PROJECT DOCUMENTATION

UNIVERSITY ADMIT ELIGIBILITY PREDICTOR

PROJECT NAME: UNIVERSITY ADMIT ELIGIBILITY PREDICTOR

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INTRODUCTION

PROJECT OVERVIEW

Specific preparation plays a crucial part in your life. Thus, education preparation students often have multiple questions about universities which they can get admission and scholarship and accommodation. One of the main concerns is getting admitted to their dream university. It's seen that students still choose to obtain their education from universities that are known internationally. According to estimates, there are more than 10 million international students enrolled in over 4200 universities and colleges including both private and public across the United States. Most number of students studying in America are from Asian countries like India, Pakistan, Sri Lanka, Japan and China. They are choosing not only America but also UK, Germany, Italy, Australia and Canada. 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.

PURPOSE

Your life depends greatly on the preparation you make. As a result, individuals preparing for careers in education frequently have numerous inquiries concerning the colleges to which they might apply, receive admission, scholarships, and housing. Being accepted to their ideal university is one of their key worries. Students continue to select well-known international universities to receive their education, as can be shown. Over 4200 private and public universities and colleges in the United States enrol more than 10 million overseas students, according to estimates. India, Pakistan, Sri Lanka, Japan, and China are among the Asian nations with the greatest number of students studying in the United States. They are picking the UK, Germany, Italy, Australia, and Canada in addition to the United States. 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

LITERATURE SURVEY

EXISTING MODEL

This section includes the literature review of previous research on the assessment of student enrollment opportunities in universities. Numerous programs and studies have been carried out on topics relating to university admission used many machine learning models which helps the students in the admission process to their desired universities. Previous research done in this area used Naive Bayes algorithm which will evaluate the success probability of student application into a respective university but the main drawback is they didn't consider all the factors which will contribute in the student admission process like TOEFL/IELTS, SOP, LOR and under graduate score. This model was developed to forecast the progress of prospective students by comparing the score of students currently studying at university. The model thus predicted whether the aspiring student should be admitted to university on the basis of various scores of students. Since the comparisons are made only with students who got admission into the universities but not with students who got their admission rejected so this method will not be that much accurate.

PROPOSED SYSTEM

The main goal of this project is to create a system that will address the issues that students encounter when applying to institutions. We will be creating a University Admit Eligibility Predictor (UAEP) system that will enable students to estimate, based on their profiles, the likelihood that a certain university would select their application. The system will also suggest universities for the student to apply to that have a good chance of admitting him or her. Additionally, we'll be developing a straightforward user interface that will enable users to enter information about a student's profile and receive the application's predicted outcome based on the profile as output. By suggesting the universities where they have the best chance of being admitted and thus saving more money on the application fee, this research will ultimately help students save the extra money and time they have spent at the education consultancy firms and help them to limit their number of applications to a small number.

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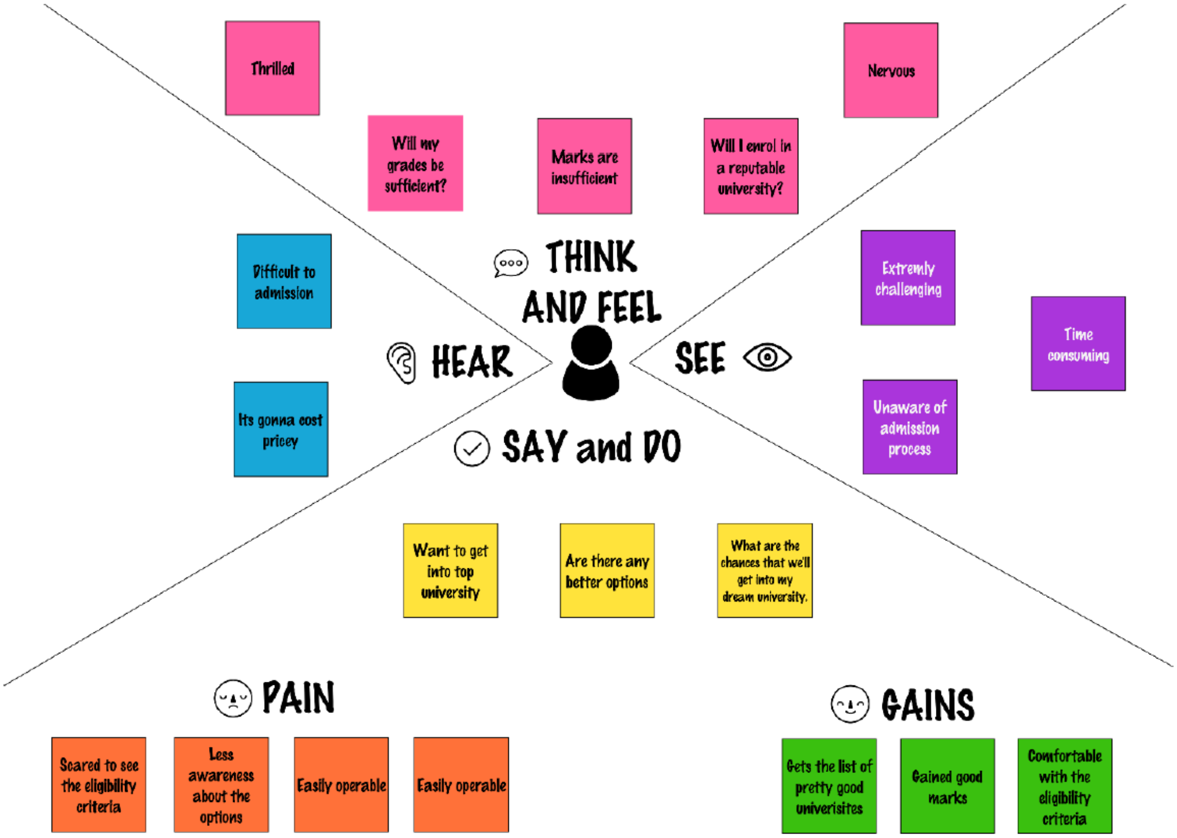
PROBLEM STATEMENT DEFINITION

PROBLEM STATEMENT	**I AM (CUSTOMER)**	**I'M TRYING TO**	**BUT**	**BECAUSE**	**WHICH MAKES ME FEEL**
PS-1	STUDENT	SEARCHING FOR UNIVERSITY SINCE A LONG TIME	STILL DIFFICULT TO FIND UNIVERSITY	UNIVERSITY IS FAR AWAY FROM MY HOME	DIFFICULT TO FIND A UNIVERSITY
PS-2	STUDENT	SEARCHING FOR A UNIVERSITY ON MY PHONE	DIFFICULT TO FIND AND TIME CONSUMING	DIFFICULT TO SEARCH IN OFFLINE	TIRED AND FRUSTRATED

IDEATION & PROPOSED SOLUTION

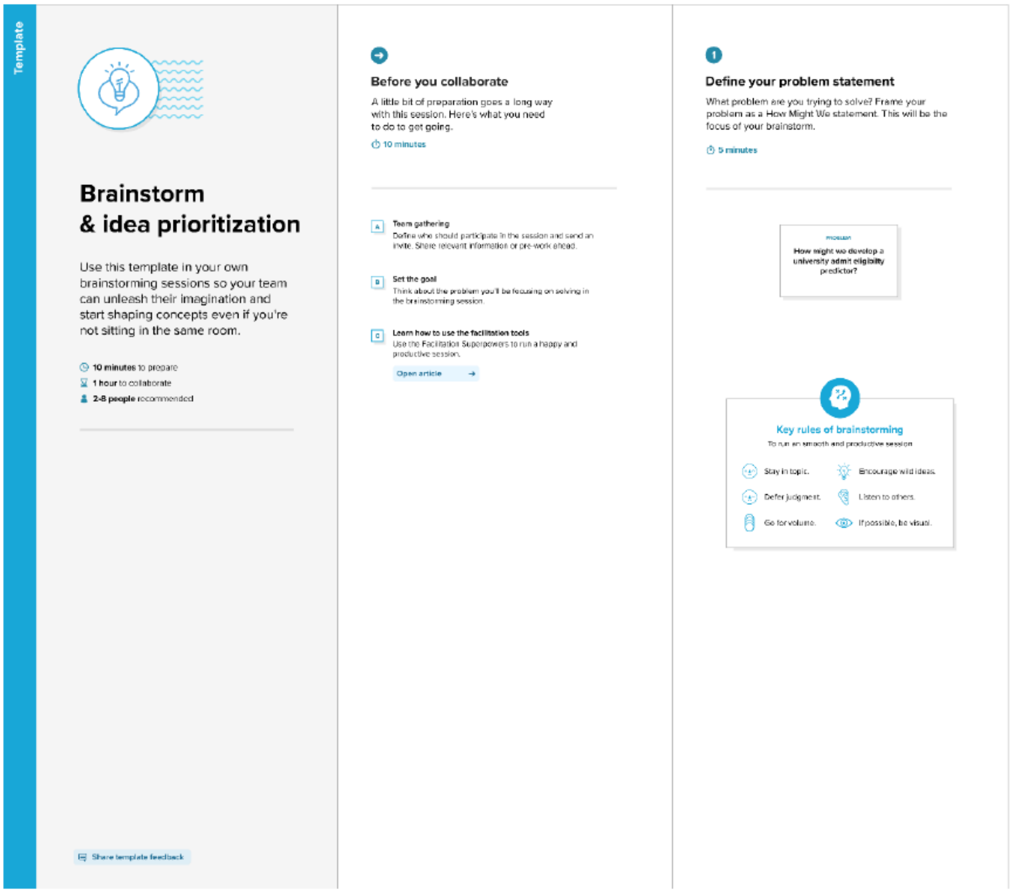
EMPATHY MAP CANVAS



Thrilled
Will my grades be sufficient?
Marks are insufficient
Will I enrol in a reputable university?
Nervous
THINK AND FEEL
Difficult to admission
Its gonna cost pricey
HEAR
SEE
Extremly challenging
Time consuming
Unaware of admission process
SAY and DO
Want to get into top university
Are there any better options
What are the chances that we'll get into my dream university.
PAIN
Scared to see the eligibility criteria
Less awareness about the options
Easily operable
Easily operable
GAINS
Gets the list of pretty good univerisites
Gained good marks
Comfortable with the eligibility criteria

IDEATION & BRAINSTORMING

Step-1: Team Gathering, Collaboration and Select the Problem Statement



Template

Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

10 minutes to prepare
1 hour to collaborate
2-8 people recommended

Share template feedback

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

10 minutes

A **Team gathering**
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B **Set the goal**
Think about the problem you'll be focusing on solving in the brainstorming session.

C **Learn how to use the facilitation tools**
Use the Facilitation Superpowers to run a happy and productive session.

Open article →

1 **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.

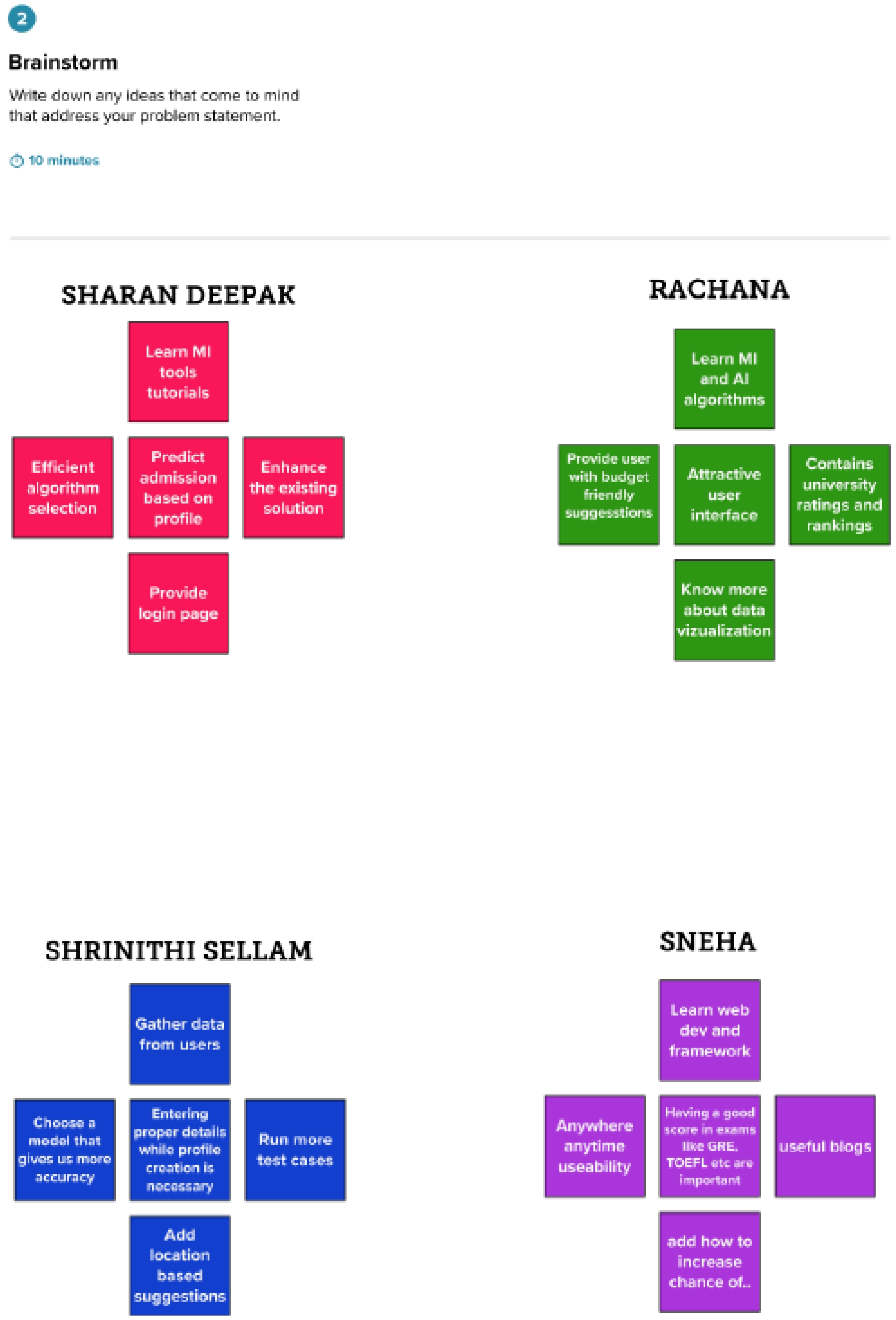
5 minutes

PROBLEM
How might we develop a university admit eligibilty predictor?

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.

Step-2: Brainstorm, Idea Listing and Grouping



2

Brainstorm

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

10 minutes

SHARAN DEEPAK

- Learn Ml tools tutorials
- Efficient algorithm selection
- Predict admission based on profile
- Enhance the existing solution
- Provide login page

RACHANA

- Learn Ml and AI algorithms
- Provide user with budget friendly suggesstions
- Attractive user interface
- Contains university ratings and rankings
- Know more about data vizualization

SHRINITHI SELLAM

- Gather data from users
- Choose a model that gives us more accuracy
- Entering proper details while profile creation is necessary
- Run more test cases
- Add location based suggestions

SNEHA

- Learn web dev and framework
- Anywhere anytime useability
- Having a good score in exams like GRE, TOEFL etc are important
- useful blogs
- add how to increase chance of..

3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, 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

Requirements:

- Learn Ml tools tutorials
- Learn Ml and AI algorithms
- Know more about data vizualization
- Gather data from users
- Learn web dev and framework

Application Type:

- Efficient algorithm selection
- Choose a model that gives us more accuracy
- Learn web dev and framework

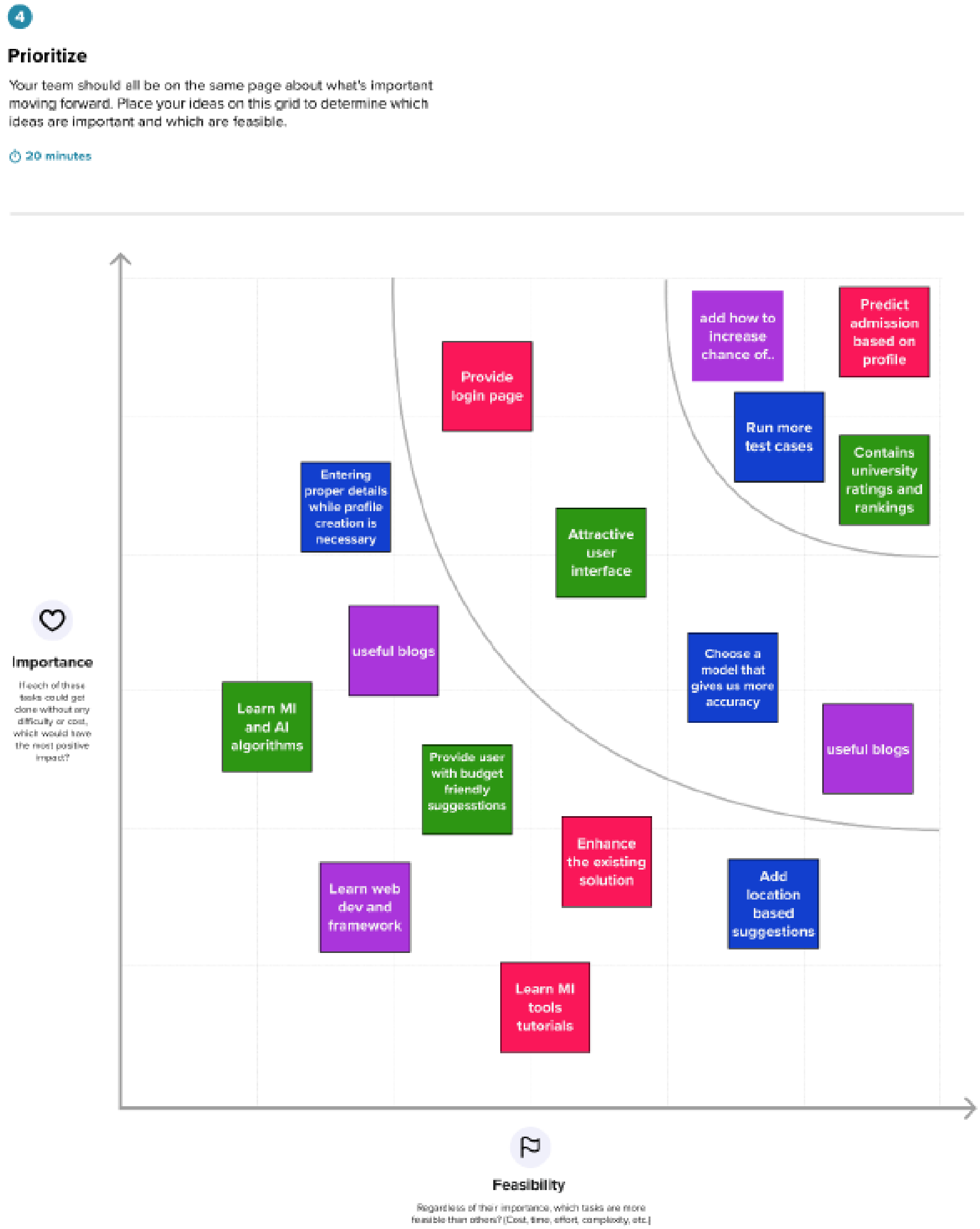
Core Features:

- Predict admission based on profile
- Provide login page
- Attractive user interface
- Provide user with budget friendly suggesstions
- Add location based suggestions
- Anywhere anytime useability
- Having a good score in exams like GRE, TOEFL etc are important

Additional Features:

- Contains university ratings and rankings
- useful blogs
- add how to increase chance of..

Step-3: Idea Prioritization



4

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

add how to increase chance of..
Predict admission based on profile
Provide login page
Run more test cases
Contains university ratings and rankings
Entering proper details while profile creation is necessary
Attractive user interface
useful blogs
Choose a model that gives us more accuracy
Learn Ml and AI algorithms
useful blogs
Provide user with budget friendly suggesstions
Enhance the existing solution
Add location based suggestions
Learn web dev and framework
Learn Ml tools tutorials
Importance
If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?
Feasibility
Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)

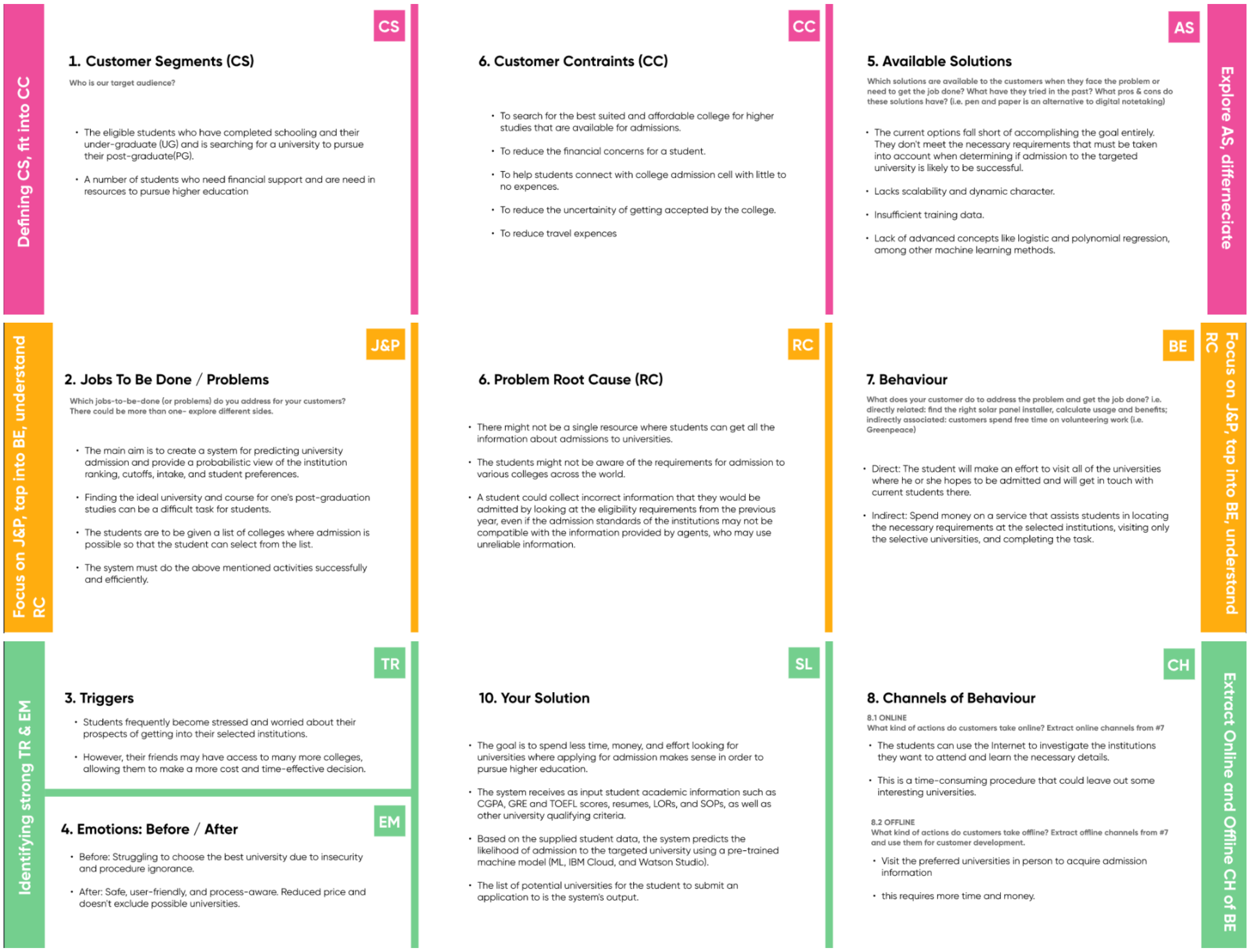
PROPOSED SOLUTION

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	A student will have to go through many obstacles to select the best universities or schools for education. Most of the students require to submit applications to the colleges where they may have little chances of being accepted. As a result, students from low-income backgrounds experience a tension and anxiety as they not only lose money for applying to college but also lose a sense of self-confidence.
2.	Idea / Solution description	It takes a lot of time and effort to conduct university and college research, which is one of the requirements for applying to universities. This problem, which is a major one for students, has not yet been resolved. There are reputable websites that rank the top colleges and universities according to factors like location, cost of attendance, degree offered, and major, but none of them utilize a machine learning algorithm to do it. As a result, we conducted this research to partially address that problem using data mining approaches.

3.	Novelty / Uniqueness	The university application procedure is a time-consuming effort. Students must put up a lot of effort and perseverance to finish the entire application procedure. If students were relieved of the responsibility of choosing the top schools and institutions for their applications, life would be much simpler for them.
4.	Social Impact / Customer Satisfaction	The findings of this study do not apply to all college graduates from every major. This method was unable to predict and recommend universities to students of every major due to informational constraints in the dataset. However, all majors can benefit from the statistical data mining methods used in this study. Universities that don't have enough data on the student's selected major will inform the user that there isn't enough information to make a projection.
5.	Business Model (Revenue Model)	Financial gain from this project can be derived from the students' entrance costs, but they want to first choose in their predicted college. Nevertheless, it is what this research does in order to anticipate. This issue has been dealt with in this

		research by modelling a recommender system based on different classification techniques. Thegradcafe.com provided the necessary info. Based on this data set, several models were developed, and the best one—along with a few others—suggests universities to students, thereby increasing the likelihood that they will get admitted from that list.
6.	Scalability of the Solution	This issue has been dealt with in this research by modelling a recommender system based on different classification techniques. The GPA, GRE (Verbal and Quant), and TOEFL scores of the student have been utilized as classification criteria to choose the best university for that student. The best university has been predicted using K nearest neighbors, and more related institutions have been found using K means clustering. The likelihood of an individual student being admitted to a given university has been predicted using support vector machines and random forests.

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 eligible students who have completed schooling and their under-graduate (UG) and is searching for a university to pursue their post-graduate(PG).
- A number of students who need financial support and are need in resources to pursue higher education

6. Customer Contraints (CC)

- To search for the best suited and affordable college for higher studies that are available for admissions.
- To reduce the financial concerns for a student.
- To help students connect with college admission cell with little to no expences.
- To reduce the uncertainity of getting accepted by the college.
- To reduce travel expences

5. Available Solutions

Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? (i.e. pen and paper is an alternative to digital notetaking)

- The current options fall short of accomplishing the goal entirely. They don't meet the necessary requirements that must be taken into account when determining if admission to the targeted university is likely to be successful.
- Lacks scalability and dynamic character.
- Insufficient training data.
- Lack of advanced concepts like logistic and polynomial regression, among other machine learning methods.

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 main aim is to create a system for predicting university admission and provide a probabilistic view of the institution ranking, cutoffs, intake, and student preferences.
- Finding the ideal university and course for one's post-graduation studies can be a difficult task for students.
- The students are to be given a list of colleges where admission is possible so that the student can select from the list.
- The system must do the above mentioned activities successfully and efficiently.

6. Problem Root Cause (RC)

- There might not be a single resource where students can get all the information about admissions to universities.
- The students might not be aware of the requirements for admission to various colleges across the world.
- A student could collect incorrect information that they would be admitted by looking at the eligibility requirements from the previous year, even if the admission standards of the institutions may not be compatible with the information provided by agents, who may use unreliable information.

7. Behaviour

What does your customer do to address the problem and get the job done? i.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace)

- Direct: The student will make an effort to visit all of the universities where he or she hopes to be admitted and will get in touch with current students there.
- Indirect: Spend money on a service that assists students in locating the necessary requirements at the selected institutions, visiting only the selective universities, and completing the task.

3. Triggers

- Students frequently become stressed and worried about their prospects of getting into their selected institutions.
- However, their friends may have access to many more colleges, allowing them to make a more cost and time-effective decision.

4. Emotions: Before / After

- Before: Struggling to choose the best university due to insecurity and procedure ignorance.
- After: Safe, user-friendly, and process-aware. Reduced price and doesn't exclude possible universities.

10. Your Solution

- The goal is to spend less time, money, and effort looking for universities where applying for admission makes sense in order to pursue higher education.
- The system receives as input student academic information such as CGPA, GRE and TOEFL scores, resumes, LORs, and SOPs, as well as other university qualifying criteria.
- Based on the supplied student data, the system predicts the likelihood of admission to the targeted university using a pre-trained machine model (ML, IBM Cloud, and Watson Studio).
- The list of potential universities for the student to submit an application to is the system's output.

8. Channels of Behaviour

8.1 ONLINE
What kind of actions do customers take online? Extract online channels from #7

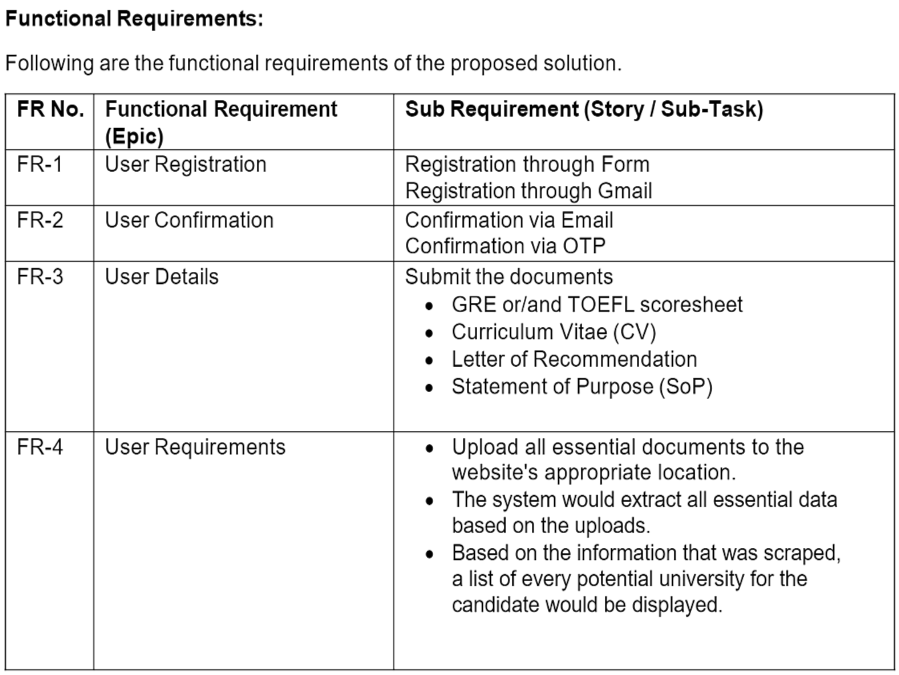
- The students can use the Internet to investigate the institutions they want to attend and learn the necessary details.
- This is a time-consuming procedure that could leave out some interesting universities.

8.2 OFFLINE
What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.

- Visit the preferred universities in person to acquire admission information
- this requires more time and money.

REQUIREMENT ANALYSIS

FUNCTIONAL REQUIREMENTS

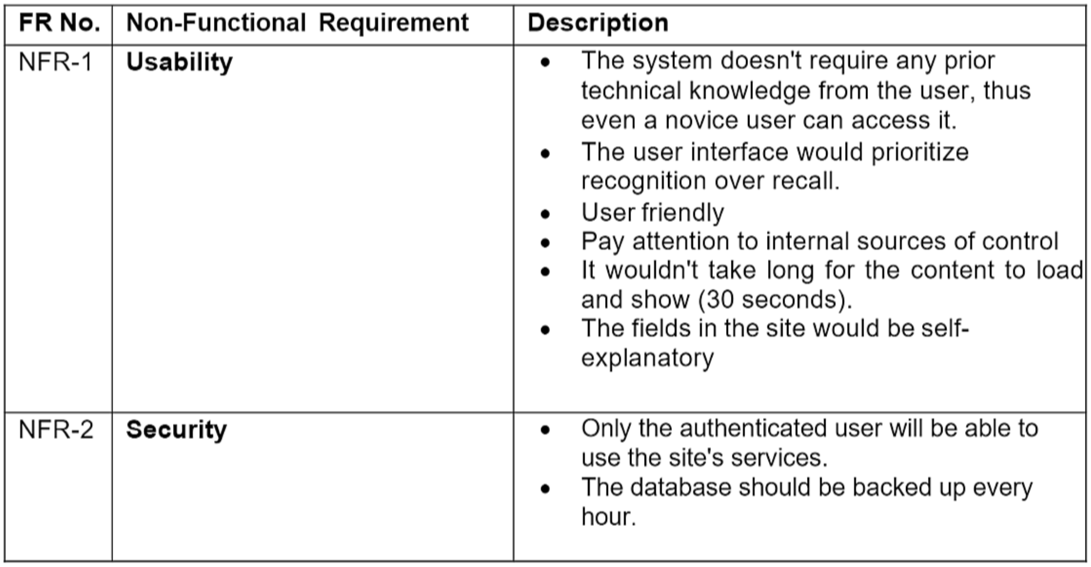


Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Details	Submit the documents • GRE or/and TOEFL scoresheet • Curriculum Vitae (CV) • Letter of Recommendation • Statement of Purpose (SoP)
FR-4	User Requirements	• Upload all essential documents to the website's appropriate location. • The system would extract all essential data based on the uploads. • Based on the information that was scraped, a list of every potential university for the candidate would be displayed.

NON-FUNCTIONAL REQUIREMENTS



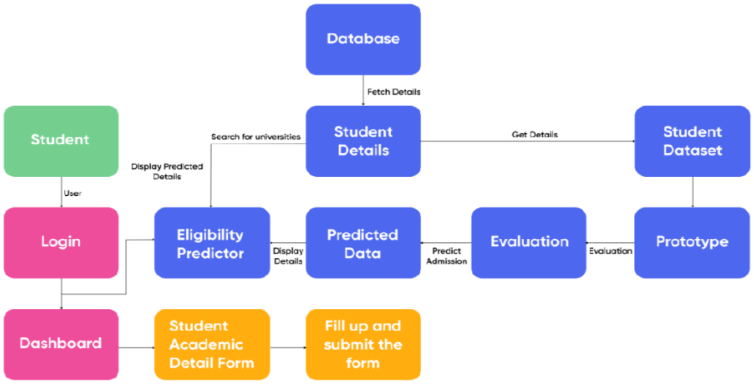
FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	• The system doesn't require any prior technical knowledge from the user, thus even a novice user can access it. • The user interface would prioritize recognition over recall. • User friendly • Pay attention to internal sources of control • It wouldn't take long for the content to load and show (30 seconds). • The fields in the site would be self-explanatory
NFR-2	**Security**	• Only the authenticated user will be able to use the site's services. • The database should be backed up every hour.

		- In the event of any error, the system ought to be able to resume regular functioning in less than an hour.
NFR-3	**Reliability**	- Due to the value of data and the potential harm that inaccurate or incomplete data could do, the system will always strive for optimum reliability. - The system will be operational every day of the week, 24 hours a day.
NFR-4	**Performance**	- The website can efficiently handle traffic by responding to requests right away. - A 64-kbps modem connection would take no longer than 30 seconds to see this webpage (quantitatively, the mean time)
NFR-5	**Availability**	- Low data redundancy - reduced error risk, quick and effective
NFR-6	**Scalability**	- A significant number of users must be able to access the system simultaneously because an academic portal is essential to the courses that use it. - The system will likely be most stressed during the admissions season. - Therefore, it must be able to handle several users at once.

PROJECT DESIGN

DATA FLOW DIAGRAMS

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. 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 theinformation, and where data is stored.



USER STORIES

User Type	Functional Requireme nt (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer	Landing page	USN-1	As a user, I am able to view information and details about the university	I am able to access the university landing page	Medium	Sprint-1
		USN-2	As a user, I am able to view the current news about the university	I am able to access the latest news	Medium	Sprint-1
		USN-3	As a user, I am able to fill a form to contact the university with queries	I am able to fill and submit thecontact form	Low	Sprint-2
		USN-4	As a user, I am able to go through the social media pages of the university	I am able to reach out to themvia social media	Medium	Sprint-1
		USN-5	As a user, I am able to see testimonials of students who have passed out from that university	I am able to access the testimonials	Medium	Sprint-1
	Admissions	USN-6	As a user, I am able to see the cut off marks of past years.	I am able to download the previous year cut-off details	High	Sprint-2
		USN-7	As a user, I am able to access details of previous alumni.	I am able to access the details of alumni ofthe university	Medium	Sprint-2
		USN-8	As a user, I am able to predict my admission eligibility for the university	I am able to get result aseither eligible/not eligible	High	Sprint-2

	Courses offered	USN-9	As a user, I am able to view the courses offered by the university for PG students	I am able to access the course details	Medium	Sprint-3
	Events	USN-10	As a user, I am able check the various technical events about to happen in the university	I can register for the events	Low	Sprint-3
	E-books	USN-11	As a user, I am able to download and read e- books relating to visa formalities	I can download the e- books	High	Sprint-3

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
	Scholarship	USN-12	As a user, I will be able to find resources regarding scholarship availability	I can access scholarship resources	High	Sprint-4
	Test prep materials	USN-13	As a user, I will be able to download and read GRE, TOEFL test preparation materials	I can download test preparation materials	Medium	Sprint-4
Administrator	Landing page	USN-14	As an administrator, I will be able to update the news about the university	I can check if the update is reflected or not	Medium	Sprint-4
	Events	USN-15	As an administrator, I will be able to update the list of activities to be hosted	I can check if the update is reflected or not	Medium	Sprint-4

TECHNICAL ARCHITECTURE:

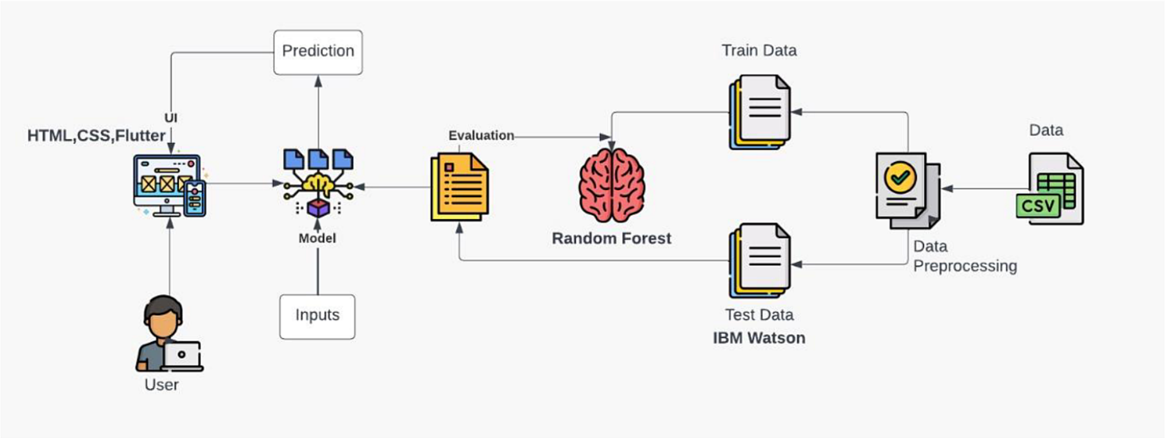
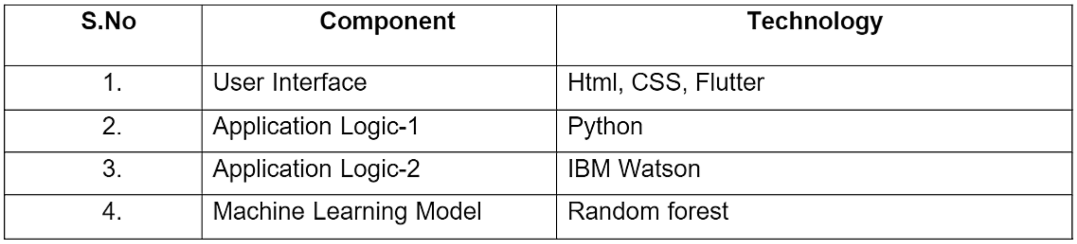
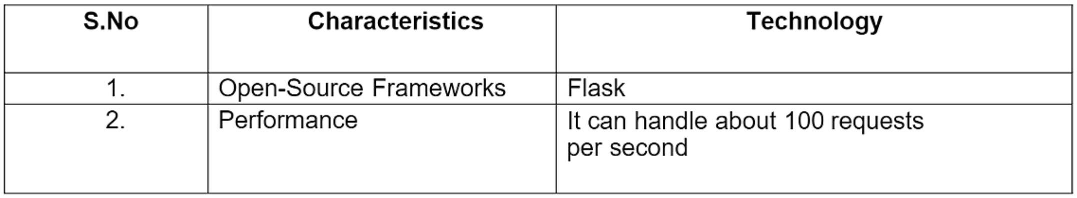


Table-1 : Components & Technologies:



S.No	Component	Technology
1.	User Interface	Html, CSS, Flutter
2.	Application Logic-1	Python
3.	Application Logic-2	IBM Watson
4.	Machine Learning Model	Random forest

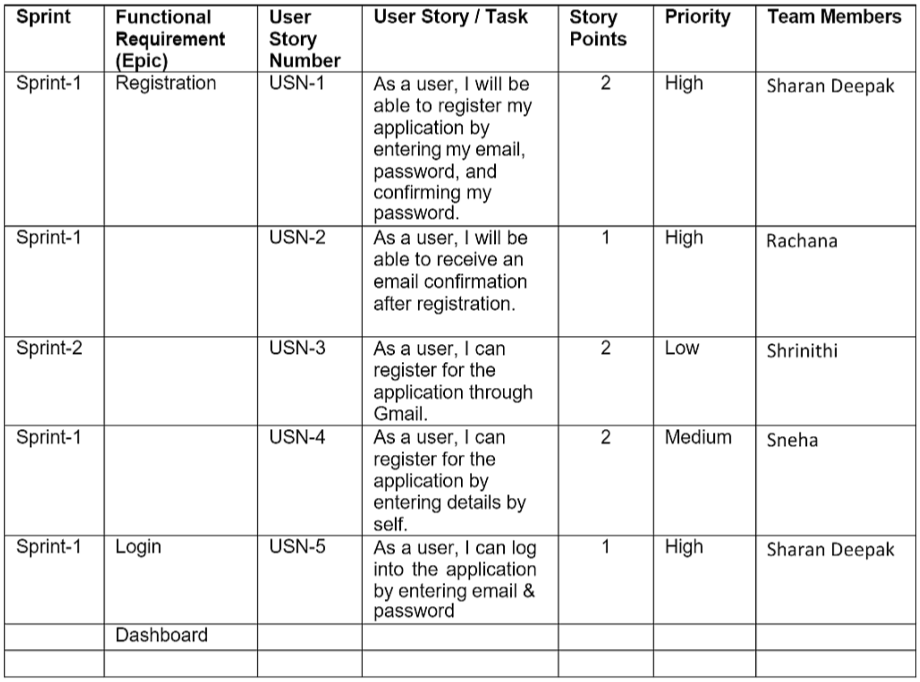
Table-2: Application Characteristics:



S.No	Characteristics	Technology
1.	Open-Source Frameworks	Flask
2.	Performance	It can handle about 100 requests per second

PROJECT PLANNING & SCHEDULING

SPRINT PLANNING & ESTIMATION, DELIVERY SCHEDULE



Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I will be able to register my application by entering my email, password, and confirming my password.	2	High	Sharan Deepak
Sprint-1		USN-2	As a user, I will be able to receive an email confirmation after registration.	1	High	Rachana
Sprint-2		USN-3	As a user, I can register for the application through Gmail.	2	Low	Shrinithi
Sprint-1		USN-4	As a user, I can register for the application by entering details by self.	2	Medium	Sneha
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	1	High	Sharan Deepak
	Dashboard					

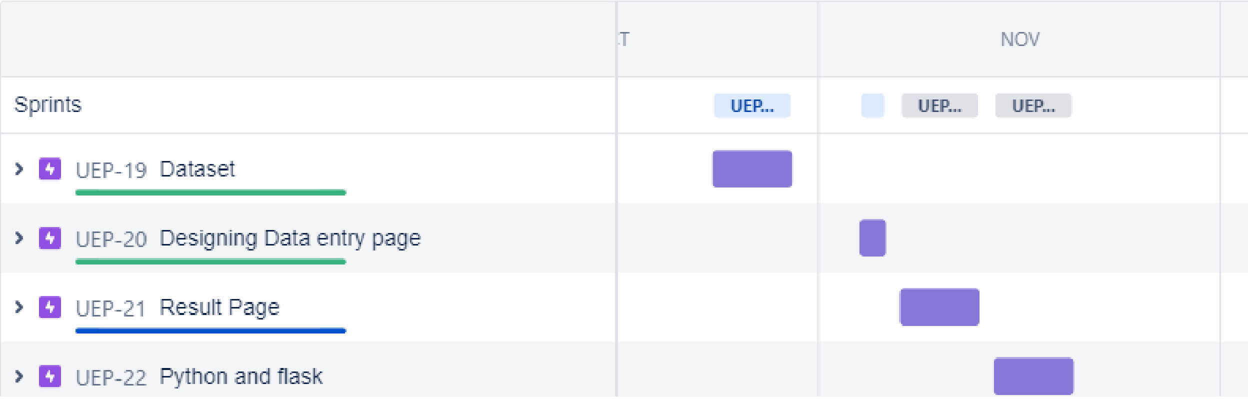
Project Tracker, Velocity & Burndown Chart: (4 Marks)

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	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022		
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022		
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022		

Velocity:
Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

$$AV = \frac{sprint\ duration}{velocity} = \frac{20}{10} = 2$$

REPORTS FROM JIRA



UEP-19 Dataset

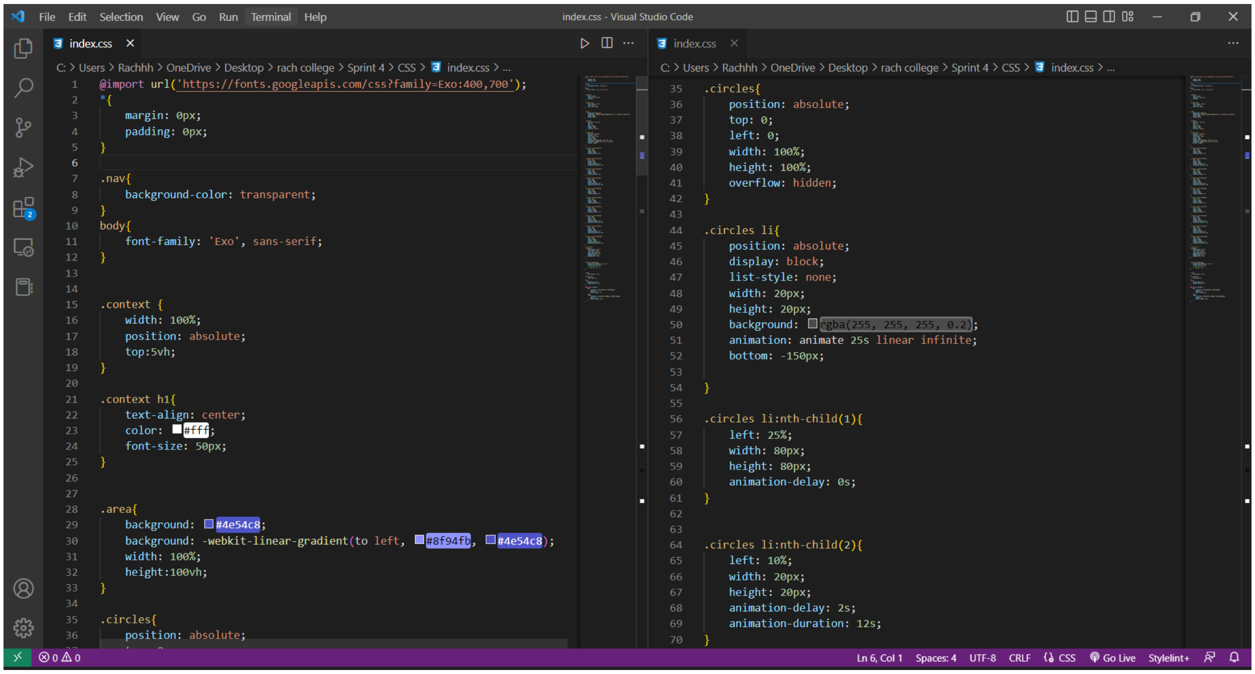
UEP-20 Designing Data entry page

UEP-21 Result Page

UEP-22 Python and flask

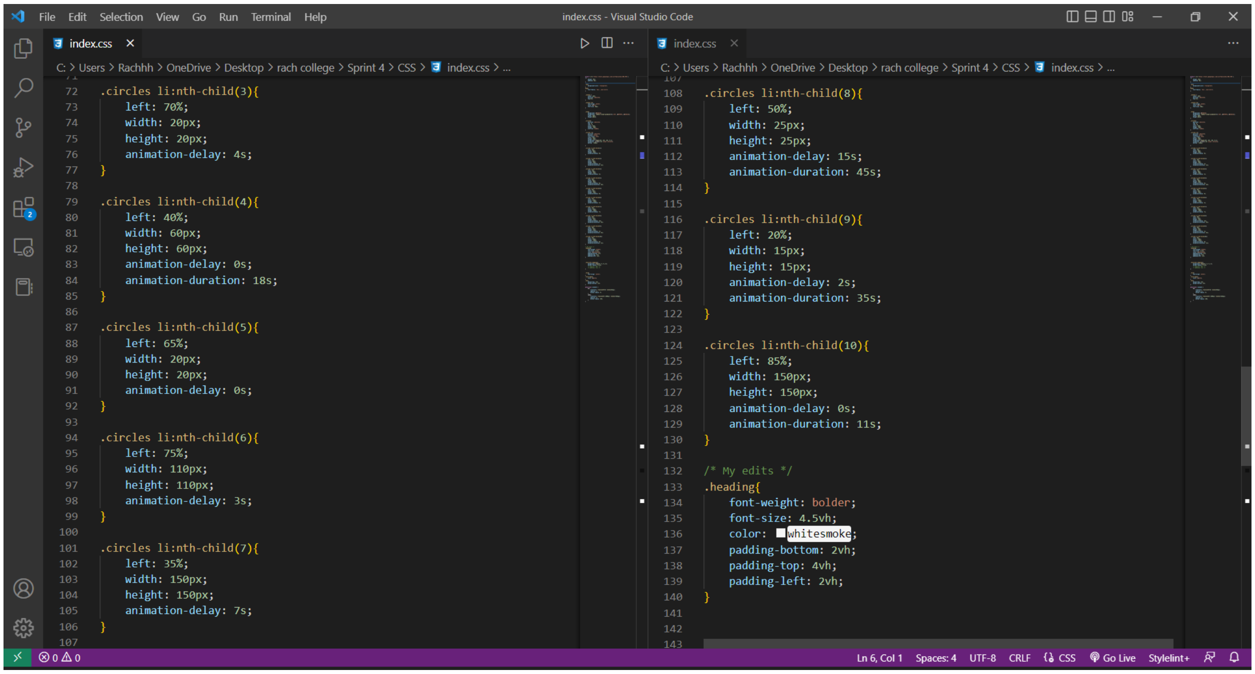
CODING AND SOLUTIONING

FEATURE 1: FRONT END


File Edit Selection View Go Run Terminal Help
index.css - Visual Studio Code
index.css
C: > Users > Rachhh > OneDrive > Desktop > rach college > Sprint 4 > CSS > index.css > ...
Ln 6, Col 1 Spaces: 4 UTF-8 CRLF CSS Go Live Stylelint+

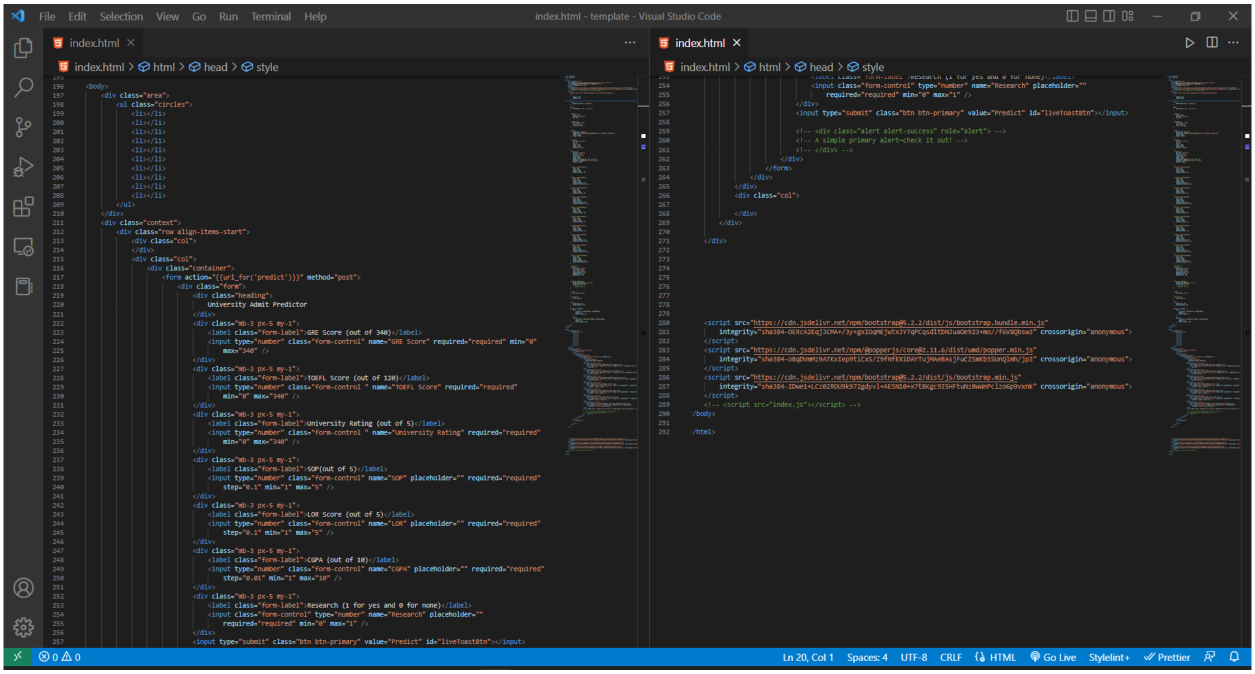
```css
@import url('https://fonts.googleapis.com/css?family=Exo:400,700');
*{
    margin: 0px;
    padding: 0px;
}

.nav{
    background-color: transparent;
}
body{
    font-family: 'Exo', sans-serif;
}


.context {
    width: 100%;
    position: absolute;
    top:5vh;
}

.context h1{
    text-align: center;
    color: #fff;
    font-size: 50px;
}


.area{
    background: #4e54c8;
    background: -webkit-linear-gradient(to left, #8f94fb, #4e54c8);
    width: 100%;
    height:100vh;
}

.circles{
    position: absolute;
```

```css
.circles{
    position: absolute;
    top: 0;
    left: 0;
    width: 100%;
    height: 100%;
    overflow: hidden;
}

.circles li{
    position: absolute;
    display: block;
    list-style: none;
    width: 20px;
    height: 20px;
    background: rgba(255, 255, 255, 0.2);
    animation: animate 25s linear infinite;
    bottom: -150px;

}

.circles li:nth-child(1){
    left: 25%;
    width: 80px;
    height: 80px;
    animation-delay: 0s;
}


.circles li:nth-child(2){
    left: 10%;
    width: 20px;
    height: 20px;
    animation-delay: 2s;
    animation-duration: 12s;
}
```


File Edit Selection View Go Run Terminal Help
index.css - Visual Studio Code
index.css
C: > Users > Rachhh > OneDrive > Desktop > rach college > Sprint 4 > CSS > index.css > ...
Ln 6, Col 1 Spaces: 4 UTF-8 CRLF CSS Go Live Stylelint+

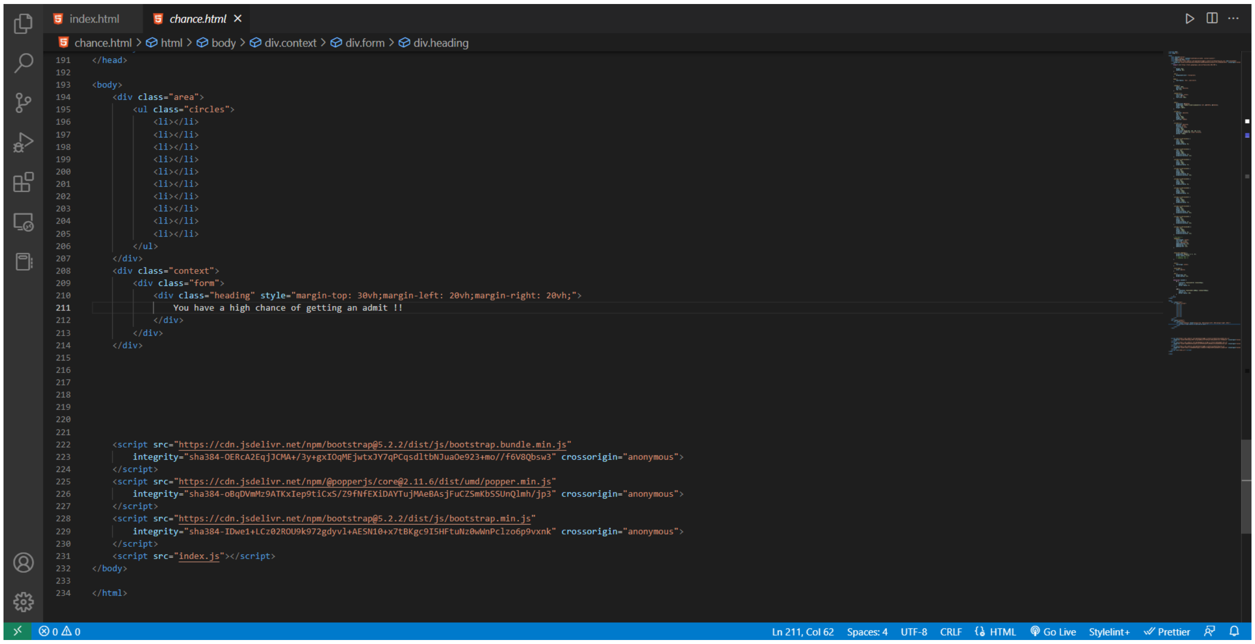
```css
.circles li:nth-child(3){
    left: 70%;
    width: 20px;
    height: 20px;
    animation-delay: 4s;
}

.circles li:nth-child(4){
    left: 40%;
    width: 60px;
    height: 60px;
    animation-delay: 0s;
    animation-duration: 18s;
}

.circles li:nth-child(5){
    left: 65%;
    width: 20px;
    height: 20px;
    animation-delay: 0s;
}

.circles li:nth-child(6){
    left: 75%;
    width: 110px;
    height: 110px;
    animation-delay: 3s;
}

.circles li:nth-child(7){
    left: 35%;
    width: 150px;
    height: 150px;
    animation-delay: 7s;
}

```

```css
.circles li:nth-child(8){
    left: 50%;
    width: 25px;
    height: 25px;
    animation-delay: 15s;
    animation-duration: 45s;
}

.circles li:nth-child(9){
    left: 20%;
    width: 15px;
    height: 15px;
    animation-delay: 2s;
    animation-duration: 35s;
}

.circles li:nth-child(10){
    left: 85%;
    width: 150px;
    height: 150px;
    animation-delay: 0s;
    animation-duration: 11s;
}

/* My edits */
.heading{
    font-weight: bolder;
    font-size: 4.5vh;
    color: whitesmoke;
    padding-bottom: 2vh;
    padding-top: 4vh;
    padding-left: 2vh;
}
```

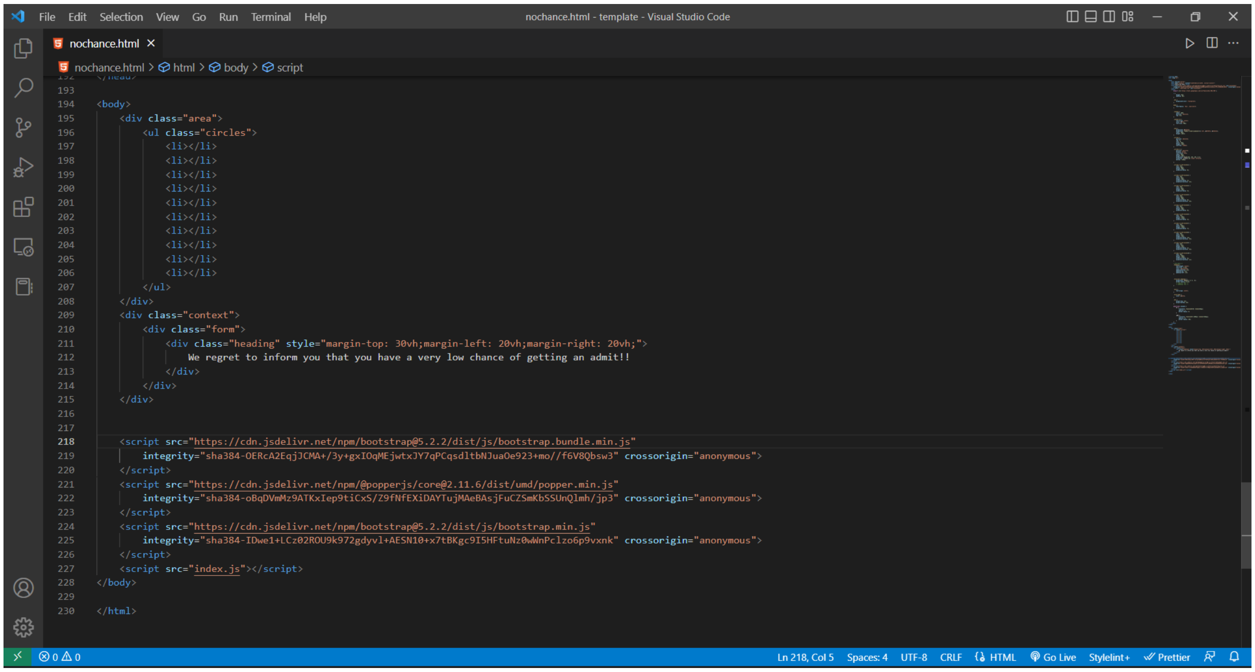

File Edit Selection View Go Run Terminal Help
index.html - template - Visual Studio Code
index.html
index.html > html > head > style
Ln 20, Col 1
Spaces: 4
UTF-8
CRLF
HTML
Go Live
Stylelint+
Prettier
0 0

```html
<body>
    <div class="area">
        <ul class="circles">
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
        </ul>
    </div>
    <div class="context">
        <div class="row align-items-start">
            <div class="col">
            </div>
            <div class="col">
                <div class="container">
                    <form action="{{url_for('predict')}}" method="post">
                        <div class="form">
                            <div class="heading">
                                University Admit Predictor
                            </div>
                            <div class="mb-3 px-5 my-1">
                                <label class="form-label">GRE Score (out of 340)</label>
                                <input type="number" class="form-control" name="GRE Score" required="required" min="0"
                                    max="340" />
                            </div>
                            <div class="mb-3 px-5 my-1">
                                <label class="form-label">TOEFL Score (out of 120)</label>
                                <input type="number" class="form-control " name="TOEFL Score" required="required"
                                    min="0" max="340" />
                            </div>
                            <div class="mb-3 px-5 my-1">
                                <label class="form-label">University Rating (out of 5)</label>
                                <input type="number" class="form-control " name="University Rating" required="required"
                                    min="0" max="340" />
                            </div>
                            <div class="mb-3 px-5 my-1">
                                <label class="form-label">SOP(out of 5)</label>
                                <input type="number" class="form-control" name="SOP" placeholder="" required="required"
                                    step="0.1" min="1" max="5" />
                            </div>
                            <div class="mb-3 px-5 my-1">
                                <label class="form-label">LOR Score (out of 5)</label>
                                <input type="number" class="form-control" name="LOR" placeholder="" required="required"
                                    step="0.1" min="1" max="5" />
                            </div>
                            <div class="mb-3 px-5 my-1">
                                <label class="form-label">CGPA (out of 10)</label>
                                <input type="number" class="form-control" name="CGPA" placeholder="" required="required"
                                    step="0.01" min="1" max="10" />
                            </div>
                            <div class="mb-3 px-5 my-1">
                                <label class="form-label">Research (1 for yes and 0 for none)</label>
                                <input class="form-control" type="number" name="Research" placeholder=""
                                    required="required" min="0" max="1" />
                            </div>
                            <input type="submit" class="btn btn-primary" value="Predict" id="liveToastBtn"></input>
```

```html
                                <input class="form-control" type="number" name="Research" placeholder=""
                                    required="required" min="0" max="1" />
                            </div>
                            <input type="submit" class="btn btn-primary" value="Predict" id="liveToastBtn"></input>

                            <!-- <div class="alert alert-success" role="alert"> -->
                            <!-- A simple primary alert—check it out! -->
                            <!-- </div> -->
                        </div>
                    </form>
                </div>
            </div>
            <div class="col">

            </div>
        </div>

    </div>








    <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>
    <script src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.11.6/dist/umd/popper.min.js"
        integrity="sha384-oBqDVmMz9ATKxIep9tiCxS/Z9fNfEXiDAYTujMAeBAsjFuCZSmKbSSUnQlmh/jp3" crossorigin="anonymous">
    </script>
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/js/bootstrap.min.js"
        integrity="sha384-IDwe1+LCz02ROU9k972gdyvl+AESN10+x7tBKgc9I5HFtuNz0wWnPclzo6p9vxnk" crossorigin="anonymous">
    </script>
    <!-- <script src="index.js"></script> -->
</body>

</html>
```

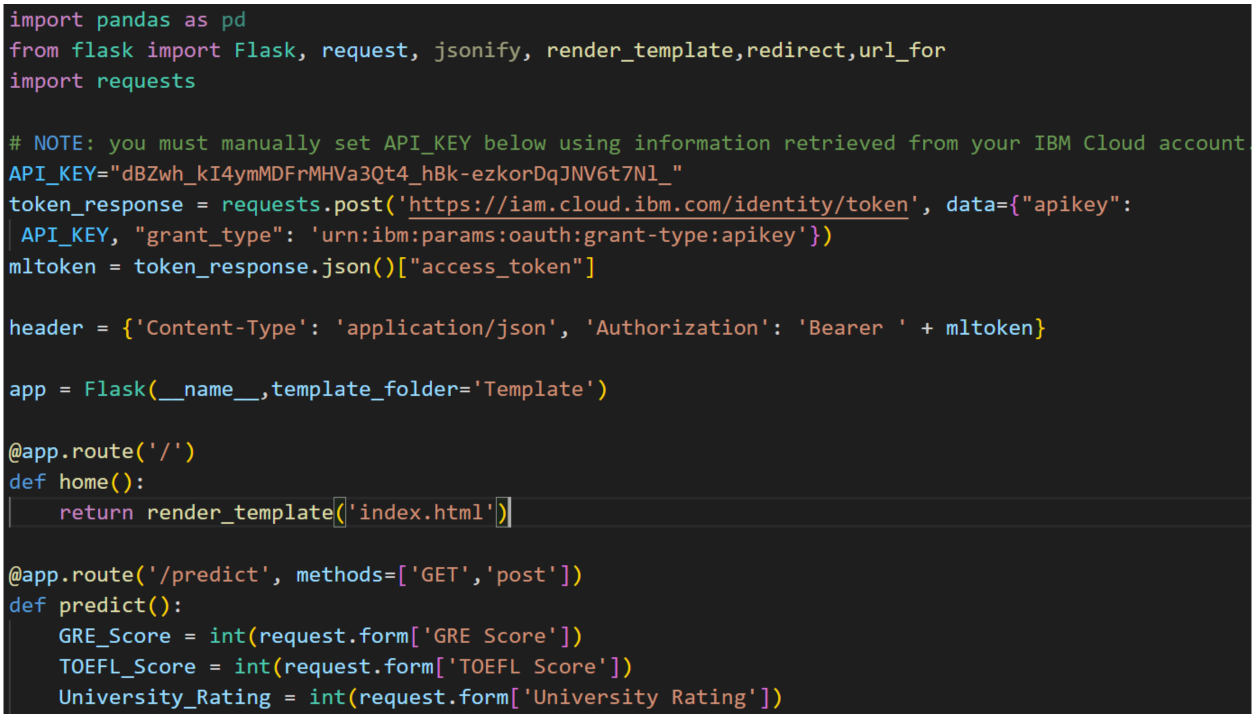


```html
</head>

<body>
    <div class="area">
        <ul class="circles">
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
        </ul>
    </div>
    <div class="context">
        <div class="form">
            <div class="heading" style="margin-top: 30vh;margin-left: 20vh;margin-right: 20vh;">
                You have a high chance of getting an admit !!
            </div>
        </div>
    </div>







    <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>
    <script src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.11.6/dist/umd/popper.min.js"
        integrity="sha384-oBqDVmMz9ATKxIep9tiCxS/Z9fNfEXiDAYTujMAeBAsjFuCZSmKbSSUnQlmh/jp3" crossorigin="anonymous">
    </script>
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/js/bootstrap.min.js"
        integrity="sha384-IDwe1+LCz02ROU9k972gdyvl+AESN10+x7tBKgc9I5HFtuNz0wWnPclzo6p9vxnk" crossorigin="anonymous">
    </script>
    <script src="index.js"></script>
</body>

</html>
```

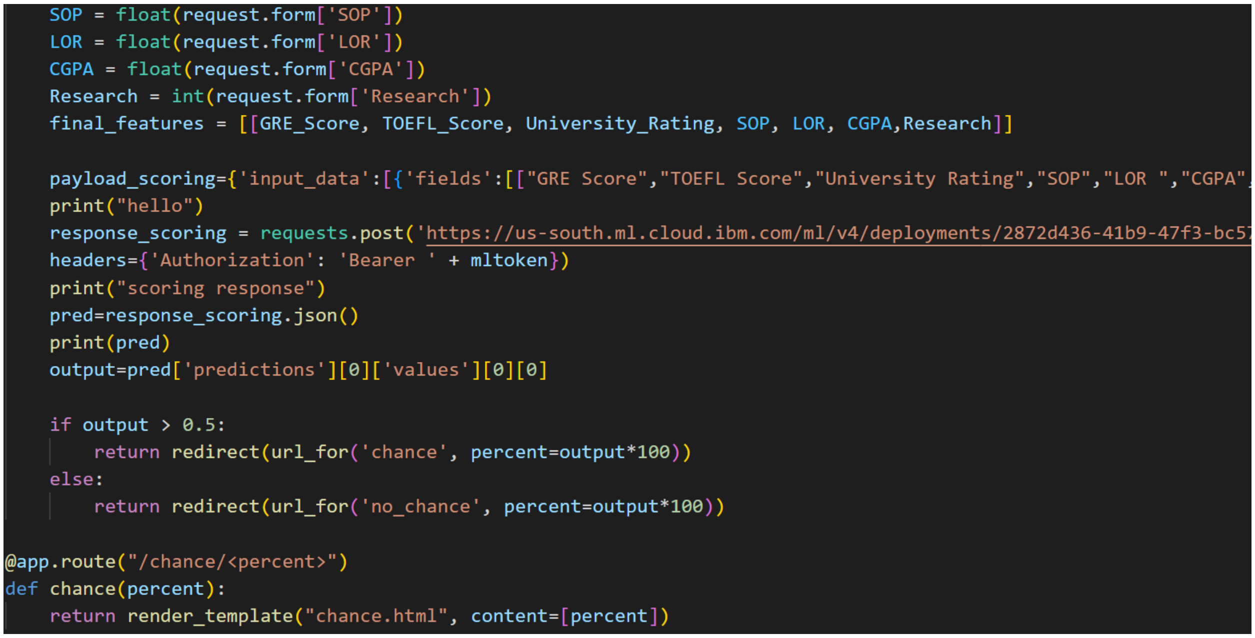

File Edit Selection View Go Run Terminal Help
nochance.html - template - Visual Studio Code
nochance.html
nochance.html > html > body > script
⊗ 0 ⚠ 0
Ln 218, Col 5
Spaces: 4
UTF-8
CRLF
HTML
Go Live
Stylelint+
Prettier

```html
</head>

<body>
    <div class="area">
        <ul class="circles">
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
            <li></li>
        </ul>
    </div>
    <div class="context">
        <div class="form">
            <div class="heading" style="margin-top: 30vh;margin-left: 20vh;margin-right: 20vh;">
                We regret to inform you that you have a very low chance of getting an admit!!
            </div>
        </div>
    </div>


    <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>
    <script src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.11.6/dist/umd/popper.min.js"
        integrity="sha384-oBqDVmMz9ATKxIep9tiCxS/Z9fNfEXiDAYTujMAeBAsjFuCZSmKbSSUnQlmh/jp3" crossorigin="anonymous">
    </script>
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/js/bootstrap.min.js"
        integrity="sha384-IDwe1+LCz02ROU9k972gdyvl+AESN10+x7tBKgc9I5HFtuNz0wWnPclzo6p9vxnk" crossorigin="anonymous">
    </script>
    <script src="index.js"></script>
</body>

</html>
```

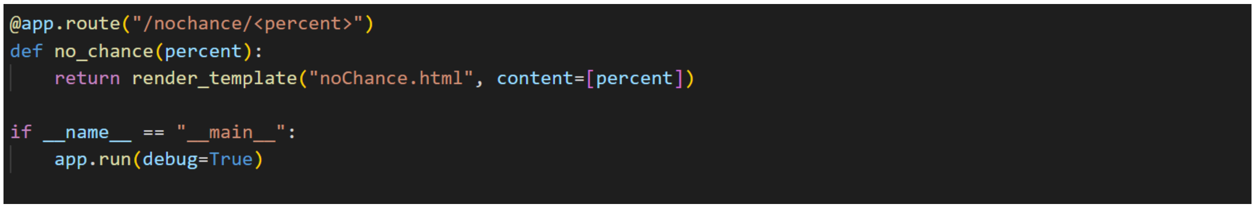
FEATURE 2: BACK END



```python
import pandas as pd
from flask import Flask, request, jsonify, render_template,redirect,url_for
import requests

# NOTE: you must manually set API_KEY below using information retrieved from your IBM Cloud account
API_KEY="dBZwh_kI4ymMDFrMHVa3Qt4_hBk-ezkorDqJNV6t7Nl_"
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}

app = Flask(__name__,template_folder='Template')

@app.route('/')
def home():
    return render_template('index.html')

@app.route('/predict', methods=['GET','post'])
def predict():
    GRE_Score = int(request.form['GRE Score'])
    TOEFL_Score = int(request.form['TOEFL Score'])
    University_Rating = int(request.form['University Rating'])
```



```
    SOP = float(request.form['SOP'])
    LOR = float(request.form['LOR'])
    CGPA = float(request.form['CGPA'])
    Research = int(request.form['Research'])
    final_features = [[GRE_Score, TOEFL_Score, University_Rating, SOP, LOR, CGPA,Research]]

    payload_scoring={'input_data':[{'fields':[["GRE Score","TOEFL Score","University Rating","SOP","LOR ","CGPA",
    print("hello")
    response_scoring = requests.post('https://us-south.ml.cloud.ibm.com/ml/v4/deployments/2872d436-41b9-47f3-bc57
    headers={'Authorization': 'Bearer ' + mltoken})
    print("scoring response")
    pred=response_scoring.json()
    print(pred)
    output=pred['predictions'][0]['values'][0][0]

    if output > 0.5:
        return redirect(url_for('chance', percent=output*100))
    else:
        return redirect(url_for('no_chance', percent=output*100))

@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])

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

TESTING

TEST CASES:

TC No.	Test Case Description	Expected Result	Status
1.	All Python files to be loaded and read	All should execute without error	Success
2.	.csv File is being read properly	Cell should run without any error	Success
3.	Is the model running accurately accuracy rate >= 75%	Model accuracy should be above 75%	Success
4.	Is model being integrated properly	Application should run without errors	Success
5.	Is "chance of admission" output page being generated	Output page "chance of admission" displayed if follws the certain criteria	Success
6.	Empty fields in form	Error Message: "This field needs to be filled"	Success
7.	Speed of loading of Input fom	All pages should load within 5 sec	Success
8.	Speed of loading of Prediction from	Page should load within 5 seconds	Success
9.	Pages resize as per window size	Page should be responsive	Success
10.	App compatible with Microsoft Edge Browser	App should run successfully	Success
11.	App compatible with Google Chrome	App should run successfully	Success
12.	App compatible with Mozilla Firefox	App should run successfully	Success

USER ACCEPTANCE TESTING

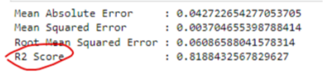
TC No.	Test Case Description	Expected Result	Status
1.	All Python files to be loaded and read	All should execute without error	Success
2.	.csv File is being read properly	Cell should run without any error	Success
3.	Is the model running accurately accuracy rate >= 75%	Model accuracy should be above 75%	Success
4.	Is model being integrated properly	Application should run without errors	Success
5.	Is "chance of admission" output page being generated	Output page "chance of admission" displayed if follws the certain criteria	Success
6.	Empty fields in form	Error Message: "This field needs to be filled"	Success
7.	Speed of loading of Input form	All pages should load within 5 sec	Success
8.	Speed of loading of Prediction form	Page should load within 5 seconds	Success
9.	Pages resize as per window size	Page should be responsive	Success
10.	App compatible with Microsoft Edge Browser	App should run successfully	Success
11.	App compatible with Google Chrome	App should run successfully	Success
12.	App compatible	App should run	Success

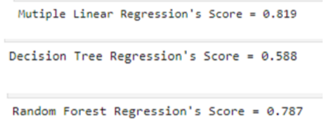
	with Mozilla Firefox	successfully	

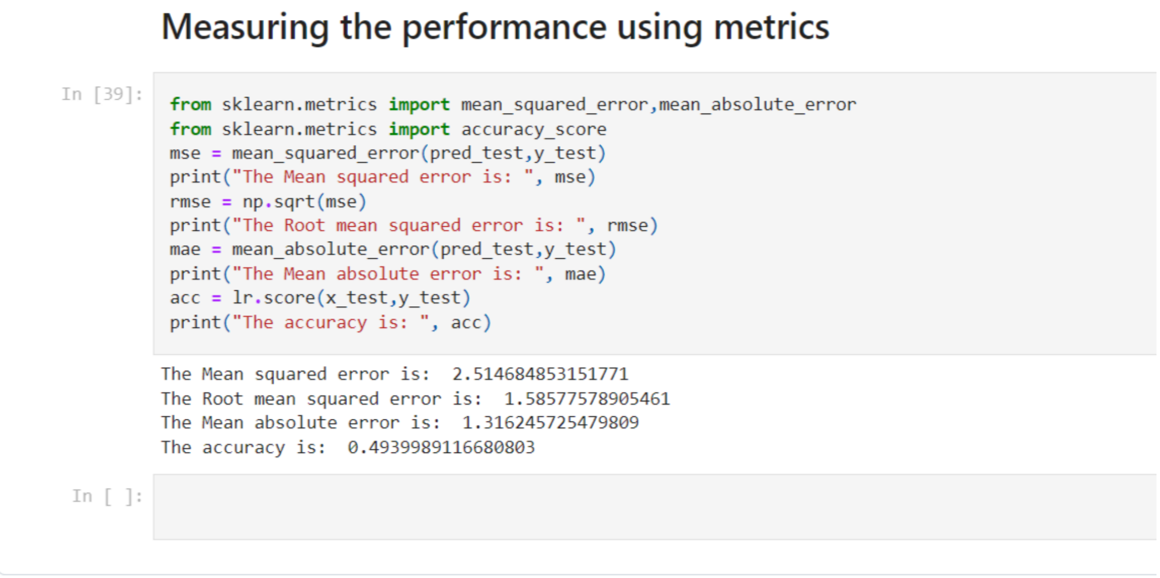
RESULTS:

PERFORMANCE METRICS:

S.No.	Parameter	Values	Screenshot

1.	Metrics	**Regression Model:**
		MAE - , MSE - , RMSE - , R2 score -
		
		Classification Model:
		Confusion Matrix - , Accuray Score- & Classification Report -
			
			`Mean Absolute Error      : 0.042722654277053705`
			`Mean Squared Error       : 0.003704655398788414`
			`Root Mean Squared Error  : 0.06086588041578314`
			`R2 Score                 : 0.8188432567829627`

2.	Comparing R2 scores for different regression models	Multiple Linear Regression, Decision Tree Regression, Random Forest Regression	
			`Mutiple Linear Regression's Score = 0.819`
			`Decision Tree Regression's Score = 0.588`
			`Random Forest Regression's Score = 0.787`



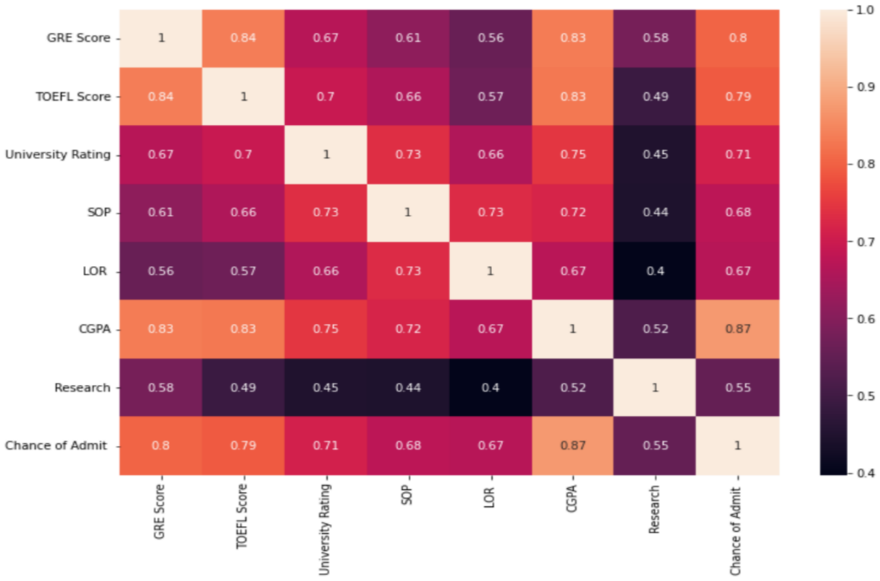
Measuring the performance using metrics

In [39]:

```
from sklearn.metrics import mean_squared_error,mean_absolute_error
from sklearn.metrics import accuracy_score
mse = mean_squared_error(pred_test,y_test)
print("The Mean squared error is: ", mse)
rmse = np.sqrt(mse)
print("The Root mean squared error is: ", rmse)
mae = mean_absolute_error(pred_test,y_test)
print("The Mean absolute error is: ", mae)
acc = lr.score(x_test,y_test)
print("The accuracy is: ", acc)
```

```
The Mean squared error is:  2.514684853151771
The Root mean squared error is:  1.58577578905461
The Mean absolute error is:  1.316245725479809
The accuracy is:  0.4939989116680803
```

In [ ]:



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 redundant and inconsistent data.
* Data is easily available.

DISADVANTAGES:

- A live internet connection is necessary.
- If data is entered Incorrectly, the system will produce inaccurate results.

FUTURE WORK:

Future work on the project might include taking into account aspects that haven't been considered before, like the proportion of seats for international students. Additional criteria, such as extracurricular accomplishments, leadership roles held, work experience, etc., can be added as metrics for the model.

CONCLUSION:

In this project this problem has been addressed by modeling a recommender system based on various classification algorithms. To predict the best university for the particular student his/her GPA score, GRE score, TOEFL score has been used predict best university.

APPENDIX:

Github link: https://github.com/IBM-EPBL/IBM-Project-24348-1659941722.git

Demo Link: https://www.youtube.com/embed/MJTMkhKls3w