PROJECT REPORT ON

UNIVERISTY ADMIT ELIGIBILITY PREDICTOR

TEAM ID: PNT2020TMID04288

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1. INTRODUCTION

1.1 OVERVIEW

The project uses a machine-learning model to estimate, using information like marks and other details, whether the user is qualified for admission to the rating universities that have been chosen. The algorithm is designed to display the user's percentage likelihood of admission when they enter information such their GRE, TOEFL, university rating, SOP, LOR, CGPA, and research scores. The user is given access to a user interface (UI) (Web-based application) where they can enter the above-mentioned information for prediction. The key benefit of this is that the user may use this program to estimate eligibility and possibility of admission rather than going through the time-consuming procedure of manually determining eligibility for university admission.

1.2 PURPOSE

The goal of this project is to easily estimate an applicant's eligibility for admission to a rated university using a user interface and the provided user information (GRE Score, TOEFL Score, University Rating, SOP, LOR, CGPA, Research). Additionally, this eliminates the chance of human error.

2. LITERATURE SURVEY

2.1 EXISTING PROPLEM

Previous studies in this field used the Naive Bayes algorithm to assess the likelihood that a student will be admitted to a particular university, but their main flaw was that they failed to take into account all the variables that would affect admission, such as TOEFL/IELTS, SOP LOR, and undergraduate GPA.

An evaluation network for the applications submitted by university's international students has been built using the Bayesian Networks Algorithm. By comparing prospective students' scores to those of university students currently enrolled, this model was created to predict how well they will do. On the basis of various student scores, the model therefore projected whether the prospective student should be admitted to the university. This method won't be as accurate because comparisons are only performed with students who were accepted into the universities and not with those whose admittance was denied.

2.2 REFERENCES

1. https://www.researchgate.net/publication/343517433_Research_on_Prediction_of_College_Students'_Performance_Based_on_Support_Vector_Machine
2. https://www.researchgate.net/publication/348433004_Graduate_Admission_Prediction_Using_Machine_Learning
3. https://www.researchgate.net/publication/341740217_ENGINEERING_TECHNOLOGY_ADMISSION_ANALYSIS_AND_PREDICTION
4. https://towardsdatascience.com/introduction-to-modelling-tabular-data-predicting-a-students-chance-of-gaining-admission-using-ml-3a440f709c71
5. https://www.researchgate.net/publication/345391208_University_Admissions_Predictor
6. https://www.researchgate.net/publication/333064921_Predictive_Models_of_Student_College_Commitment_Decisions_Using_Machine_Learning
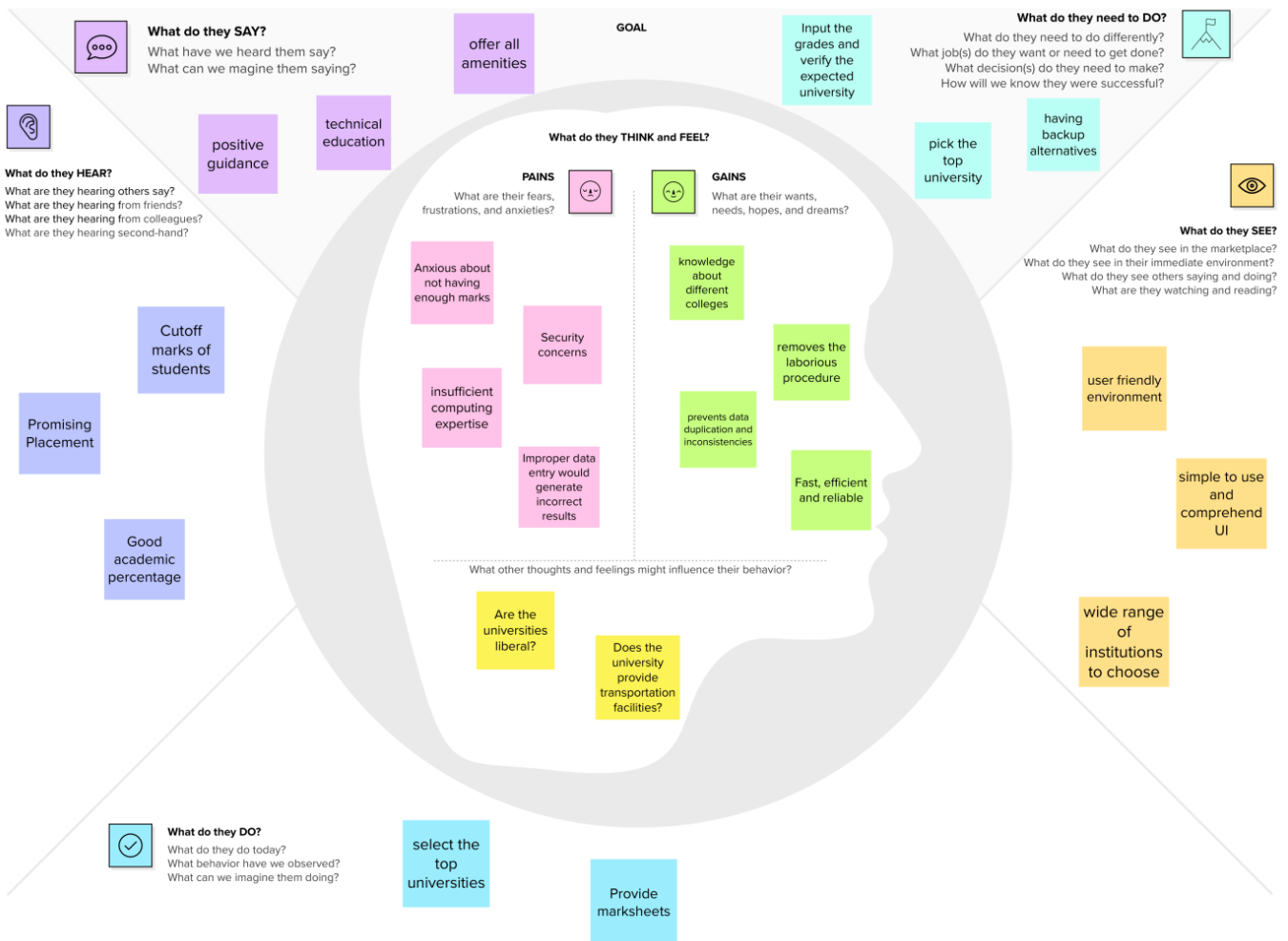
2.3 REFERENCES

Finding an appropriate college for their future study is the students' biggest challenge. For many students, choosing which college to apply to is a difficult decision. Our method suggests universities in the order of the student's selection after comparing the student's information with historical admissions data.

3. IDEATION AND PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS

An empathy map is a collaborative visualization that is used to express what we know about a particular type of user. It externalizes user knowledge to facilitate decision-making and to foster a common understanding of user demands.

Traditional empathy maps are split into 4 quadrants (Says, Thinks, Does, and feels), with the user or persona in the middle. Empathy maps provide a glance into who a user is as a whole and are not chronological or sequential.

What do they SAY?
What have we heard them say?
What can we imagine them saying?

What do they HEAR?
What are they hearing others say?
What are they hearing from friends?
What are they hearing from colleagues?
What are they hearing second-hand?

What do they need to DO?
What do they need to do differently?
What job(s) do they want or need to get done?
What decision(s) do they need to make?
How will we know they were successful?

What do they SEE?
What do they see in the marketplace?
What do they see in their immediate environment?
What do they see others saying and doing?
What are they watching and reading?

What do they DO?
What do they do today?
What behavior have we observed?
What can we imagine them doing?

GOAL

offer all amenities

technical education

positive guidance

Input the grades and verify the expected university

pick the top university

having backup alternatives

What do they THINK and FEEL?

PAINS
What are their fears, frustrations, and anxieties?

GAINS
What are their wants, needs, hopes, and dreams?

Cutoff marks of students

Promising Placement

Good academic percentage

Anxious about not having enough marks

Security concerns

insufficient computing expertise

Improper data entry would generate incorrect results

knowledge about different colleges

removes the laborious procedure

prevents data duplication and inconsistencies

Fast, efficient and reliable

user friendly environment

simple to use and comprehend UI

wide range of institutions to choose

What other thoughts and feelings might influence their behavior?

Are the universities liberal?

Does the university provide transportation facilities?

select the top universities

Provide marksheets

3.2 IDEATION AND BRAINSTROMING

Brainstorming is a method design teams use to generate ideas to solve clearly defined design problems. In controlled conditions and a free-thinking environment, teams approach a problem by such means as "How Might We" questions. They produce a vast array of ideas and draw links between them to find potential solutions.

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 select the top university?

PROBLEM
How might we forecast the likelihood of admission to the university?

PROBLEM
How might we Create a predictor of a student's eligibility for admission to a university using their grades?

Key rules of brainstorming
To run an smooth and productive session

- Stay in topic.
- Defer judgment.
- Go for volume.
- Encourage wild ideas.
- Listen to others.
- If possible, be visual.

2

Brainstorm

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

⏱ 10 minutes

Shubhadeepa Sahu

- Investigate several university admissions procedures
- Select the user inputs that will be provided
- Assist students in selecting the appropriate college
- Verify the data gathered about the universities
- Remove any potential data redundancy from the model
- Show a video tutorial explaining how the model works

Sharmila L

- Ensure the student is a legitimate applicant
- Must motivate applicants even further if they are not qualified
- Make sure to verify the course duration
- It is necessary to check the university's amenities.
- The university-related information should be accurate.
- Must provide details about student clubs

Rufina B

- They can select the closest college location
- Graph representing predictability will be provided
- College rank and student cutoff are contrasted
- There must be enough reviews of the institution
- Maintain the privacy of the applicant's information
- inform students about university entrance tests
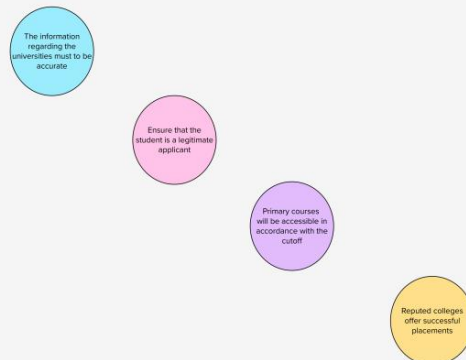
Yuva Chaitanya M

- Authentication with a security intent
- List placement records of college
- Share details on the cutoff for the previous year.
- Information on transportation infrastructure
- implement data visualisation tools
- Check out the university's scholarship offerings

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

- The information regarding the universities must be accurate
- Ensure that the student is a legitimate applicant
- Primary courses will be accessible in accordance with the cutoff
- Reputed colleges offer successful placements

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**

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.)

Share details on the cutoff for the previous year.

Must motivate applicants even further if they are not qualified

implement data visualisation tools

Assist students in selecting the appropriate college

Ensure the student is a legitimate applicant

Select the user inputs that will be provided

Authentication with a security intent

Verify the data gathered about the universities

Graph representing predictability will be provided

Maintain the privacy of the applicant's information

It is necessary to check the university's amenities.

inform students about university entrance tests

Investigate several university admissions procedures

College rank and student cutoff are contrasted

List placement records of college

There must be enough reviews of the institution

The university-related information should be accurate.

Remove any potential data redundancy from the model

Make sure to verify the course duration

Show a video tutorial explaining how the model works

Information on transportation infrastructure

They can select the closest college location

Check out the university's scholarship offerings

Must provide details about student clubs

3.3 PROPOSED SOLUTION

The aim of the proposed system is to address the limitations of the current system. The requirements for the system have been gathered from the defects recorded in the past and also based on the feedback from users of previous metrics tools.

Following are the objectives of the proposed system:

• Reach to geographically scattered student.

- Reducing time in activities
- Paperless admission with reduced man power
- Operational efficiency

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	✓ Students frequently worry about their prospects of getting into university, which causes them to feel frustrated and anxious. ✓ They seek assistance from various educational consultancies to help them secure admission in the universities based on their profile because they are unaware of the procedures, requirements, and specifics of the institutions they wish to attend. ✓ In return, the students are expected to pay a significant amount as a consultancy fee.
2.	Idea / Solution description	✓ The system's major objective is to increase performance by automating organizational procedures and achieving the concept of paperless admission. ✓ Based on a variety of factors, including university ranking, the GRE, academic performance, etc., the model will accurately forecast if a student will be admitted to the institution of their choice. ✓ The prediction model will be developed to be effective and efficient with the use of machine learning algorithms like KNN, linear regression, etc.
3.	Novelty / Uniqueness	✓ The outcomes of the forecast will be represented visually in the form of clear charts or graphs that include the previous score or university cut-off. ✓ Additionally, the online application will give feedback on the aspects where the candidate falls short so that he may strengthen those areas. ✓ Apart from displaying all potential qualified universities, the model will also display any additional admission criteria. ✓ The website can include a variety of amenities that are accessible at the university and give directions to the institution where it is located.

4.	Social Impact / Customer Satisfaction	✓ The direct linkage between students and institutions lowers the cost of consulting services. ✓ With comprehensive GRE, TOEFL, and other exam preparation resources, our model serves as a guide for users. ✓ By suggesting institutions where they have the highest chance of being admitted, it also assists them in reducing the number of applications they submit, helping them save money on application costs. ✓ Our system manages every aspect of a student's registration for a course and maintains the data in a useful, simply accessible state.
5.	Business Model (Revenue Model)	✓ Universities face enormous pressure to accept more students and guarantee student success. Predictive models can assist them reduce the stress of accepting new pupils and increase productivity, which will help them cope with this pressure. ✓ From a business perspective, paperless work, labour savings, a completely upgradeable computerization process, simple admittance, and a lucrative strategy in choosing the ideal applicant for the university. ✓ The online application could include advertisements for various colleges to generate revenue through nodes. ✓ In the future, a unique premium plan may be developed so that students can engage in direct video chats with professors and university graduates.
6.	Scalability of the Solution	✓ Using several classification algorithms, the student's GPA, GRE score, and TOEFL score will be considered as attributes to determine the best university for that student. ✓ In the future, we will include one faculty member from each institution to help students with questions about the school, the course, etc. We could include a chat option in this app as well. ✓ The model may be updated to keep up with the most recent qualifying requirements and take into account university-specific exams. ✓ As a result, the architecture of this system is largely scalable.

3.3 PROBLEM SOLUTION FIT

Project Title: University Admit Eligibility Predictor   **Project Design Phase-I - Solution Fit Template**   **Team ID: PNT2022TMID04288**

Define CS, fit into CC

1. CUSTOMER SEGMENT(S)   `CS`

Who is your customer?
i.e. working parents of 0-5 y.o. kids

- High Schoolers
- Under Graduates
- Lateral Entries
- Post Graduates
- An education consultancy provider tied with colleges to help students in admission.

6. CUSTOMER CONSTRAINTS   `CC`

What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices.

- Customers may choose not to use the predictor if they do not believe in its accuracy or dependability.
- Some users may decide not to utilise the predictor out of worry about data exploitation as users would be required to furnish the model with sensitive data.
- Financial Limitations - unable to afford hefty consulting services.
- Unaware about each university's eligibility criteria and in confusion about where to apply.

5. AVAILABLE SOLUTIONS   `AS`

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

Available solutions
- Online eligibility prediction applications / websites / tools.
- Education consultancy connected with universities.
- Help from Friends/ alumni of the university or neighbours.

Cons
- Expensive services
- Unreliable prediction with varied output for same input.
- Unreadable graphic presentation

Explore AS, differentiate

Focus on J&P, tap into BE, understand RC

2. JOBS-TO-BE-DONE / PROBLEMS   `J&P`

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

- Customers' faith in our model must be maintained by providing them with the highest level of data security.
- The students deal with serious issues including broken websites, connectivity issues, online payment issues, system requirements, transaction costs, and a lack of customer service, etc.
- The criteria for university admission should regularly be updated.
- Provide the relevant information on the exams and required score.
- Lessen the suffering of students who do not fulfil the eligibility requirements for their selected universities.

9. PROBLEM ROOT CAUSE   `RC`

What is the real reason that this problem exists?
What is the back story behind the need to do this job?
i.e. customers have to do it because of the change in regulations.

- If the obtained data is determined to be inaccurate or not enough parameters are taken into account to determine eligibility, the predictor's reliability may be impacted.
- The students deal with serious issues including broken websites, connectivity issues, online payment issues, system requirements, transaction costs, and a lack of customer service, etc.
- Even if a student qualifies for one institution, they could not qualify for the university in the location they choose.
- The administration of the online admissions procedures must put a priority on giving students and users regular follow-up, updates, and customer service.

7. BEHAVIOUR   `BE`

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)

- From the customer's perspective, the predictor's accuracy is important since users would base their admission decisions on its predictions.
- No training is necessary to access the websites because the entire procedure is highly dynamic.
- In order to improve their chances of being accepted into a university, the students engage in competitive and entrance tests.

Focus on J&P, tap into BE, understand RC

Identify strong TR & EM

3. TRIGGERS   `TR`

What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.

- The user's actual scores and the necessary scores are compared.
- Incorrect data input might result in inaccurate findings.
- Active internet access is necessary.

4. EMOTIONS: BEFORE / AFTER   `EM`

How do customers feel when they face a problem or a job and afterwards?
i.e. lost, insecure > confident, in control - use it in your communication strategy & design.

Before
- There are lots of questions in users mind about the complete process.

After
- Since they have complete confidence in the predictor, users would feel totally in charge of the admissions process.

10. YOUR SOLUTION   `SL`

If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality.
If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.

- Using the data gathered, create a prediction and make sure it's correct and reliable. Additionally, ensure the security and safety of the user data is acquired.
- To make understanding easier, offer meaningful visual graphs.
- The prediction model will be developed to be effective and efficient with the use of machine learning algorithms like KNN, linear regression, etc.
- Based on a variety of factors, including university ranking, the GRE, academic performance, etc., the model will accurately forecast if a student will be admitted to the institution of their choice.

8. CHANNELS of BEHAVIOUR   `CH`

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

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

Online
- Customers may search for reliable eligibility predictors online and give them ratings based on how much they like using them.

Offline
- Students would talk about these predictors in their peer groups, and if they found one that was reliable enough, they would let others know.

Identify strong TR & EM

4. REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENT

Functional requirements specify what a system should be able to do through computations, technical details, data manipulation and processing, and other specialized functions. Use cases, which are used to represent behavioral requirements, explain all the instances in which the system makes use of the functional requirements.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Users must be able to log into their accounts using the system by entering their email and password in order to prevent unauthorised access to the system.
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Management of Data	This application gives the user the ability toChange, Read, Update, and Delete (CRUD) data.
FR-4	Process for Managing Web Services	The process of registering a web client to offer Single sign-on(SSO) or member data transfer
FR-5	Data Maintenance	The suggested application system manages the archiving, retrieval, and preservation of historical data.
FR-6	User Deliverables	Submission of pertinent documentation, including the necessary entrance exam score report, a curriculum vitae, a personal information, and a letter of recommendation
FR-7	User Account	Dashboards for applicants: Personal data, course and skill requirements, and percentage

4.2 NON - FUNCTIONAL REQUIREMENT

A non-functional requirement (NFR) is a requirement in systems engineering and requirements engineering that specifies criteria that can be used to judge the operation of a system rather than specific behaviors.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	➤ The system must have a logical interface in order to be user-friendly and accelerate common procedures. ➤ Users cannot enter their information incorrectly more than 10% of the time on the checkout page.
NFR-2	**Security**	➤ Student record handover procedures between institutions as well as authorization access situations and definitions. ➤ Use specific cryptography methods. ➤ Communication must be restricted while the application is validating the user or licence.

NFR-3	**Reliability**	➢ By using backup techniques and tactics, data corruption may be prevented.
		➢ All user variable data will be committed to the database at the time of entry.
NFR-4	**Performance**	➢ Each student will be given a maximum of 10 minutes, thus accessing the database should be done at a fair rate.
		➢ The availability results of the requested college should be sent to the student in little more than two seconds, and data retrieval should be accurate.
NFR-5	**Availability**	➢ The user should always have simple access to the system at all times.
		➢ A replacement page will be shown in the event when the hardware or database malfunctions, and the data folder should be accessed to retrieve the database.
NFR-6	**Scalability**	➢ Identifies the maximum workload at which the system will still function properly.
		➢ Focuses on measuring the system's response time under different loads.

5. PROJECT DESIGN

5.1 DATA FLOW DIAGRAMS

A Data Flow Diagram (DFD) is a traditional visual representation of a system's information flows. A neat and clear DFD can graphically depict the appropriate amount of system requirement. It demonstrates how data enters and exits the system, what changes the data, and where data is stored.
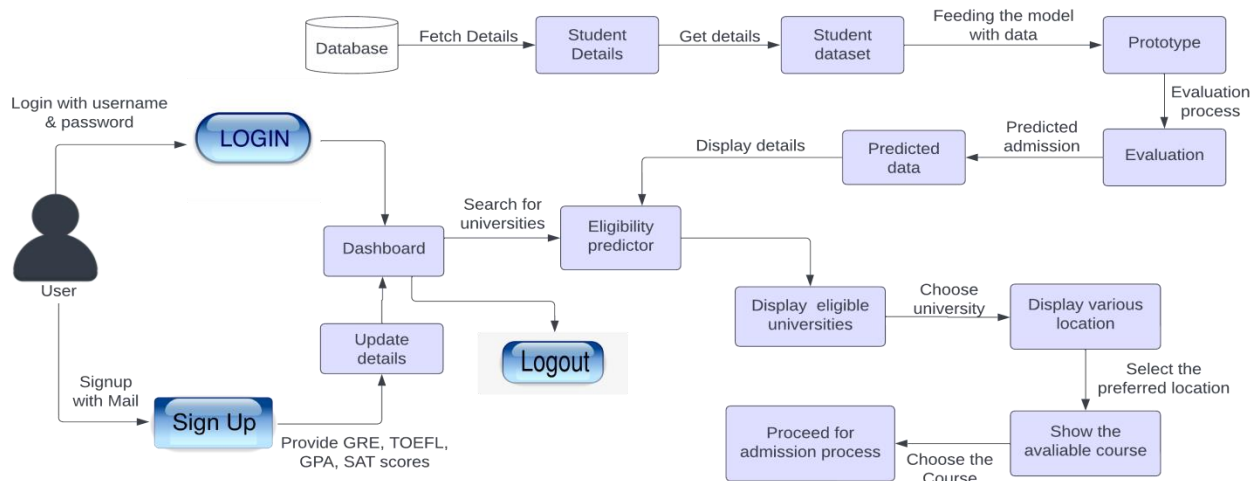
5.2 SOLUTION AND TECHNICAL ARCHITECTURE

Solution Architecture:

A solution architecture (SA) is an architectural description of a specific solution. SAs combine guidance from different enterprise architecture viewpoints (business, information and technical), as well as from the enterprise solution architecture (ESA).
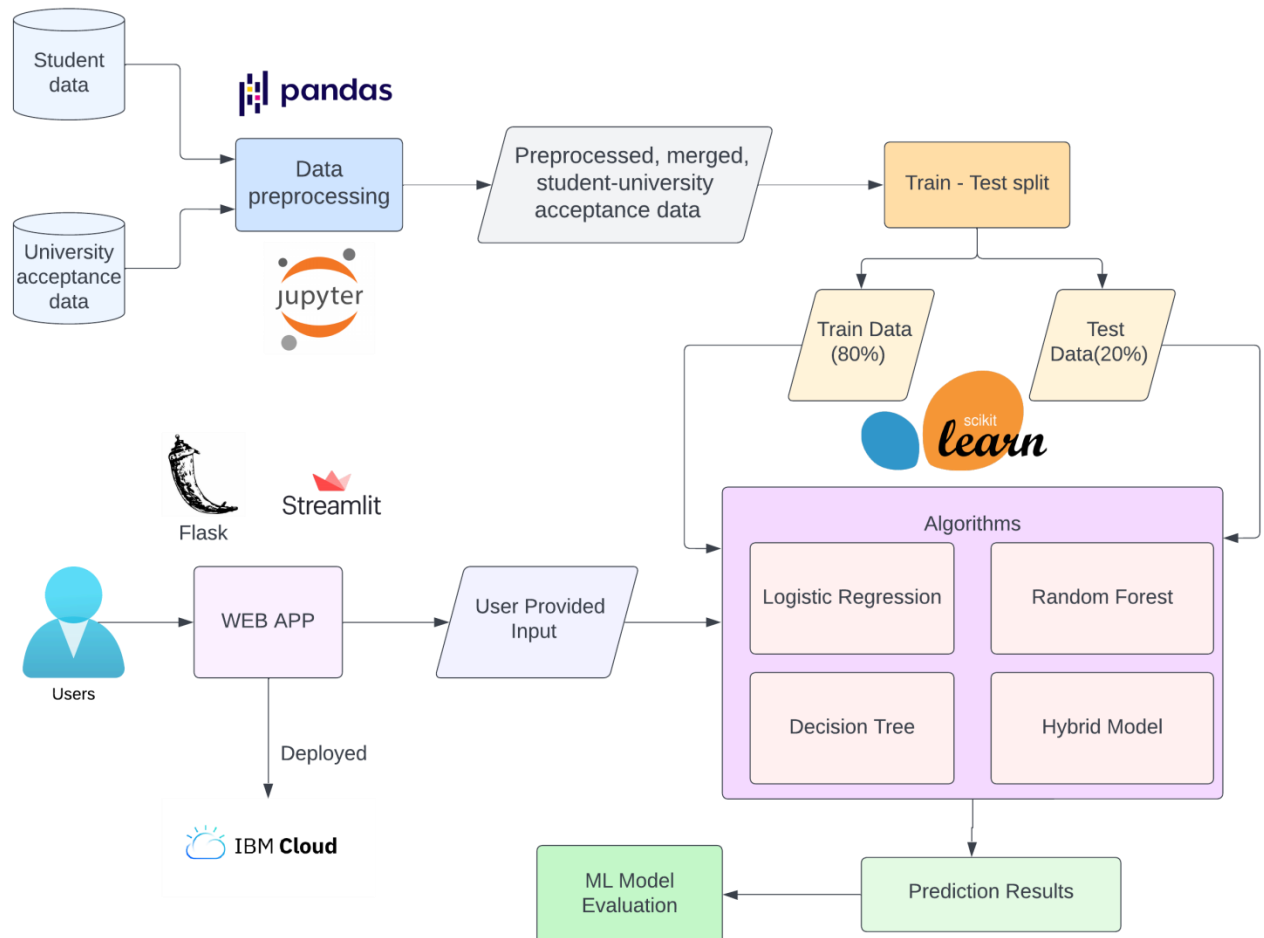
Technical Architecture:

Technical architecture (TA) is a type of information technology architecture used to design computer systems. It entails creating a technical blueprint for the arrangement, interaction, and interdependence of all elements in order to meet system-relevant requirements.
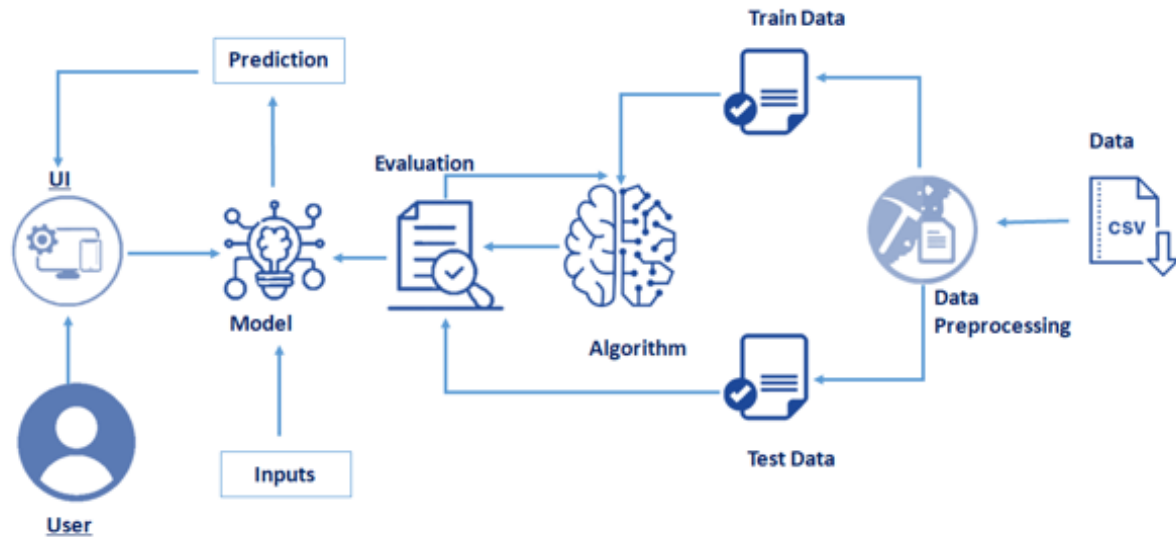
5.3 USER STORIES

A user story is an informal, general explanation of a software feature written from the end u ser's or customer's point of view. A user story's purpose is to articulate how a piece of work will provide a specific value to the customer.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Landing page	USN-1	As a user, I can view the details about the university	I can access the university landing page	Medium	Sprint-1
		USN-2	As a user, I can view the latest news about the university	I can access the latest news	Medium	Sprint-1
		USN-3	As a user, I can fill the contact form for queries	I can fill and submit the contact form	Low	Sprint-2
		USN-4	As a user, I can see the social media profiles of the university	I can reach out to them via social media	Medium	Sprint-1
		USN-5	As a user, I can see testimonials of students who graduated from the university	I can access the testimonials	Medium	Sprint-1
	Admissions	USN-6	As a user, I can see the previous year cut- off marks	I can download the previous year cut-off details	High	Sprint-2
		USN-7	As a user, I can read about proud alumni of the university	I can access the details of alumni of the university	Medium	Sprint-2
		USN-8	As a user, I can predict my eligibility for admission at the university	I can get result as either eligible/not eligible	High	Sprint-2
	Courses offered	USN-9	As a user, I can see the courses offered by the university for PG students	I can access the course details	Medium	Sprint-3

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
	Events	USN-10	As a user, I can check 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 can download and read e- books relating to visa formalities	I can download the e-books	High	Sprint-3
	Scholarship	USN-12	As a user, I shall find resources regarding scholarship availability	I can access scholarship resources	High	Sprint-4
	Test prep materials	USN-13	As a user, I can 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 shall 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 can update the list of activities to be hosted	I can check if the update is reflected or not	Medium	Sprint-4

6. PROJECT PLANNING AND SCHEDULING

6.1 SPRINT PLANNING AND ESTIMATION

In Scrum Projects, Estimation is done by the entire team during Sprint Planning Meeting. The objective of the Estimation would be to consider the User Stories for the Sprint by priority and by the Ability of the team to deliver during the Time Box of the sprint.

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Landing page	USN-1	As a user, I can view the details about the university	2	High	Shubhadeepa Sahu
Sprint-1		USN-2	As a user, I will view the latest news about the university	1	High	Sharmila L
Sprint-2		USN-3	As a user, I can fill the contact form for queries	2	Low	Rufina B
Sprint-1		USN-4	As a user, I can see the social media profiles of the university	2	Medium	Modi Yuva Chaitanya
Sprint-1		USN-5	As a user, I can see testimonials of students who graduated from the university	1	Medium	Sharmila L
Sprint-2	Admission	USN-6	As a user, I can see the previous year cut off marks	2	High	Shubhadeepa Sahu

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-2		USN-7	As a user, I can read about proud alumni of the university	1	Medium	Modi Yuva Chaitanya
Sprint-2		USN-8	As a user, I can predict my eligibility for admission at the university	2	High	Sharmila L
Sprint-3	Courses offered	USN-9	As a user, I can see the courses offered by the university for PG students	1	Medium	Rufina B
Sprint-3	Events	USN-10	As a user, I can check various technical events about to happen in the university	2	Low	Shubhadeepa Sahu
Sprint-3	E-books	USN-11	As a user, I can download and read ebooks relating to visa formalities	2	High	Rufina B
Sprint-4	Scholarship	USN-12	As a user, I shall find resources regarding scholarship availability	1	High	Modi Yuva Chaitanya
Sprint-4	Test prep materials	USN-13	As a user, I can download and read GRE,TOEFL test preparation materials	1	Medium	Sharmila L
Sprint-4	Landing page	USN-14	As an administrator, I shall update the news about the university	30	Medium	Rufina B
Sprint-4	Events	USN-15	As an administrator, I can update the list of activities to be hosted	15	Medium	Shubhadeepa Sahu

6.2 SPRINT DELIVERY SCHEDULE

A sprint schedule is a document that details the sprint planning process from start to finish.

It is one of the first steps in the agile sprint planning process, and it necessitates thorough

research, planning, and communication.

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	20	05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	15	11 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	17 Nov 2022
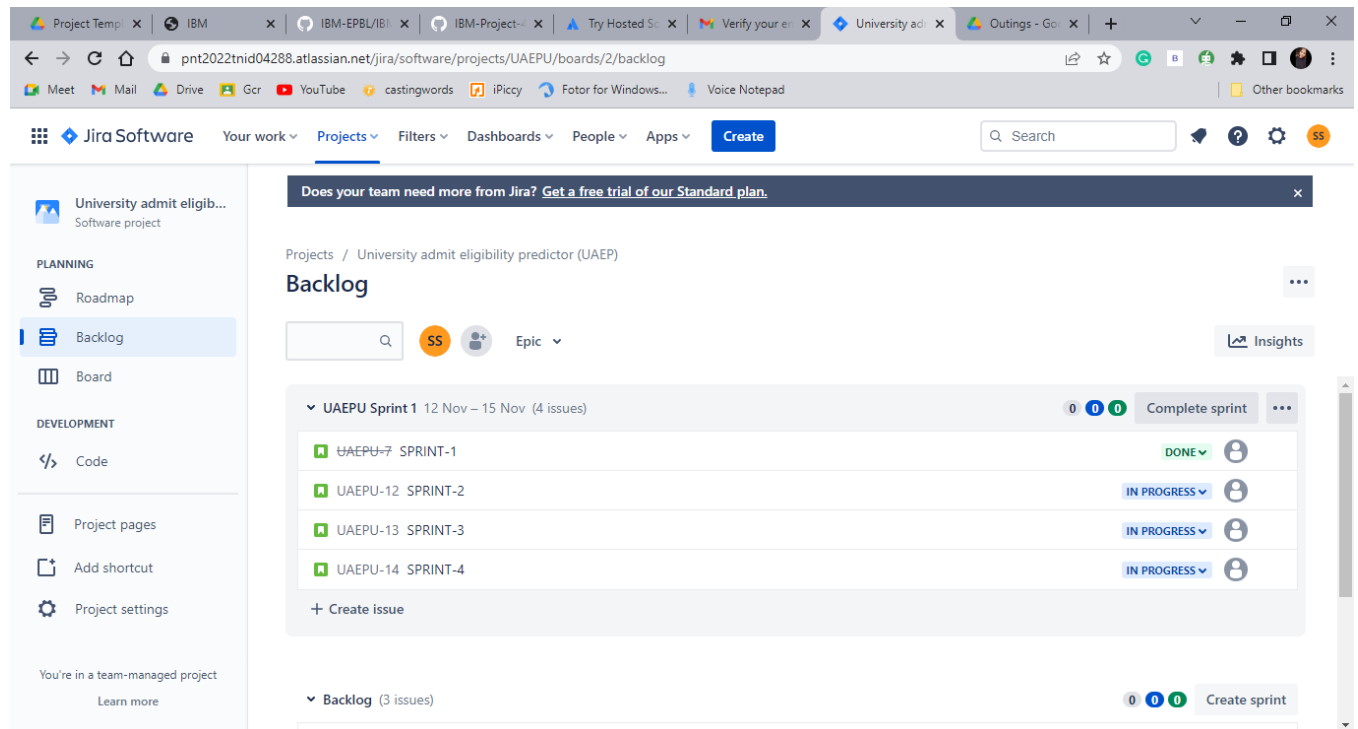
6.3 REPORTS FROM JIRA

Jira assists teams in planning, assigning, tracking, reporting, and managing work and brings together teams for everything from agile software development to customer support for startups and enterprises. Jira Software, the #1 tool for agile teams, helps software teams build better.

ROADMAP:

BACKLOG:

BOARD:

7. CODING AND SOLUTIONING

7.1 FEATURE 1

- We have updated the website image, which can change the visual appearance of the website and can be a very effective way to refresh the content above the fold.
- It aids in attracting attention and directing the user's line of sight.
- A basic requirement for the user interface is clear and consistent navigation.
- If it proves difficult, most users will not want to waste their time attempting to figure it out.
- Simple to comprehend
- Excellent design and functionality
- Site visitors are always pressed for time. Make them work for information, not for it. User Experience is critical in assisting visitors to use, understand, and stay on your website.
- Search and social media optimization
- Images allow for the identification of features that would otherwise be difficult to detect.

Index.html

```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/style.css">
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-Zenh87qX5JnK2Jl0vWa8Ck2rdkQ2Bzep5
    <script type="text/javascript" src="../static/js/script.js" async></script>
    <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="/">
                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+gxIOqMEjwtxJY7qPCqsdltbNJu
</body>
</html>
```

7.2 FEATURE 2

- The student has to enter the marks such as GRE, TOEFL, CGPA, etc and click calculate to view the results page.
- If the student has at least the minimum marks, he/ she has a chance to enter the university of their choice.
- If the student has low marks, they have no chance to get into the university.

Chance.html

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

{% block body %}

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

        <div class="card" style="...">
            <img src="..\static\images\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 %}
```

Nochnace.html

```
Refactor  Run  Tools  VCS  Window  Help        flaskProject - ...\templates\nochance.html
```

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

<div class="container text-center p-4">
    <div class="d-flex justify-content-center">
        <div class="card" style="...">
            <img src="..\static\images\nochance.png" 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 %}
```

7.3 DATABASE SCHEMA

Serial No.	GRE Score	TOEFL Sco	University	SOP	LOR	CGPA	Research	Chance of Admit
1	337	118	4	4.5	4.5	9.65	1	0.92
2	324	107	4	4	4.5	8.87	1	0.76
3	316	104	3	3	3.5	8	1	0.72
4	322	110	3	3.5	2.5	8.67	1	0.8
5	314	103	2	2	3	8.21	0	0.65
6	330	115	5	4.5	3	9.34	1	0.9
7	321	109	3	3	4	8.2	1	0.75
8	308	101	2	3	4	7.9	0	0.68
9	302	102	1	2	1.5	8	0	0.5
10	323	108	3	3.5	3	8.6	0	0.45
11	325	106	3	3.5	4	8.4	1	0.52
12	327	111	4	4	4.5	9	1	0.84
13	328	112	4	4	4.5	9.1	1	0.78
14	307	109	3	4	3	8	1	0.62
15	311	104	3	3.5	2	8.2	1	0.61
16	314	105	3	3.5	2.5	8.3	0	0.54
17	317	107	3	4	3	8.7	0	0.66
18	319	106	3	4	3	8	1	0.65
19	318	110	3	4	3	8.8	0	0.63
20	303	102	3	3.5	3	8.5	0	0.62
21	312	107	3	3	2	7.9	1	0.64
22	325	114	4	3	2	8.4	0	0.7

8. TESTING

8.1 TEST CASES

Test Case ID	Feature Type	Component	Test Scenario	Pre-Requisite	Steps To Execute	Test Data	Expected Result	Status	TC for Automation (Y/N)	Bug ID	Executed By
LoginPage_TC_001	UI	Index	Verify the UI elements in home page		1.Enter URL with link 2.Enter the Scores 3.Click the Predict button	http://127.0.0.1:5000/home	Working as Expected	Pass			
LoginPage_TC_002	Functional	Chance	Verify whether student is eligible for admission		1.As per Score it is Predicted 2.To get above 50% 3.The chance is shown	http://127.0.0.1:5000/chance/74.41832217405506	Working as Expected	Pass			
LoginPage_TC_002	Functional	No Chance	Verify whether student doesn't have chance for admission		1.As per score it is predicted 2.Below 50% 3.Shows Low chance	http://127.0.0.1:5000/nochance/48.15254888658205	Working as Expected	Pass			

8.2 USER ACCEPTANCE TESTING

Defect analysis

This report shows the number of bugs that have been resolved or closed at each severity level, as well as how they were resolved.

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	4	7	2	4	17
Duplicate	3	2	2	0	7
External	0	0	4	0	4
Fixed	6	2	5	4	17
Not Reproduced	2	0	0	1	3
Skipped	0	2	0	1	3
Won'tFix	0	0	3	1	4
Totals	15	13	16	11	55
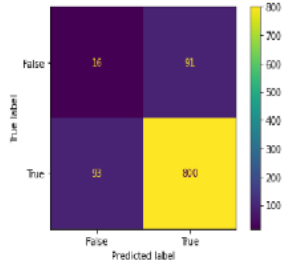
Test case analysis

This report displays the number of test cases that passed, failed, or went untested.

Section	TotalCases	Not Tested	Fail	Pass
PrintEngine	4	0	0	4
ClientApplication	2	0	0	2
Security	8	0	0	8
OutsourceShipping	2	0	0	2
ExceptionReporting	6	0	0	6
FinalReportOutput	32	0	0	32
VersionControl	5	0	0	5

9. RESULTS

9.1 PERFORMANCE MATRICS

S.No.	Parameter	Values	Screenshot

1.	Metrics	**Regression Model:** MAE - 0.04555 MSE - 0.00426 RMSE – 0.06527 , R2 score – 0.71683
		
		Classification Model: Confusion Matrix - Accuracy Score -0.82 Classification Report -
			Mean Squared Error (MSE)
			
			`from sklearn.metrics import mean_squared_error, r2_score`
			`mse = mean_squared_error(pred_test,y_test)`
			
			`[25] mse`
			
			0.004260810050671112
			
			Root Mean Squared Error (RMSE)
			
			`[26] rmse = np.sqrt(mse)`
			
			`[27] rmse`
			
			0.06527488070208257
			
			R2 Score
			
			`[28] r2_score(pred_test, y_test)`
			
			0.716831867909245
			
			Mean Absolute Error (MAE)
			
			`[29] from sklearn.metrics import mean_absolute_error`
			`mean_absolute_error(pred_test, y_test)`
			
			0.04555243196630539
			
			Confusion Matrix: False-False 16, False-True 91, True-False 93, True-True 800

			In [44]: Accuracy = metrics.accuracy_score(actual, predicted)
			Accuracy
			
			Out[44]: 0.816
			
			Classification Report
			
			In [56]: from sklearn.metrics import classification_report
			print(classification_report(actual, predicted))
			
			          precision recall f1-score support
			
			     0 0.15 0.15 0.15 107
			     1 0.90 0.90 0.90 893
			
			  accuracy 0.82 1000
			 macro avg 0.52 0.52 0.52 1000
			weighted avg 0.82 0.82 0.82 1000

2.	Tune the Model	Hyperparameter Tuning - Validation Method –	**2.Stratified K-Fold** In [63]: from sklearn import datasets from sklearn.tree import DecisionTreeClassifier from sklearn.model_selection import StratifiedKFold, cross_val_score X, y = datasets.load_iris(return_X_y=True) clf = DecisionTreeClassifier(random_state=42) sk_folds = StratifiedKFold(n_splits = 5) scores = cross_val_score(clf, X, y, cv = sk_folds) print("Cross Validation Scores: ", scores) print("Average CV Score: ", scores.mean()) print("Number of CV Scores used in Average: ", len(scores)) Cross Validation Scores: [0.96666667 0.96666667 0.9 0.93333333 1.] Average CV Score: 0.9533333333333334 Number of CV Scores used in Average: 5

10. ADVANTAGES

- It assists students in making decisions about which college to attend.
- When compared to the existing system, the possibility of error occurring is lower here.
- It is quick, efficient, and dependable and very simple to use.
- Avoids data duplication and inconsistency.
- Data is easily accessible.
- It would be the simplest way to predict which universities/colleges a person is qualified for, as well as the most unbiased and transparent.
- Individuals would no longer have to rely on consultancies that may be slightly deviated from the list of colleges/universities with which they have contracts.
- Furthermore, applying only to colleges/universities where the student has a genuine chance would shorten the application process.
- Furthermore, the living expenses of the area where colleges/universities are located would be provided on the website.

DISADVANTAGES

- An active internet connection is required.
- If data is entered incorrectly, the system will produce inaccurate results.
- Other factors, such as changes in university or national policies, can also affect admissions chances in ways that are beyond the scope of this project.
- Admissions are also subject to the individual university's policy on the acceptance of international students, which is not modeled by our system.

11. CONCLUSION

To predict the output, Random forest regression is used, and a web application is built using various technologies such as Python, HTMLS, CSS, Flask, Scikit, Matplot, Numpy, Pandas, Seaborn, and other libraries. After the web application has been deployed, it can be accessed from any location with an internet connection. This project reduces the long hours of analysis required to predict admission eligibility to a rated university.

12. FUTURE SCOPE

This project's future scope is extremely broad. Some of them are:

- This can be implemented in less time for proper admission process.
- This can be accessed anytime, anywhere, because it is a web application that requires only an internet connection.
- The user did not need to travel a long distance for the admission and his/her time is also saved as a result of this automated system.

13. APPENDIX

13.1 SOURCE CODE

Index.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">
```

```html
    <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/style.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">
    <script type="text/javascript" src="../static/js/script.js" async></script>
    <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="/">
           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

```
{% 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\images\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 %}
```
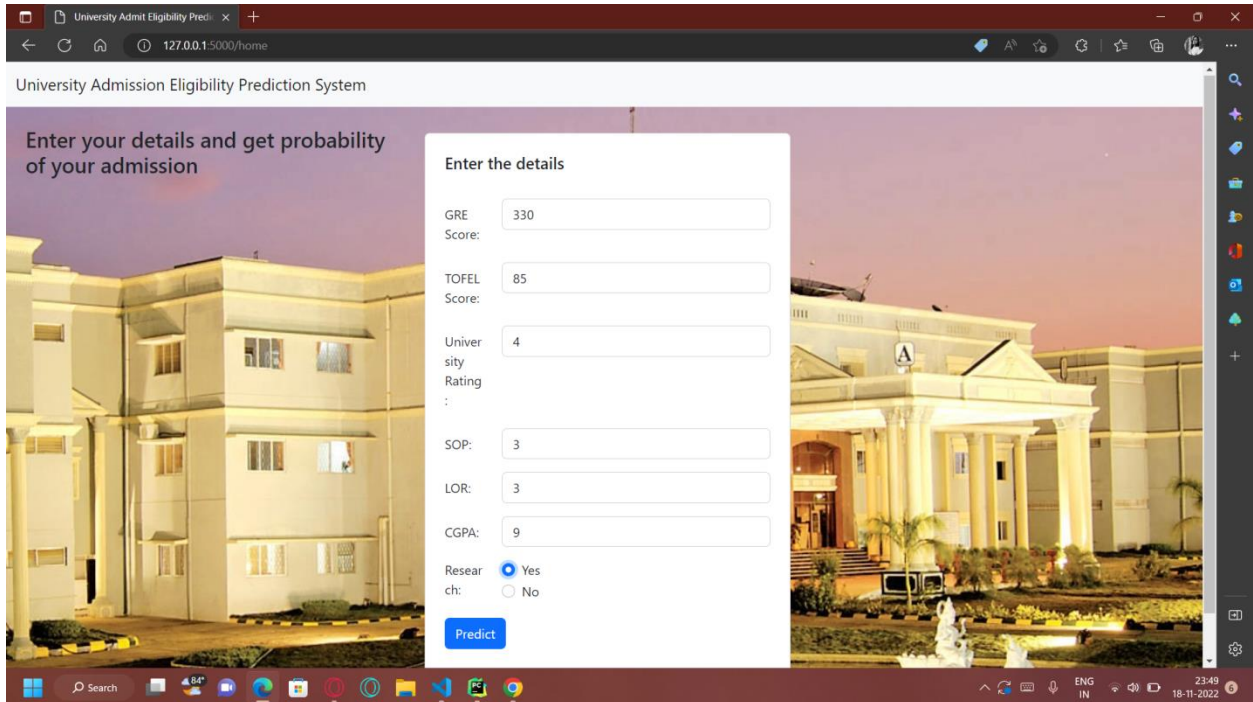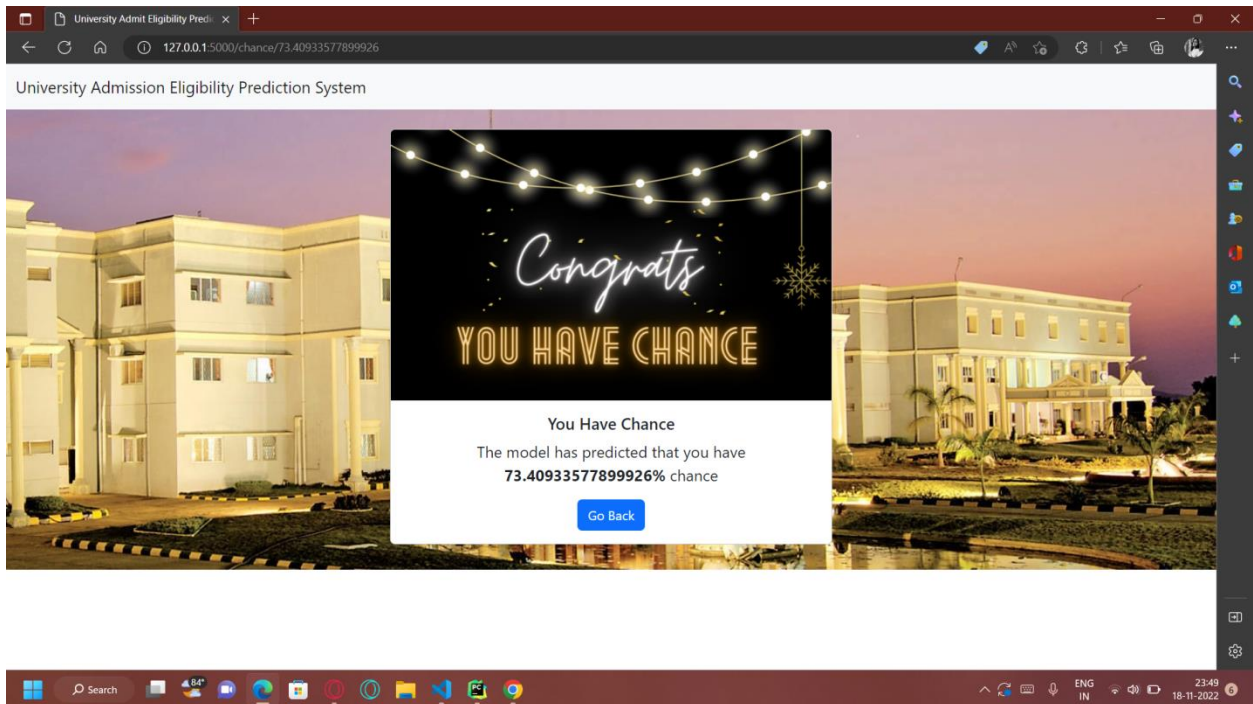
Nochance.html

```
{% extends 'index.html' %}
{% block body %}
<div class="container text-center p-4">
   <div class="d-flex justify-content-center">
     <div class="card" style="width: 34rem;">
       <img src="..\static\images\nochance.png" 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 %}

13.2 GitHub & PROJECT DEMO LINK

GitHub Link: https://github.com/IBM-EPBL/IBM-Project-17873-1659676873

Project video link: https://youtu.be/vZGLUFf-OYg