&P, tap into BE, understand RC
J&P
RC
BE
Focus on J&P, tap into BE, understand RC
Identifying strong TR & EM
TR
EM
SL
CH
Extract Online and Offline CH of BE

1. Customer Segments (CS)

Who is our target audience?

- The qualified students who have finished their undergraduate studies UG and are looking for a university To pursue their post-graduate studies
- There are many students who require financial assistance and resources to persue higher education

6. Customer Contraints (CC)

- To look for the best-suited and most reasonably priced collegethat is accepting applications for higher education
- To allay a student's anxieties about money
- To assist students in connecting with the college admissions office for little to no cost

5.Available Solutions

- Lacks dynamic character and scalability
- Not enough training data
- Lak of sophisticated ideas like polynomial and logistic regression among other machine learning techniques

2. Jobs To Be Done / Problems

Which jobs-to-be-done (or problems) do you address for your customers?There could be more than one-explore different sides.

- The primary goal is to develop a method for anticipating university Admission and to present a probabilistic picture of institution
- The primary goal is to develop a method for anticipating university admission and to present a probabilistic picture of institution ranking, cutoffs, intake, and student preferences.
- Students will be provided a list of colleges to which they maybe admitted so that they may choose from the list.

5. ProblemRoot Cause (RC)

- Students might not be able to find all the information they needconcerning university admissions in a single source.
- Even though the admission standards of the institutions may not be compatible with the information provided by agents, whomay use misleading information, a student could obtain false information about their likelihood of admission by looking at theeligibility requirements from the previous year.

7. Behaviour

What does your client do to solve the issue and complete the task? Find the best solar panel installer, estimate usage, and weigh the advantages; indirect relationship: clients volunteer during downtime (i.e Greenpeace)

- The student will try to visit every university where he or she hopes to be admitted and will contact the present studens ther

3.Triggers

- Students commonly experience anxiety and worry related to their chances of being accepted into their preferred colleges

4.Emotions : Before and After

- Prior failure to select the ideal university owing to uncertainity and lack of knowledge of the procedure.
- After secure approachable and cognizant of processes ,reduced cost and does not rule out potential universities.

10.Your Solution

- To choose institutions where applying for admission makes sense in order to pursue higher education, the objective is toinvest less time, money, and effort.
- The system is fed data about a student's academic performance,including their GPA, TOEFL, and GRE scores as well as their resumes, LORs, and SOPs.

8. Channels of Behaviour

The students can research the colleges they want to attend online and gather the essential information.

This is a lengthy process that might omit several intriguing universities.

To get admission information, personally visit your top universities

4. REQUIREMENT ANALYSIS

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)

4.1

FR-1	User Registration	Registration through Form Registration through Gmail
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Data Collection	The data such as GRE score, cut-off marks are collected.
FR-4	Evaluation	The evaluation is done using the student cutoff marks,GRE score.
FR-5	Prediction	Prediction is done based on the users given data by sing using the machine learning algorithm.
FR-6	Output	Based on their cut-off marks the eligibility percentageof the selected college is shown.

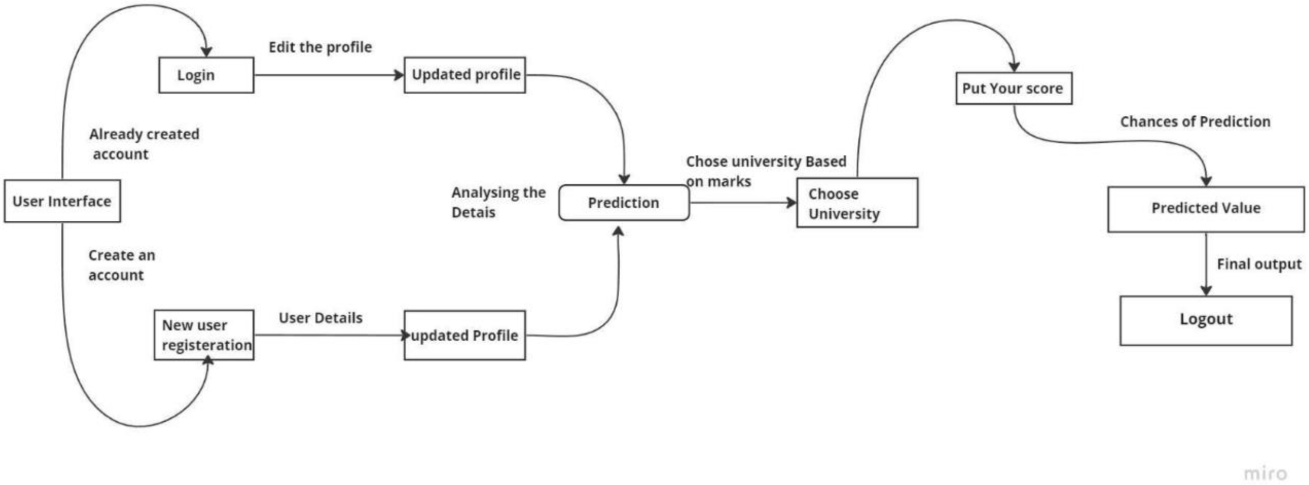
Functional Requirements

4.2 Non Functional Requirements

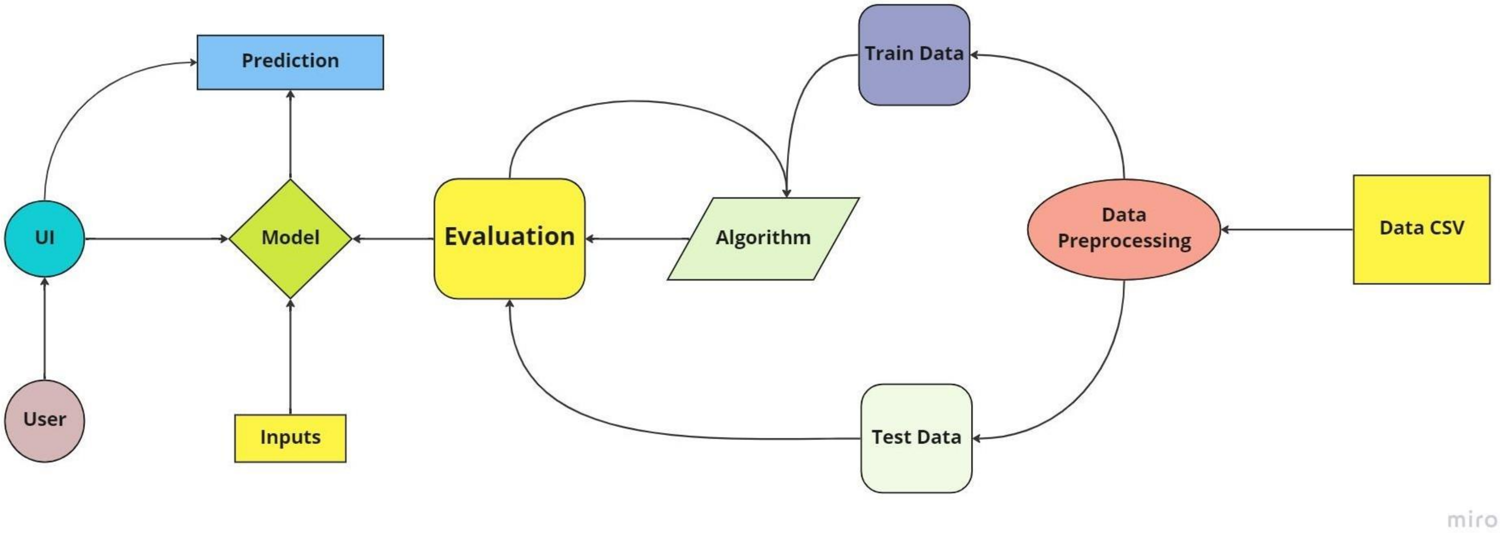
FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Ease of Access UISatisfaction
NFR-2	**Security**	Encryption is used Login used ID and password is required.
NFR-3	**Reliability**	The predictor system will be consistent in order forthe system to produce trustworthy and accurate outcomes.
NFR-4	**Performance**	A logistic regression is used
NFR-5	**Availability**	Since it runs on the cloud it can be accessed anywhere, anytime, anyplace.
NFR-6	**Scalability**	It has the ability to handle any amount of data that is given by the user.

5.PROJECT DESIGN

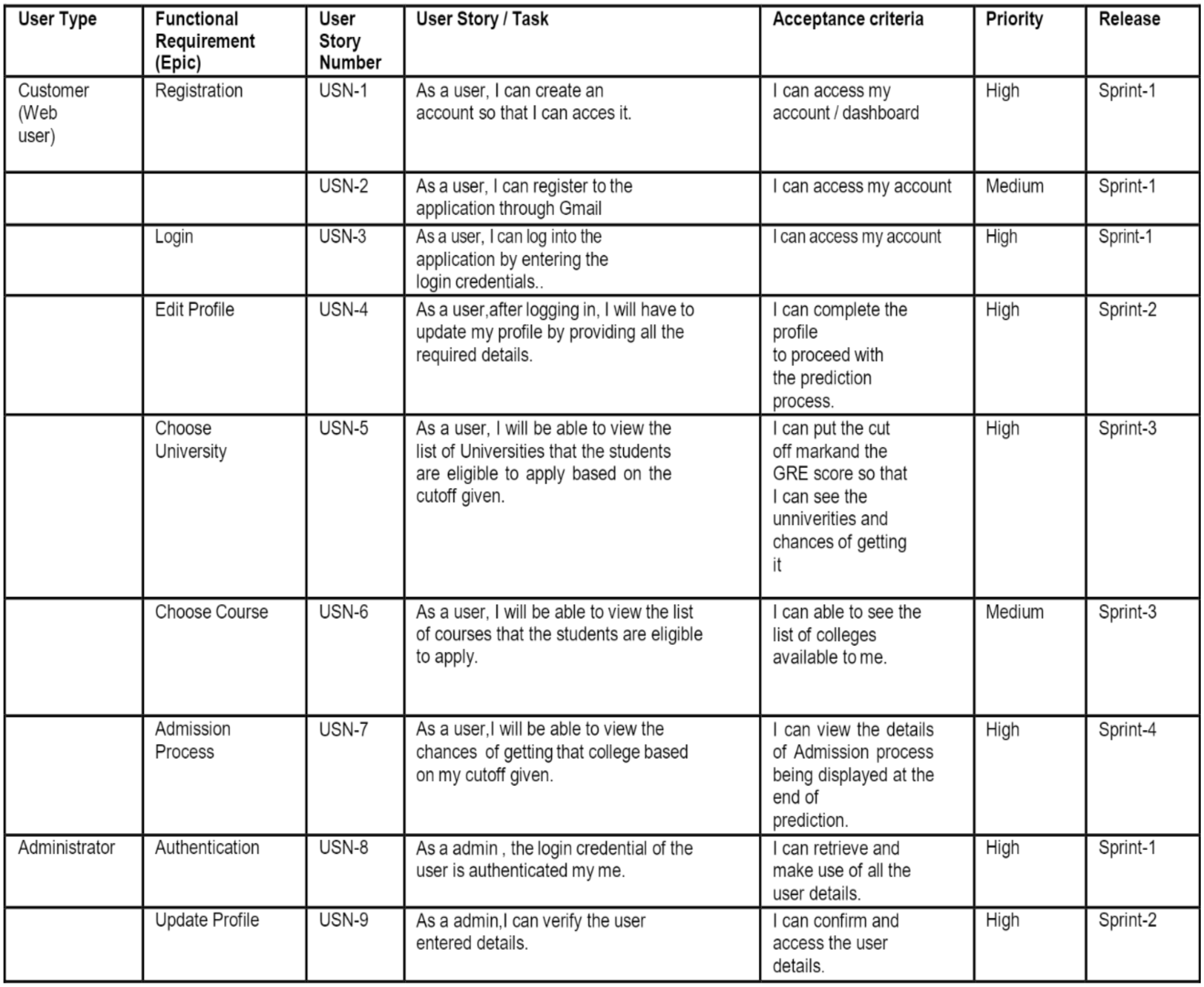
5.1 Data Flow Diagram



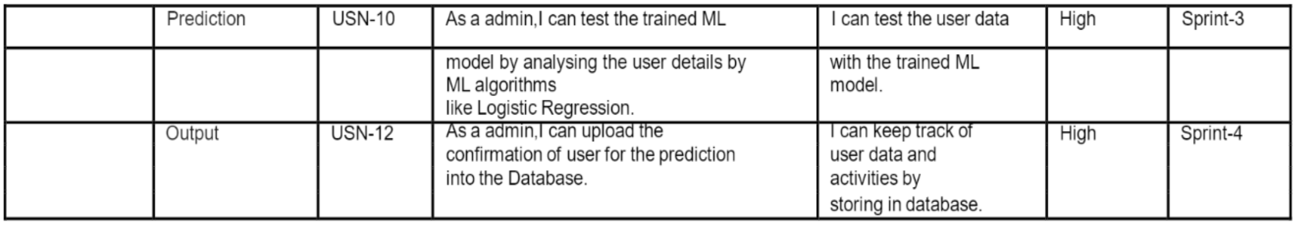
5.2 Solution and Technical Architecture



5.3 User Stories



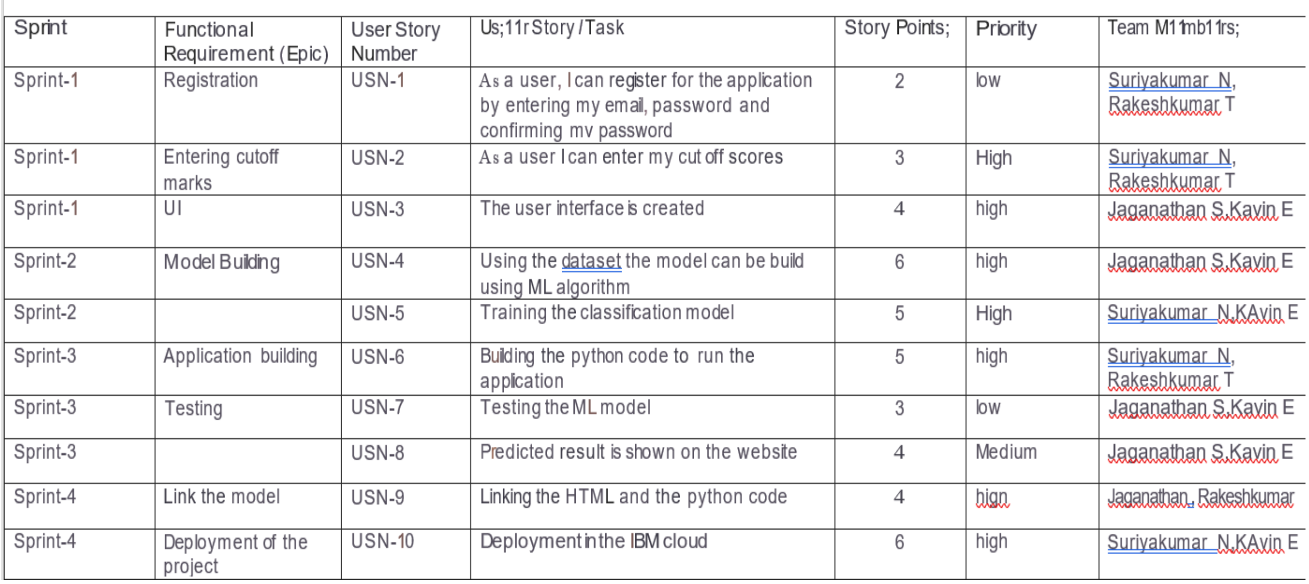
User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Web user)	Registration	USN-1	As a user, I can create an account so that I can acces it.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I can register to the application through Gmail	I can access my account	Medium	Sprint-1
	Login	USN-3	As a user, I can log into the application by entering the login credentials..	I can access my account	High	Sprint-1
	Edit Profile	USN-4	As a user,after logging in, I will have to update my profile by providing all the required details.	I can complete the profile to proceed with the prediction process.	High	Sprint-2
	Choose University	USN-5	As a user, I will be able to view the list of Universities that the students are eligible to apply based on the cutoff given.	I can put the cut off markand the GRE score so that I can see the unniverities and chances of getting it	High	Sprint-3
	Choose Course	USN-6	As a user, I will be able to view the list of courses that the students are eligible to apply.	I can able to see the list of colleges available to me.	Medium	Sprint-3
	Admission Process	USN-7	As a user,I will be able to view the chances of getting that college based on my cutoff given.	I can view the details of Admission process being displayed at the end of prediction.	High	Sprint-4
Administrator	Authentication	USN-8	As a admin , the login credential of the user is authenticated my me.	I can retrieve and make use of all the user details.	High	Sprint-1
	Update Profile	USN-9	As a admin,I can verify the user entered details.	I can confirm and access the user details.	High	Sprint-2



	Prediction	USN-10	As a admin,I can test the trained ML	I can test the user data	High	Sprint-3
			model by analysing the user details by ML algorithms like Logistic Regression.	with the trained ML model.		
	Output	USN-12	As a admin,I can upload the confirmation of user for the prediction into the Database.	I can keep track of user data and activities by storing in database.	High	Sprint-4

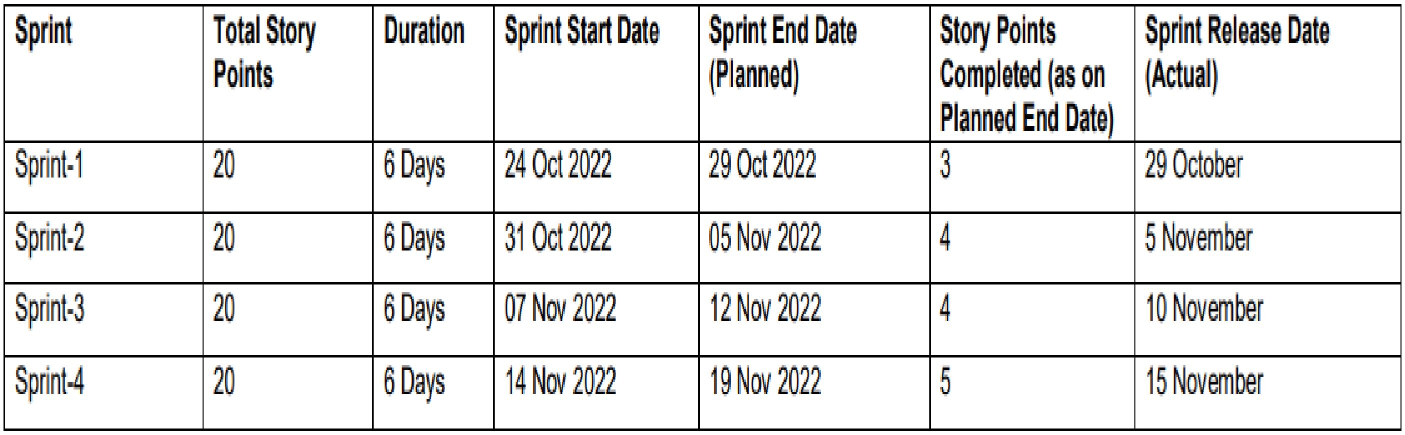
6.PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning and Estimation



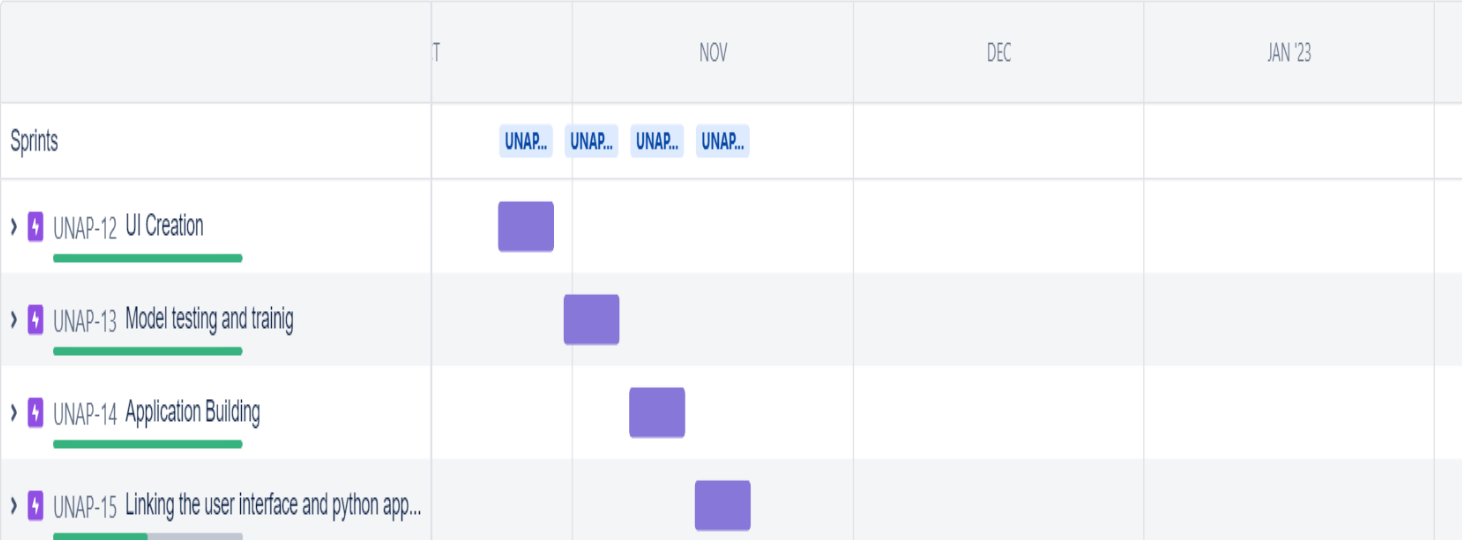
Sprint	Functional Requirement (Epic)	User Story Number	Us;11r Story / Task	Story Points;	Priority	Team M11mb11rs;
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password and confirming mv password	2	low	Suriyakumar N, Rakeshkumar T
Sprint-1	Entering cutoff marks	USN-2	As a user I can enter my cut off scores	3	High	Suriyakumar N, Rakeshkumar T
Sprint-1	UI	USN-3	The user interface is created	4	high	Jaganathan S,Kavin E
Sprint-2	Model Building	USN-4	Using the dataset the model can be build using ML algorithm	6	high	Jaganathan S,Kavin E
Sprint-2		USN-5	Training the classification model	5	High	Suriyakumar N,KAvin E
Sprint-3	Application building	USN-6	Building the python code to run the application	5	high	Suriyakumar N, Rakeshkumar T
Sprint-3	Testing	USN-7	Testing the ML model	3	low	Jaganathan S,Kavin E
Sprint-3		USN-8	Predicted result is shown on the website	4	Medium	Jaganathan S,Kavin E
Sprint-4	Link the model	USN-9	Linking the HTML and the python code	4	hign	Jaganathan, Rakeshkumar
Sprint-4	Deployment of the project	USN-10	Deployment in the IBM cloud	6	high	Suriyakumar N,KAvin E

6.2 Sprint Delivery Schedule



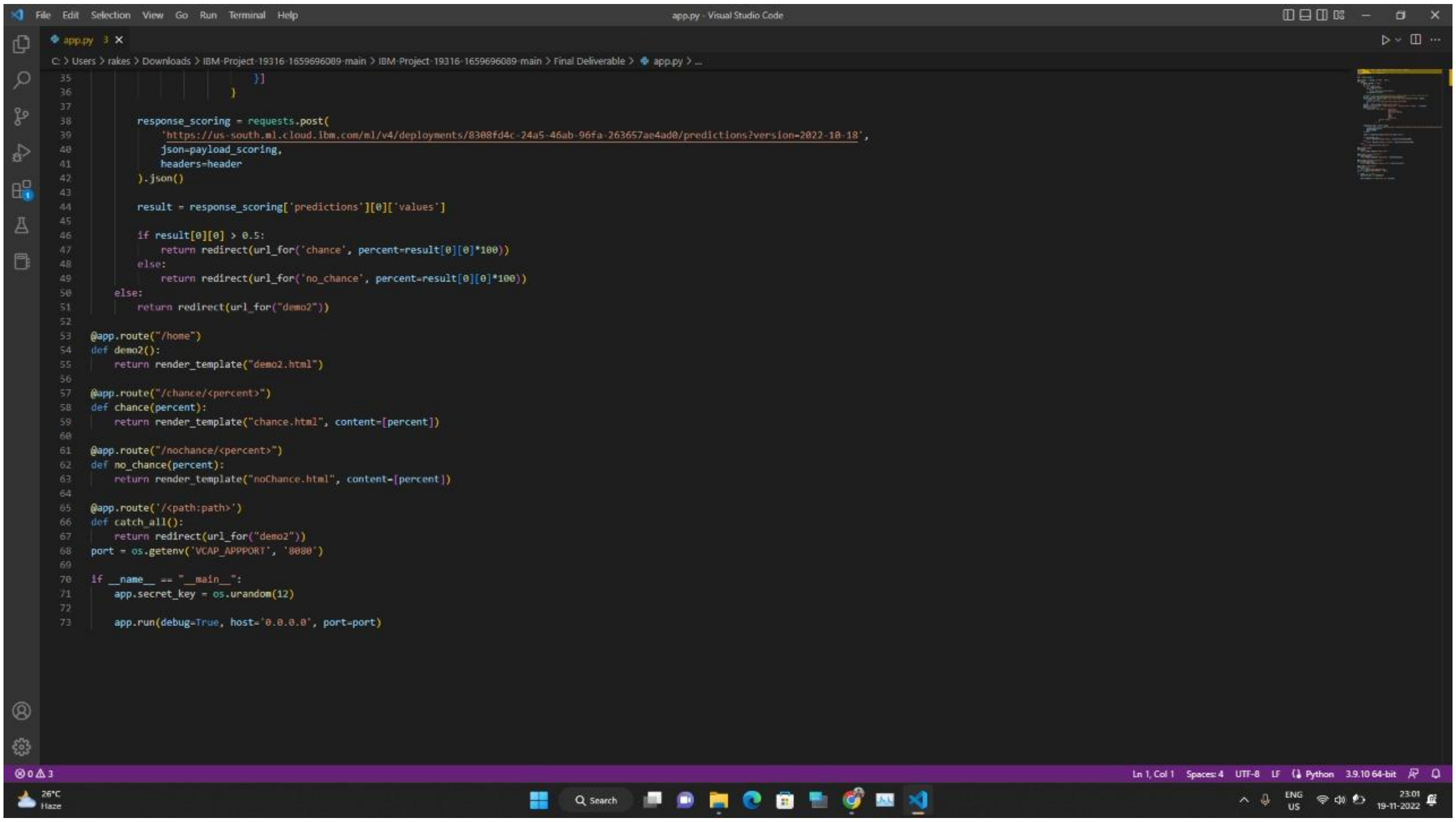
Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	3	29 October
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	4	5 November
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	4	10 November
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	5	15 November

6.3 Reports From Jira

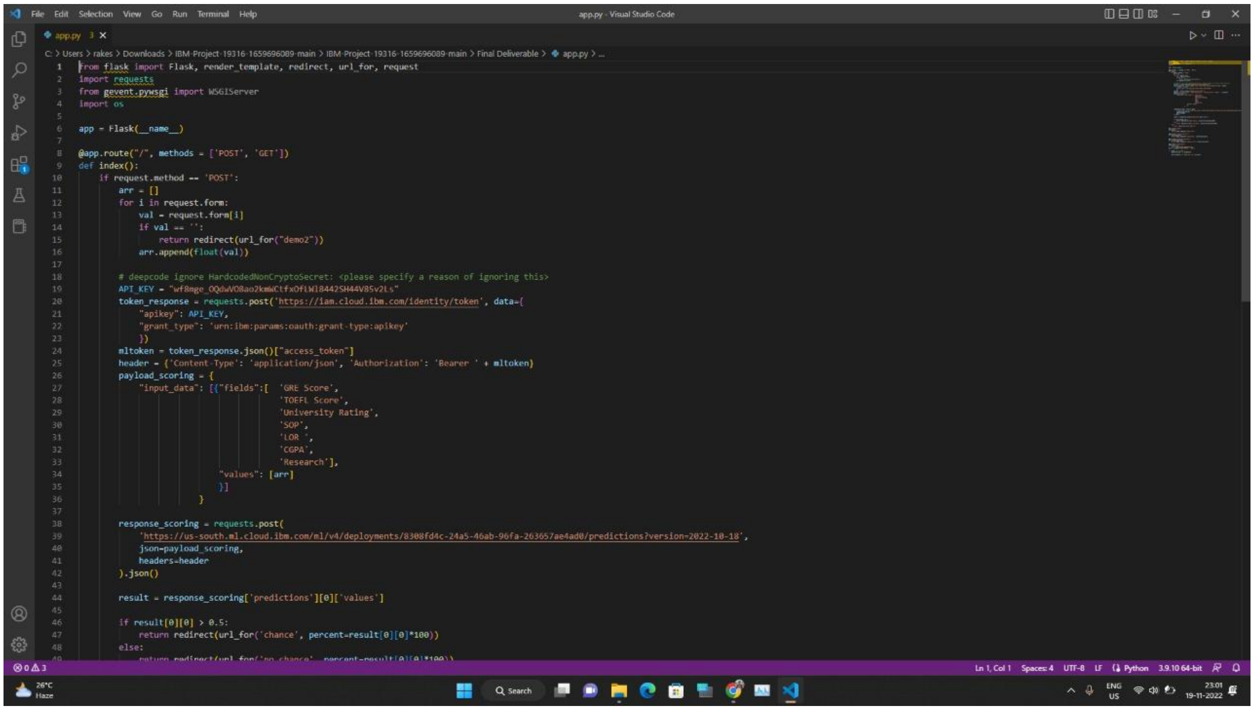


7. Coding and solutioning

7.1 Feature 1


File Edit Selection View Go Run Terminal Help
app.py - Visual Studio Code
app.py 3
C: > Users > rakes > Downloads > IBM-Project-19316-1659696089-main > IBM-Project-19316-1659696089-main > Final Deliverable > app.py > ...
⊗ 0 ⚠ 3
Ln 1, Col 1 Spaces: 4 UTF-8 LF Python 3.9.10 64-bit
26°C Haze
Search
ENG US
23:01 19-11-2022

```
                            }]
                        }

        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"))
port = os.getenv('VCAP_APPPORT', '8080')

if __name__ == "__main__":
    app.secret_key = os.urandom(12)

    app.run(debug=True, host='0.0.0.0', port=port)
```

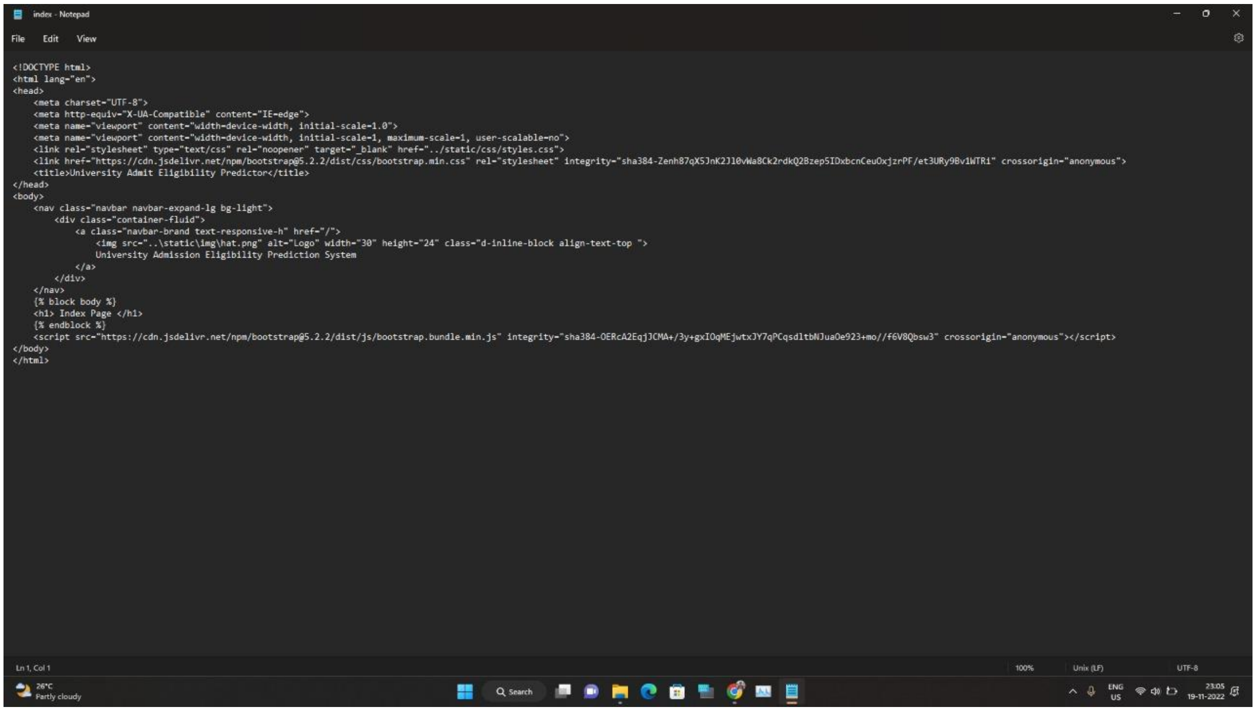


```python
from flask import Flask, render_template, redirect, url_for, request
import requests
from gevent.pywsgi import WSGIServer
import os

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_OQdwVO8ao2kmWCtfxOfLW18442SH44V85v2Ls"
        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))
```

File Edit Selection View Go Run Terminal Help
app.py - Visual Studio Code
app.py 3
C: > Users > rakes > Downloads > IBM-Project-19316-1659696089-main > IBM-Project-19316-1659696089-main > Final Deliverable > app.py > ...
⊗ 0 ⚠ 3
Ln 1, Col 1 Spaces: 4 UTF-8 LF Python 3.9.10 64-bit
26°C Haze
Search
ENG US
23:01 19-11-2022

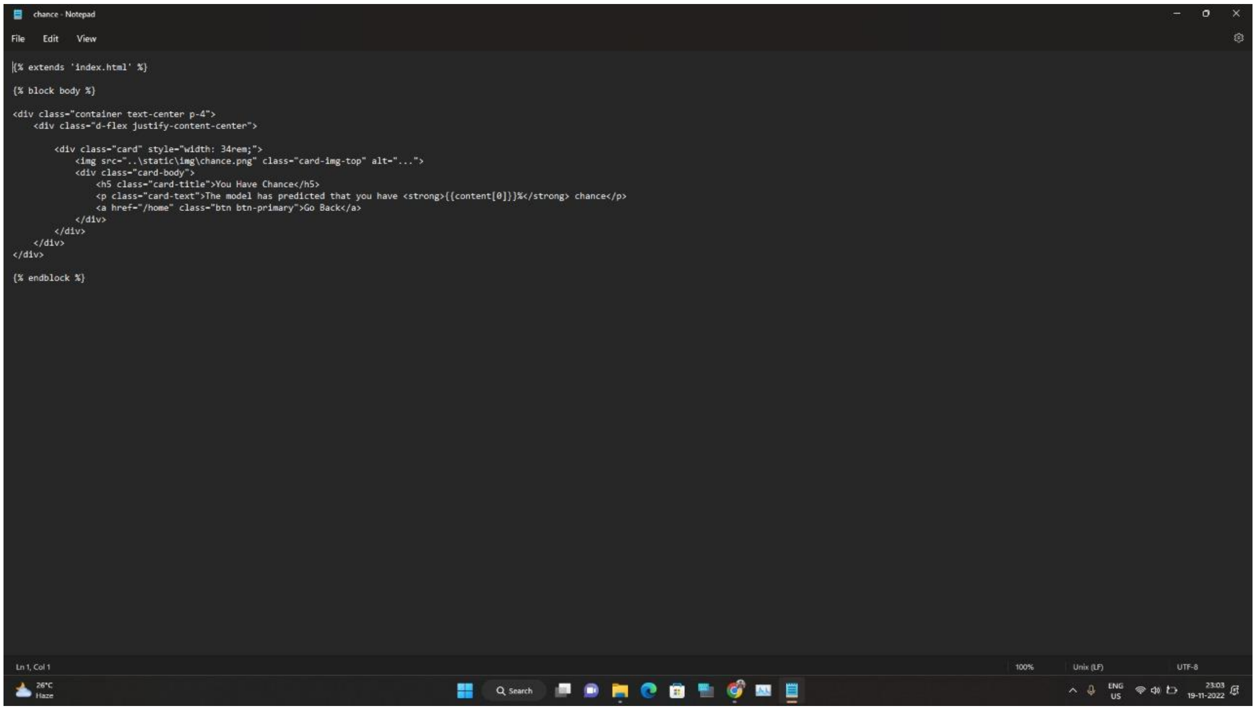
7.2 Feature 2

Index HTML code :



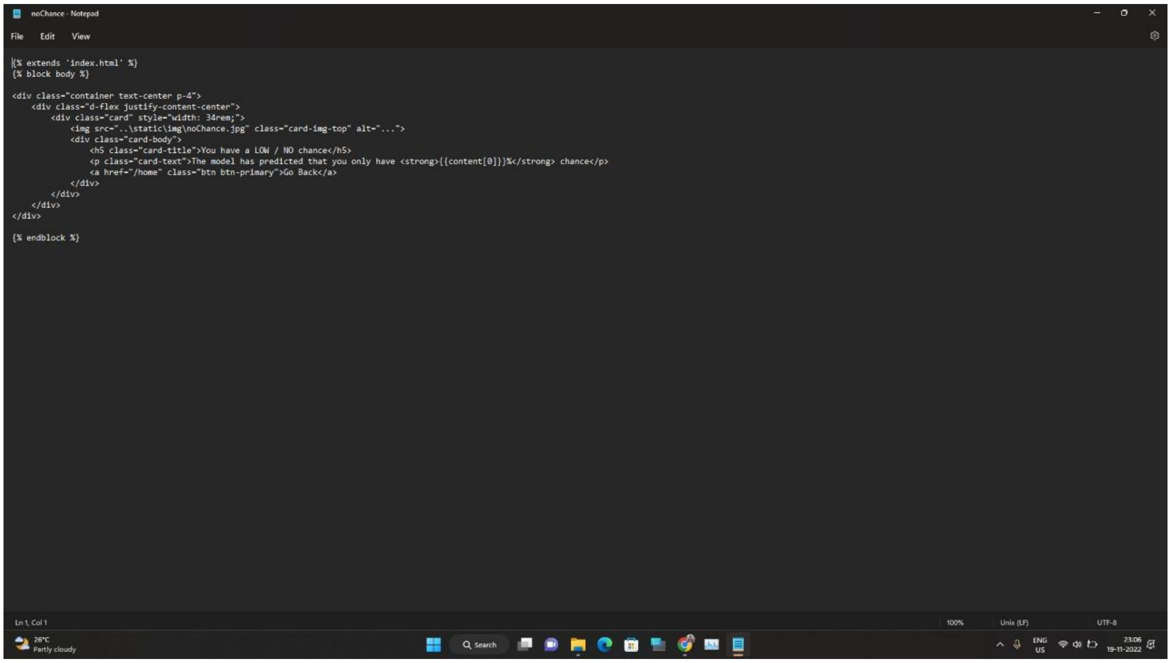
```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <meta name="viewport" content="width=device-width, initial-scale=1, maximum-scale=1, user-scalable=no">
    <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>
```

Chance HTML code:



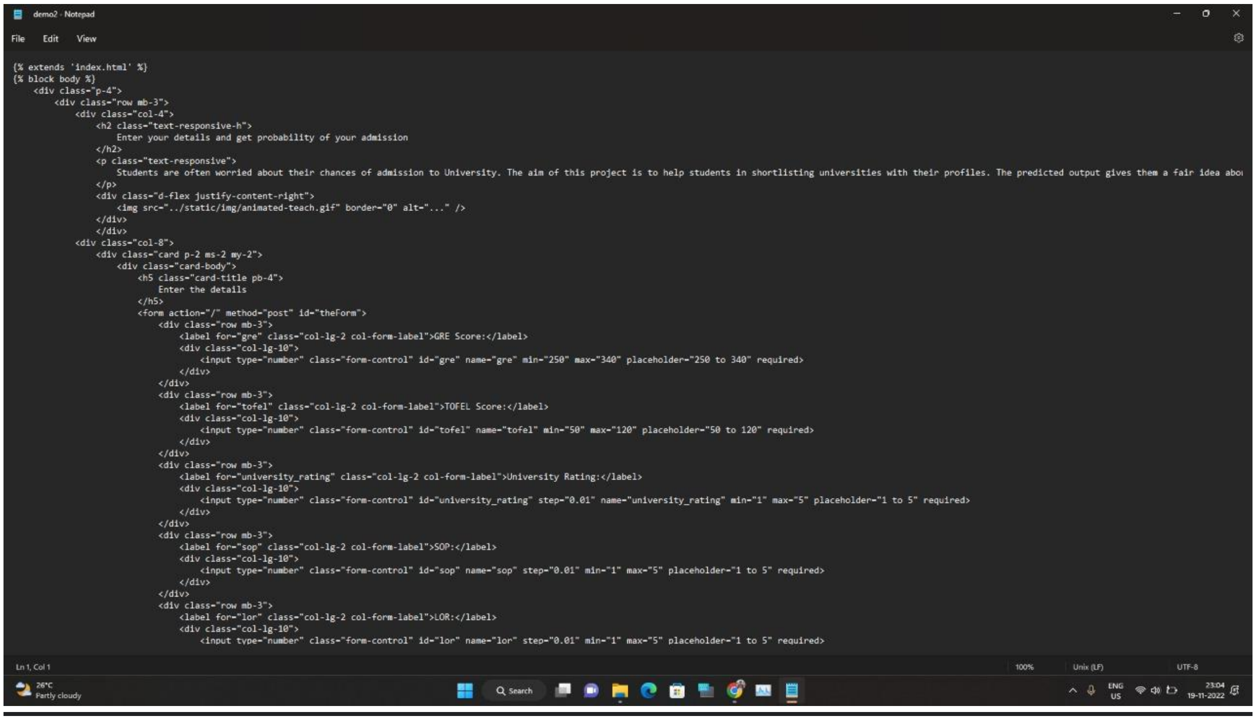
```
{% extends 'index.html' %}

{% 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 %}
```

No Chance HTML code :

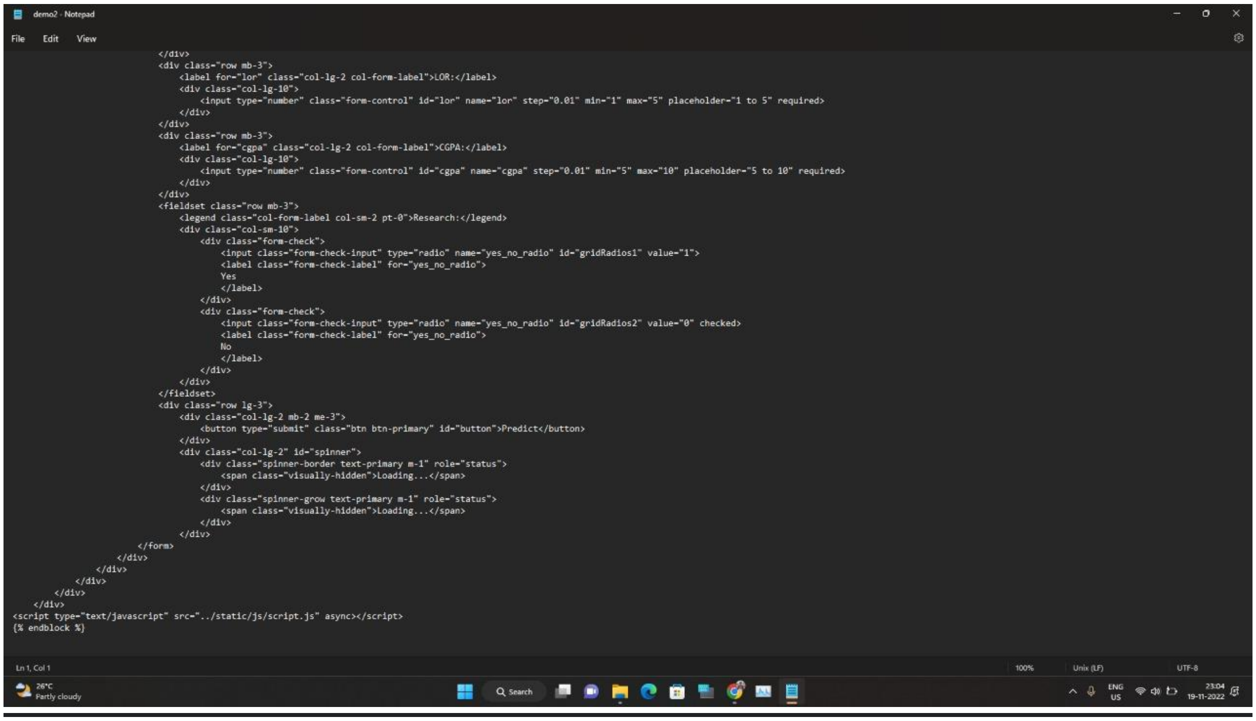


```
{% extends 'index.html' %}
{% block body %}

<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 %}
```

Demo HTML code :



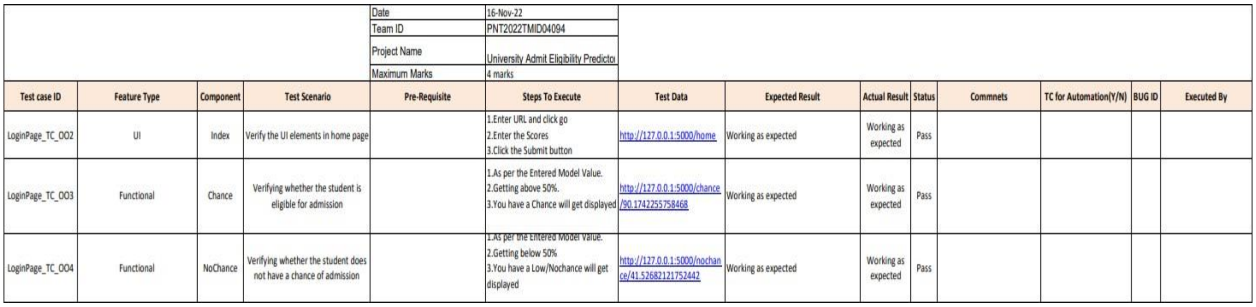
```
{% extends 'index.html' %}
{% block body %}
    <div class="p-4">
        <div class="row mb-3">
            <div class="col-4">
                <h2 class="text-responsive-h">
                    Enter your details and get probability of your admission
                </h2>
                <p class="text-responsive">
                    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 abou
                </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 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 %}
```

8. Testing :

8.1 Test cases



				Date	16-Nov-22								
				Team ID	PNT2022TMID04094								
				Project Name	University Admit Eligibility Predictor								
				Maximum Marks	4 marks								
Test case ID	Feature Type	Component	Test Scenario	Pre-Requisite	Steps To Execute	Test Data	Expected Result	Actual Result	Status	Commnets	TC for Automation(Y/N)	BUG ID	Executed By
LoginPage_TC_OO2	UI	Index	Verify the UI elements in home page		1.Enter URL and click go 2.Enter the Scores 3.Click the Submit button	http://127.0.0.1:5000/home	Working as expected	Working as expected	Pass				
LoginPage_TC_OO3	Functional	Chance	Verifying whether the student is eligible for admission		1.As per the Entered Model Value. 2.Getting above 50%. 3.You have a Chance will get displayed	http://127.0.0.1:5000/chance/90.1742255758468	Working as expected	Working as expected	Pass				
LoginPage_TC_OO4	Functional	NoChance	Verifying whether the student does not have a chance of admission		1.As per the Entered Model Value. 2.Getting below 50% 3.You have a Low/Nochance will get displayed	http://127.0.0.1:5000/nochance/41.52682121752442	Working as expected	Working as expected	Pass				

8.2 User acceptance Testing

8.2.1 Defect analysis

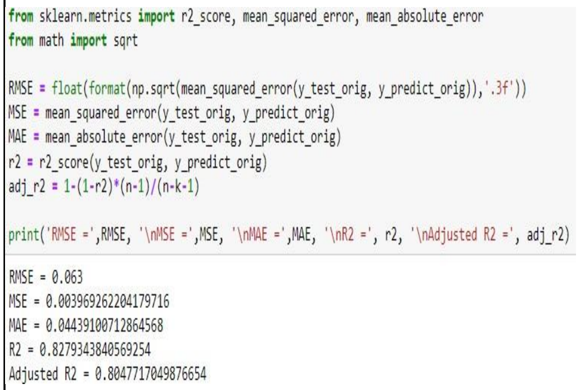
Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	10	4	2	3	20
Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	11	2	4	20	37
Skipped	0	0	1	1	2
Won't Fix	0	5	2	1	8
Totals	24	14	13	26	77

8.2.2 Test case analysis

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	7	0	0	7
Client Application	51	0	0	51
Security	2	0	0	2
Outsource Shipping	3	0	0	3
Exception Reporting	9	0	0	9
Final Report Output	4	0	0	4
Version Control	2	0	0	2

9. Results

9.1Performane Metrics

S.No.	Parameter	Values	Screenshot
1.	Metrics	**Regression Model:** MAE - 0.04439100712864568 , MSE –0.003969262204179716 RMSE - ,0.063 R2 score -0.8279343840569254 **Classification Model:** Confusion Matrix - , Accuray Score- & Classification Report -	
2.	Tune the Model	Hyperparameter Tuning - Validation Method -	

```
from sklearn.metrics import r2_score, mean_squared_error, mean_absolute_error
from math import sqrt

RMSE = float(format(np.sqrt(mean_squared_error(y_test_orig, y_predict_orig)),'.3f'))
MSE = mean_squared_error(y_test_orig, y_predict_orig)
MAE = mean_absolute_error(y_test_orig, y_predict_orig)
r2 = r2_score(y_test_orig, y_predict_orig)
adj_r2 = 1-(1-r2)*(n-1)/(n-k-1)

print('RMSE =',RMSE, '\nMSE =',MSE, '\nMAE =',MAE, '\nR2 =', r2, '\nAdjusted R2 =', adj_r2)
```

```
RMSE = 0.063
MSE = 0.003969262204179716
MAE = 0.04439100712864568
R2 = 0.8279343840569254
Adjusted R2 = 0.8047717049876654
```

10 . Advantages and Disadvantages

Advantages:

- It aids students in picking the appropriate college.
- When compared to the current system, this one has a lower mistake probability.
- It is quick, effective, and dependable.

- Prevents inconsistent and redundant data.
- Very approachable.
- Data are readily available

Disadvantages:

- A live internet connection is necessary.

11. Conclusion

Thus, it can be said that our model, which uses the Multiple Linear Regression Algorithm, offers a reliable prediction score and that users can guess the scores accurately. The website's user interface is straightforward and makes it easy for usersto use the feature.

12. FUTURE SCOPE

By including information about each university, we hope to improve the userexperience by allowing users to learn more about the local culture, alumni testimonials, university rankings, and other factors.

Source Code :

```
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 LINK :

https://github.com/IBM-EPBL/IBM-Project-25520-1659966541

DEMO LINK :
https://drive.google.com/file/d/1VfYlQOL4RaTdcFwVVCQr8f95p0xE6JSz/view?usp=share_link