

1. INTRODUCTION

1.1 Project Overview: University Admit Eligibility Predictor

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

1.2 Purpose

It helps students to make right decisions for choosing their college. In which students can register with their personal as well as marks details to predict the admission in colleges and the administrator can allot the seats for the students.

2. LITERATURE SURVEY

2.1 Existing problem

Kruthika et.al., (2021) [1] proposed a University Admission prediction using Machine learning that addresses the AI models to anticipate the opportunity of an understudy issue is vital in educational institutions. Their proposed system helps to understand the events ahead of the time and get an opportunity to get acknowledged. The system has used Machine learning models are linear relapse , Decision tree regress or and random forest regression. The main advantage of the proposed system is that it also focuses on the advanced education both M tech and MBA entrance examination and for the colleges which are available abroad .The disadvantage of the proposed system is that it does not focus on the undergraduate programs.

Vandit Manish Jain.et.al., (2021) [2] proposed a college admission prediction using ensemble machine learning models that can help students to pick the right universities based on their profiles. The system also has a wide variety of dataset containing information about the student profile and university details with a field detailing if the admission result is positive or not. Among many of the algorithms Ensemble machine learning and the predictions have been used compared with KPIs. The main advantage of the proposed system is that it can predict the acceptance rate to a university. And it has a portal which filters and then provides a list of universities that fall into the particular profiles acceptance range.

Annam Mallikharjuna Roa.et.al., (2018) [3] proposed a college admission predictor system which is a web based application.They developed a system in which students can register their marks along with their personal information which helps in prediction with admission in colleges.Administrator can add the college details and the batch details. Using this Application, the entrance seat allotment becomes easier and efficient. The main advantage of the project is the computerization of the entrance seat allotment process. Administrator has the power for the allotment. Admin can add the allotted seats into a file and the details are saved into the system. In which students can register with their personal as well as marks details to predict the admission in colleges and the administrator can allot the seats for the students. Administrators can add the college details and the batch details.Their proposed System helps the entrance seat allotment become easier and can be implemented using the system. Admin can add the allotted seats into a file and the details are saved into the system. The total time for the entrance allotment became lesser and the allotment process became faster. It helps students make decisions for choosing the right college.The disadvantage of the system is that the administrator has the power of the seat allotment.

Chithra Apoorva D A et.al., (2020) [4] proposed a University Admission prediction using Machine Learning.The system may also be modified to a web based application by making node -red modifications. Bayesian Networks algorithms have been used to create a decision support network for evaluating the application submitted by foreign students of the university. The main advantage was to accomplished successfully, as the system allows students to save the lot of time and money that they would spend on educational mentors and applications fees for colleges where they have less chances of getting admissions.The disadvantage of this models based solely on data from Indian Students studying Masters in computer Science in the United states, we considered only few universities with different rankings.

JeevanRatnakar K et.al., (2021) [5] proposed a Graduate Admission prediction using Machine Learning. A comparative approach by developing four machine learning regression models: linear regression, support vector machine, decision tree and random forest for predictive analytics of graduate admission chances. graduate students usually are not knowledgeable of the requirements and the procedures of the postgraduate admission and might spend a considerable amount of money to get advice from consultancy organizations to help them identify their admission chances. A decision tree algorithm based on the test attributes like GRE, TOEFL,CGPA,research papers etc.According to their scores the possibilities of chance of admit is

calculated. The advantage of this model is that it has 93% accuracy.

Swaroop S et.al., (2020) [6] proposed a University Admission prediction using Machine Learning. The system has inspired many students in their profession to pursue postgraduate studies. It is seen that there is quite a many students from universities in the USA pursuing Masters in the field of computer science, the emphasis of this research will be on these students. Many Colleges in the U.S follow similar requirements for student admission. Colleges take different factors into account, such as the ranking on aptitude assessment and academic record review. The main advantage of our goal is to develop a model which will tell the students their chance of admission into a respective university.

Abdul Fatah S (2012) [7] developed a model that can provide the list of universities/colleges where the best suitable for a student is based on their academic records and college admission criteria. The model was developed by applying data mining techniques and knowledge discovery rules to the already existing in-house admission prediction system of the university. (Mane (2016)) conducted a similar research that predicted the chance of a student getting admission in college based on their Senior Secondary School, Higher Secondary School and Common Entrance Examination scores using the pattern growth approach to association rule mining. The performance of both the models was good, the only drawback was the problem statement was single university-centric.

Mishra and Sahoo (2016) [8] conducted a research from a university point of view to predict the likelihood of a student enrolling in the university after they have enquired about courses in the university. They used K-Means algorithm for clustering the students based on different factors like feedback, family income, family occupation, parents qualification, motivation etc. to predict if the student will enroll at the university or not. Depending upon the similarity of the attributes among the students they were grouped into clusters and decisions were made. The objective of the model was to increase the enrollment of the students in the university.

Waters and Miikkulainen (2013) [9] GRADE system was developed to support the admission process for the graduate students in the University of Texas Austin Department of Computer Science. The main objective of the project was to develop a system that can help the admission committee of the university to make better and

faster decisions. Logistic regression and SVM were used to create the model, both models performed equally well and the final system was developed using Logistic regression due to its simplicity. The time required by the admission committee to review the applications was reduced by 74% but human intervention was required to make the final decision on status if the application.(Wanderings et al. (2014)) created a similar model to predict the enrollment of the student in the university based on the factors like SAT score, GPA score, residency race etc. The Model was created using the Multiple Logistic regression algorithm, it was able to achieve an accuracy rate of 67% only.

Sujay S (2020) [10] proposed Graduate Admission Prediction using Machine learning algorithm , Python and Exploratory Data Analysis that is used to analyses and predict the possibility of a person getting an admit for graduate courses in the United States based on various libraries on a Kaggle dataset. This can be done by implementing the Linear Regression which is one of the famous statistical methods in linear algebra. After implementing immense research on the dataset, explore the relationship between each factor which contributes in one or the other way to get an admit. The dataset used contains labelled data. The supervised machine learning algorithm is used for predicting labelled data. The model trains on the data in the dataset and then predicts the data from the user.Finally, using linear regression, allows the program to predict the data from the user.

Inssaf El Guabassi et.al., (2021) [11] developed a A Recommender System for Early Predicting University Admission using four Machine Learning algorithms Linear Regression, Decision Tree, Support Vector Regression, and Random Forest Regression that allows to reduce the human error probability by providing very strong recommendations, predictions, and decisions based on only the input data. The experimental results showed that the Random Forest Regression is the most suitable Machine Learning algorithm for predicting university admission. Also, the Cumulative Grade Point Average (CGPA) is the most important parameter that influences the chance of admission.

Amal AlGhamdi et.al., (2020) [12] developed a Graduate Admission Prediction by using Machine Learning approach to automatically predict the possibility of postgraduate admission to help graduates recognizing and targeting the universities which are best suitable for their profile that three learning strategies of regression to predict the university rate given the students' profile; , linear regression, decision tree, and logistic regression model.These models select the best model in terms of the

highest accuracy rate and the least error. Logistic Regression model shows the most accurate prediction in our experiments. Employing this model to predict the future applicant's university chance of admission. The advantage of the model is giving the limited number of universities that can be considered by a human consultant, this approach might be bias and inaccurate

Prince Golden et.al., (2021) [13] developed a model that can provide a list of universities/colleges where a student is best suited based on their academic record and college admissions criteria. The system can also be adapted to a web application by making node - red modifications. Bayesian Networks algorithms were used to create a decision support network for evaluating applications submitted by international university students. graduated students are usually unfamiliar with graduate admissions requirements and procedures, and may spend significant amounts of money seeking advice from counseling organizations to help them identify their chances of admission.

Dr. Arunakumari B et.al., (2021) [14] developed an automated web application prediction model for a college admission system that can be used for judicious college selection before the allotment.r system is developed considering K-CET. Similarly, this system can be used for the Common Entrance Tests of other states and for other entrance examinations at the national level only by changing the database used. A method that will support an organization to explore the current scenario of student enrollment by predicting student enrollment behavior. It brings an approach like APRIORI examines a student's admissions behavior by considering the student's major and the majors he/she has chosen to enter. The method also presents a naive-bays data mining procedure that predicts which course a student may enroll in. Since the student's choices would be taken into account, the institution will be able to increase the admissions of the field based on the expected results.

Ahmed M Khedra et.al., (2012) [15] proposed a Hybrid recommender system for predicting college admission .The proposed HRSPCA system consists of two cascaded hybrid recommender s working together with the help of college predictor, for achieving high performance. The college predictor algorithm uses historical colleges GPA students admission data for predicting most probable colleges. The system analyzes student academic merits, background, student records, and the college admission criteria.Also the high prediction accuracy rate, flexibility is an advantage, as

the system can predict suitable colleges that match the students' profiles and the suitable track channels through which the students are advised to enter. The Main Advantage of this system is adaptive, since it can be tuned up with other decision makers attributes performing trusted needed tasks faster and fairly.

2.2 References

1. Kruthika.et.al(2021), 'University Admission prediction using Machine learning', Am J Glob J Res Rev Vol: 8 No:7.
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5. JeevanRatnakar K.et.al(2021) , 'A Graduate Admission prediction', Global Journal of Research and Review .
6. Swoop S.et.al(2020), 'A University Admission prediction', International Journal of Recent Technology and Engineering (IJRTE).
7. Abdul Fatah S; M (2012), ' A University Admission prediction', , International Journal of Recent Technology and Engineering (IJRTE).
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9. Waters and Complained (2013), ' University Admission prediction' , International Journal of Recent Technology and Engineering (IJRTE).
10. Sunday S (2020) , ' Graduate Admission Prediction', International Journal of Trend in Research and Development (IJTRD).

11. Insane El Guabassi.et Al(2021), ' A Recommender System for Early Predicting University Admission', International Journal of Recent Technology and Engineering (IJRTE).
12. Prince Golden.et Al (2021), 'Graduate Admission Prediction', International Journal of Trend in Research and Development (IJTRD).
13. Dr. Marijuana B.et Al (2021), ' an automated web application prediction model for a college admission system', International Journal of Trend in Research and Development (IJTRD).
14. Ahmed M hexahedra .et Al(2012), 'A Hybrid recommender system for predicting college admission', International Journal of Recent Technology and Engineering (IJRTE).
15. Amalia AlGhamdi.et Al(2020), ' A Graduate Admission Prediction', International Journal of Recent Technology and Engineering (IJRTE).

2.3 Problem Statement Definition

Customer Apply Admission in university .I am facing Application related issues .I don't know the eligibility criteria of that university stressful and anxious.

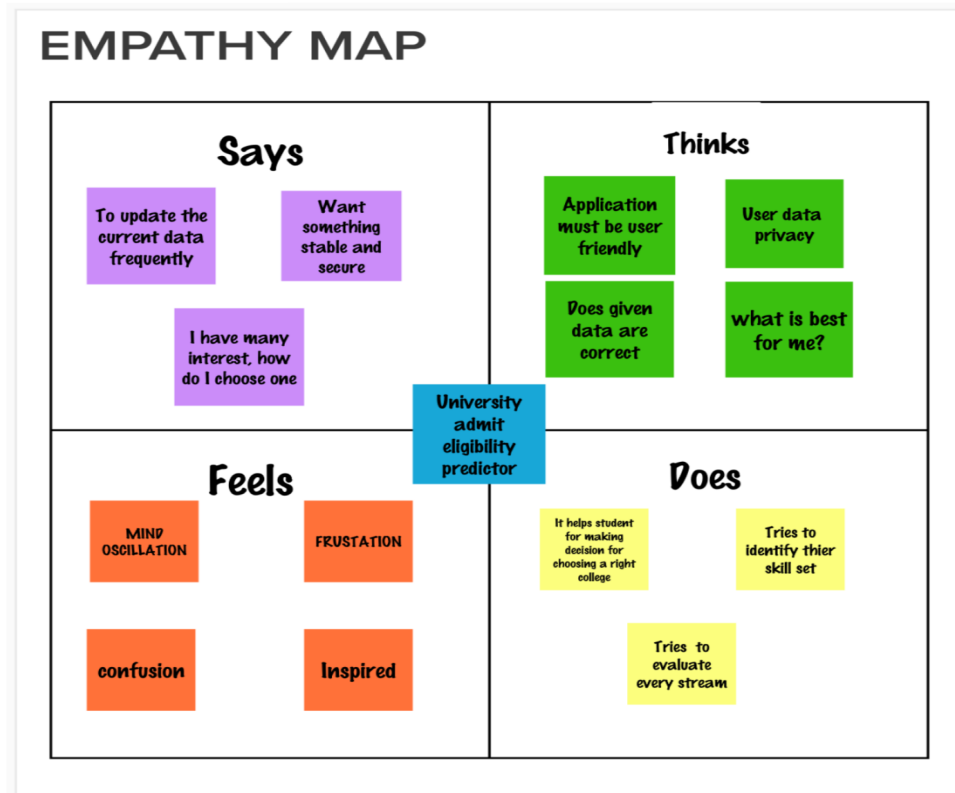
Users get admission into prominent universities. I do not know the procedure, requirements and details of the universities. There are no web apps which is common for all over India for predicting the student eligibility for the university Engaged and frustrated

3. IDEATION & PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS

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

UNIVERSITY ADMIT ELIGIBILITY PREDICTOR



3.2 IDEATION AND BRAINSTORMING

Unleash and explore your creative ideas from different angles with templates for mind mapping, brain-writing, SCAMPER, and more. Ideate effortlessly and come together as a team having that in-person feeling as if you were in the same room.

2.	Idea / Solution description	<p>The project would also throw light on university and their optimistic prospects.</p> <p>It will help UG graduates in short listing universities for their master degree CGPA, GRE, TOEFL scores.</p> <p>The project will offer a method for analysis the student's grades and comparing them to the grades assigned by the college.</p>
3.	Novelty / Uniqueness	<p>Once our model is trained, we will use the trained model and run it on the test set and predict the output. Then we will compare the predicted results with the actual results that we have to see how our model performed.</p> <p>By using Machine learning models like regression models, the probability of a student getting admission at a desired university is predicted.</p>
4.	Social Impact / Customer Satisfaction	<p>The websites will reduce the panic and unawareness among students.</p> <p>It will reduce our time, travel, and costs.</p> <p>It will give the exact prediction based on students.</p>
5.	Business Model (Revenue Model)	<p>The model used is where students will be able to use features of the app for free. If the application used with more students, it is planned to enhance for subscription for some features.</p>

6.	Scalability of the Solution	<p>The solution proposed will be deployed as web application. So, it is easily accessible by anyone who has internet services and has no specific software and hardware specifications.</p> <p>The data set used for model training can be scaled according to the available universities' admission data.</p>
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3.4. PROBLEM SOLUTION FIT

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem.

1. A Minimum Viable Product (MVP).
2. Satisfied early adopters (early panelists) who use your MVP.
3. A validated problem that you solve for the early annalists.

The Problem-Solution Fit canvas is based on the principles of Lean Startup, LUM (Lazy User Model) and User Experience design. It helps entrepreneurs, marketers and corporate innovators identify behavioral patterns and recognize what would work and why. It is a template to help identify solutions with higher chances of solution adoption, reduce time spent on testing and get a better overview of the current situation.

My goal was to create a tool that translates a problem into a solution, taking into account customer behavior and the context around it. None of the existing canvases or frameworks were giving me an overview and insight into the real customer situation during his/her decision-making process. With this template you will be able to take important information into consideration at an earlier stage and look at problem solving in depth. It increases your chances of finding problem-solution and product-market fit.

Define CS, fit into CC	1. CUSTOMER SEGMENT(S) Who is your customer? CS The customers of this project are the undergraduate students who are willing to pursue their higher education in universities.	6. CUSTOMER CONSTRAINTS What constraints prevent your customers from taking action or limit their choices of solutions? CC Cut-off, Marks and eligibility criteria.	5. AVAILABLE SOLUTIONS Which solutions are available to the customers when they face the problem AS or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? Select the students for university is easy Save time for both universities and students Advantage for students to get top college admissions	Explore AS, differentiate
	2. JOBS-TO-BE-DONE / PROBLEMS Which jobs-to-be-done (or problems) do you address for your customers? CC Need to predict the university where they can be admitted. The information they provide should be kept confidential. Right and accurate information about universities should be shared with them	9. PROBLEM ROOT CAUSE What is the real reason that this problem exists? What is the back story behind the need to do this job? RC Root cause of problem is undeserved Candidate selected for the top universities previous years, now deserved candidate selected for universities based on eligibility criteria.	7. BEHAVIOUR What does your customer do to address the problem and get the job done? BE The customer mainly gives some information's such as GRE score, cgpa, IELTS score based on which the user ask to predict eligibility to the university that they intend to apply.	

3. TRIGGERS What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news. TR 1. When the students are willing to pursue higher education. 2. When the students are willing to cutout 3. When the students are willing to shortlist universities to which they are eligible. Extra cost will be incurred when applying to multiple universities without knowing our eligibility the cost of consultancy agency	10. YOUR SOLUTION Deserve candidate easily get the opportunities, even if eligibility criteria but some students affected for the criteria SU	8. CHANNELS of BEHAVIOUR a1 ONLINE If any problem occurs , gave time to solve and easily find out. a2 OFFLINE CH
4. EMOTIONS: BEFORE / AFTER How do customers feel when they face a problem or a job and afterwards? EM Before/After Time less/save time Hard to find college/Easy to find college Undeserved candidate selected for college/Deserved candidate selected for college.		

4. REQUIREMENT ANALYSIS

4.1. 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 Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP

FR-3	User Requirements	Scraping the information based on the user details Uploading all the needed documents
FR-4	User Details	GRE score SOP score CV TOEFL score

4.2 NON-FUNCTIONAL REQUIREMENTS

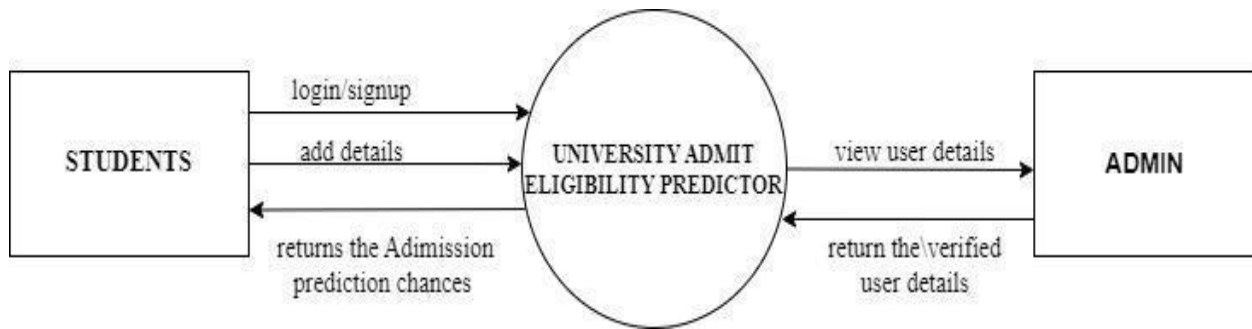
Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Functional and Friendly UI Better visualization tools to help the user understand the differences and unique points
NFR-2	Security	Using OAuth2 for the auto services will increase the security of the application.
NFR-3	Reliability	The application will be a web app so it will be easy to access from all the devices.
NFR-4	Performance	Using cache for storage Cache will significantly reduce the need to perform calculations over and over
NFR-5	Availability	Web app Accessible from all devices
NFR-6	Scalability	Improvable security with 2FA auto service Improvable performance with cache preferences Improved ML algorithm for reduced calculation time

5. PROJECT DESIGN

5.1 DATA FLOW DIAGRAM

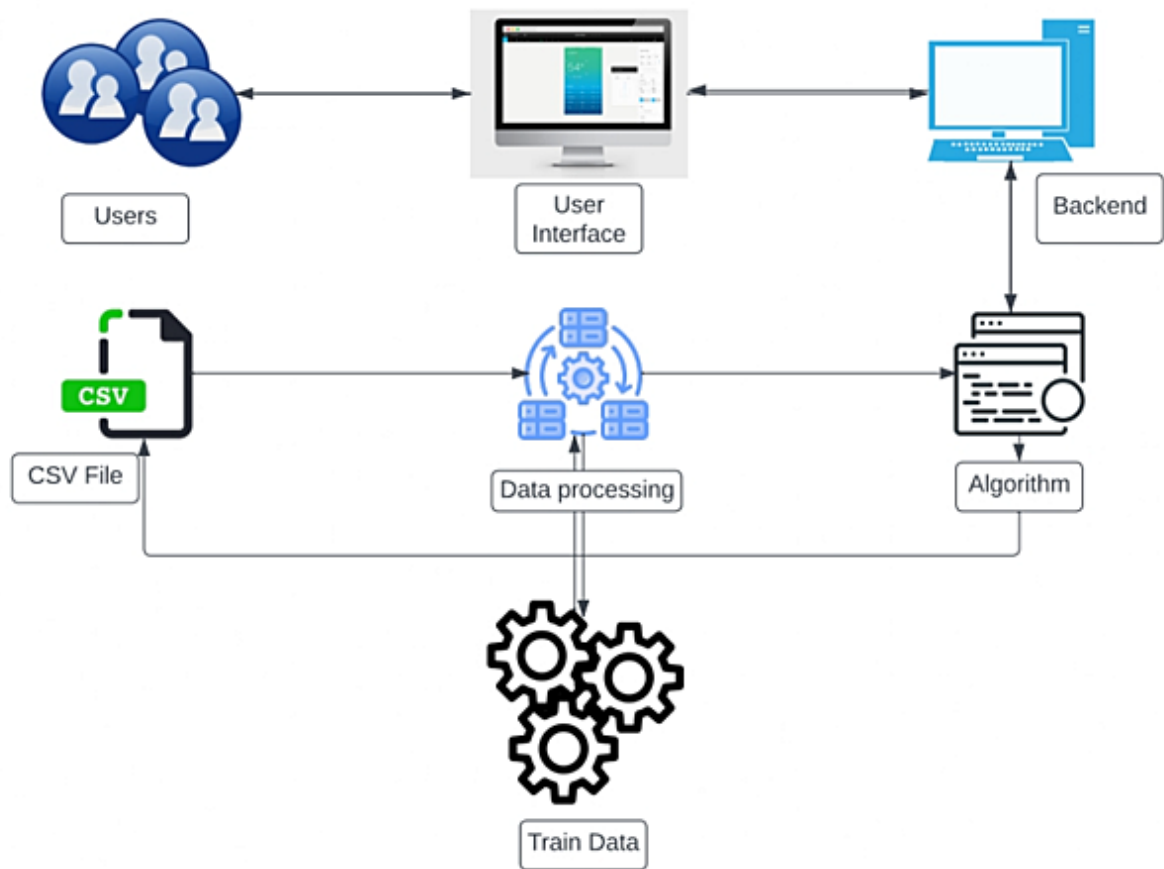
A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



Zero Level Data Flow Diagram(0 Level DFD) Of University Admission Management System:

This is the Zero Level DFD of University Admission Management System, where we have elaborated the high level process of University. It has a basic overview of the whole University Admission Management System or process being analyzed or modeled. It has designed to be an at-a-glance view of Course, Degree and Entrance Exam showing the system as a single high-level process, with its relationship to external entities of University Admission and Student. It should be easily understood by a wide audience, including University, Student and Course. In zero level DFD of University Admission Management System, we have described the high level flow of the University system.

5.2 SOLUTION AND TECHNICAL ARCHITECTURE



5.3 USER STORIES

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint- 1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email and click confirm	High	Sprint- 1
		USN-3	As a user, I can register for the application through github Login	I can register and access the dashboard with github Login	Low	Sprint- 2
	Login	USN-4	As a user, I can register for the application through Gmail	I can access my account	Medium	Sprint- 1
	Dashboard	USN-5	As a user, I can log into the application by entering email and password	I can choose colleges	High	Sprint- 1
Customer (Web user)	Selection	USN-6	As a user, I can confirm the available college or re-apply to other college	I can select the college	Medium	Sprint- 3

	Queries	USN-7	As a user, I can ask queries to the system regarding the help / support or technical issues	I can ask queries	High	Sprint- 4
Administrator	Authentication	USN-8	As a admin, I can authenticate the login credentials of user	I can access all the user details	High	Sprint- 1
	Dashboard	USN-9	As a admin , I can verify the details of the user	I can confirm the user updating details	High	Sprint- 2
	Prediction	USN-10	As a admin , I can train the user details with ML algorithm	I can train the data	High	Sprint- 2
	Chances	USN-11	As a admin ,I can solve the queries of users	I can provide chances	High	Sprint- 3
	Solution	USN-12	As a admin, I can update the university database depends on the user confirmation	I can solve the queries	High	Sprint- 4

6. PROJECT PLANNING & SCHEDULING

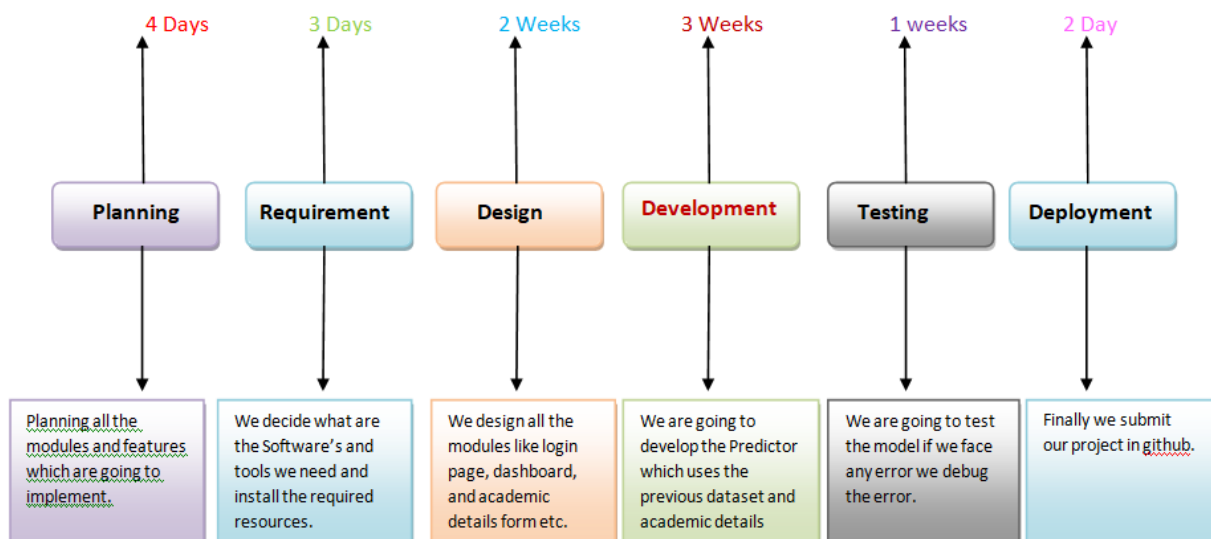
6.1 SPRINT PLANNING AND ESTIMATION

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming	3	High	2

			my password.			
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	1
Sprint-1	Login	USN-3	As a user, I can log into the application by entering email and password	4	High	4
Sprint-2	Update Profile	USN-4	As a user, after logging in, I will have to update my profile by providing all the required details.	3	High	3
Sprint-3	Choose University	USN-5	As a user, I will be able to view the list of universities that the students are eligible to apply.	5	High	5
Sprint-3	Choose Course	USN-6	As a user, I will be able to view the list of courses that the students are eligible to apply.	5	Medium	4
Sprint-4	Admission Process	USN-7	As a user, I will be able to view the details of Admission process like date and venue of certification verification.	2	Low	2
Sprint-1	Authentication	USN-8	As a admin, the login credential of the user is authenticated my me.	3	High	3
Sprint-2	Update Profile	USN-9	As a admin, I can verify the user entered details.	2	High	2

Sprint-3	Prediction	USN-10	As a admin, I can test the trained ML model by analyzing the user details by ML algorithms like Logistic Regression.	5	High	5
Sprint-4	Output	USN-11	As a admin, I can upload the confirmation of user for the prediction into the Database.	3	High	3

6.2 SPRINT DELIVERY SCHEDULE



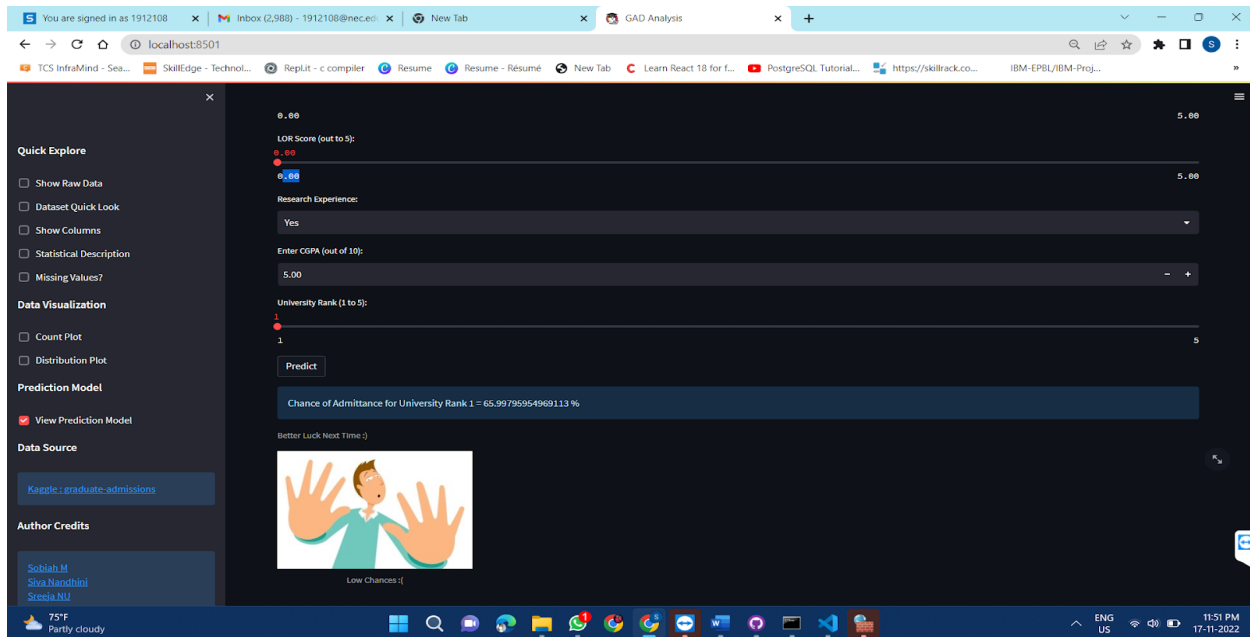
6.3 REPORTS FROM JIRA

Jira reports have been attached in this file JIRA REPORTS [JIRA REPORTS](#)

7. CODING & SOLUTIONING

7.1 SIDEBAR

Instead of showing everything to the user, which makes it hard for them to use, We have added a sidebar which contains all of the module names which can be toggled to show them in the app. This approach will make it easier for the end user to use the app, also it makes the page looks clean compared to everything shown.



CODE:

```
st.header('Quick Explore')
st.sidebar.subheader('Quick Explore')
st.markdown("Tick the box on the side panel to explore the dataset.")
```

```
if st.sidebar.checkbox("Show Raw Data"):
    st.subheader('Raw data')
    st.write(df)
```

```
if st.sidebar.checkbox('Dataset Quick Look'):
    st.subheader('Dataset Quick Look:')
    st.write(df.head())
```

```

if st.sidebar.checkbox("Show Columns"):
    st.subheader('Show Columns List')
    all_columns = df.columns.to_list()
    st.write(all_columns)

if st.sidebar.checkbox('Statistical Description'):
    st.subheader('Statistical Data Description')
    st.write(df.describe())

if st.sidebar.checkbox('Missing Values?'):
    st.subheader('Missing values')
    st.write(df.isnull().sum())

st.header('Data Visualization')
st.markdown("Tick the box on the side panel to create your own Visualization.")
st.sidebar.subheader('Data Visualization')

if st.sidebar.checkbox('Count Plot'):
    st.subheader('Count Plot')
    st.information("If error, please adjust column name on side panel.")
    column_count_plot = st.sidebar.selectbox(
        "Choose a column to plot count.", df.columns[:5])
    fig = sns.countplot(x=column_count_plot, data=df)
    st.set_option('deprecation.showPyplotGlobalUse', False)
    st.pyplot()

if st.sidebar.checkbox('Distribution Plot'):
    st.subheader('Distribution Plot')
    st.information("If error, please adjust column name on side panel.")
    column_dist_plot = st.sidebar.selectbox(
        'Choose a column to plot density.', df.columns[:5])
    fig = sns.distplot(df[column_dist_plot])
    st.set_option('deprecation.showPyplotGlobalUse', False)
    st.pyplot()

# Showing the Prediction Model
st.header('Building Prediction Model')

```

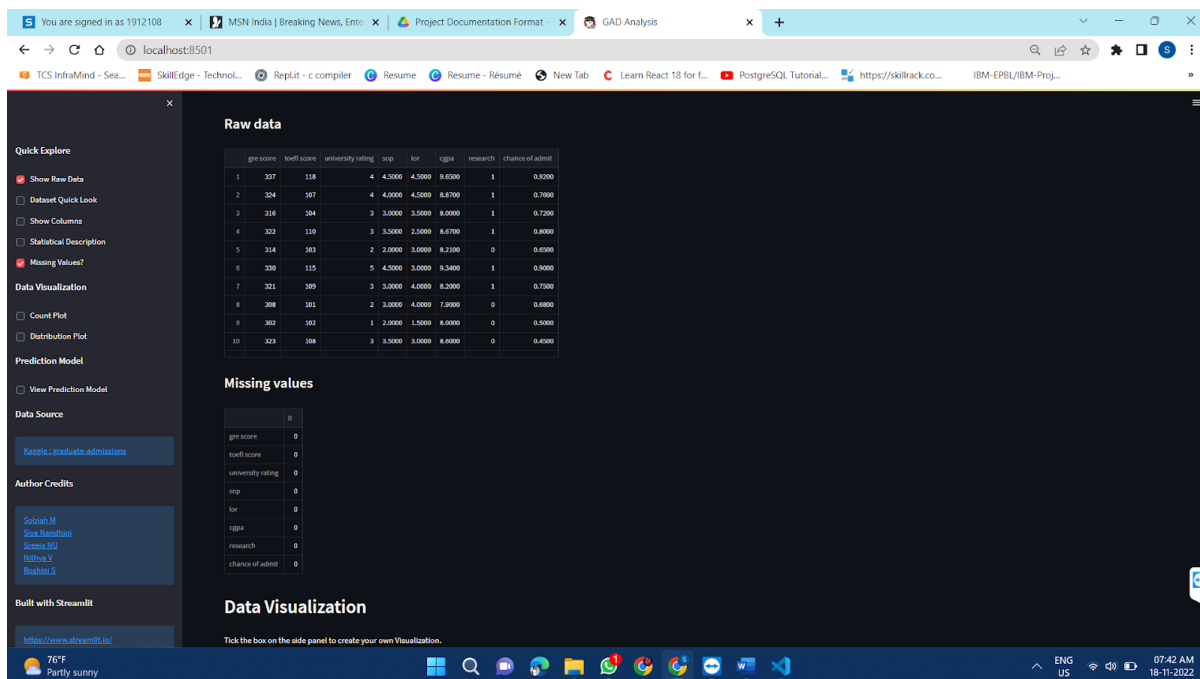
```

st.sidebar.subheader('Prediction Model')
st.markdown("Tick the box on the side panel to run Prediction Model.")
if st.sidebar.checkbox('View Prediction Model'):
    st.subheader('Prediction Model')
    # pickle_in = open('models/Multiple_Linear_Regression.pkl', 'rb')
    # model = pickle.load(pickle_in)

```

7.2 EXTRA MODULES

Instead of only showing the prediction model and the result, we insist on showing more data to the user. For this we added extra modules such as showing raw data, missing values, data description to the sidebar which the user can toggle and see. Since the end user can see the raw data along with the prediction, this will make this app useful not only for prediction models.



```

def load_data(nrows):
    of = pd.read_csv(DATA_URL, nrows=nrows)
    def lowercase(x): return str(x).lower()
    df.set_index('Serial No.', in place=True)
    df.rename(lowercase, axis='columns', in place=True)
    return df
st.title('Lets explore the Graduate Admission Dataset')

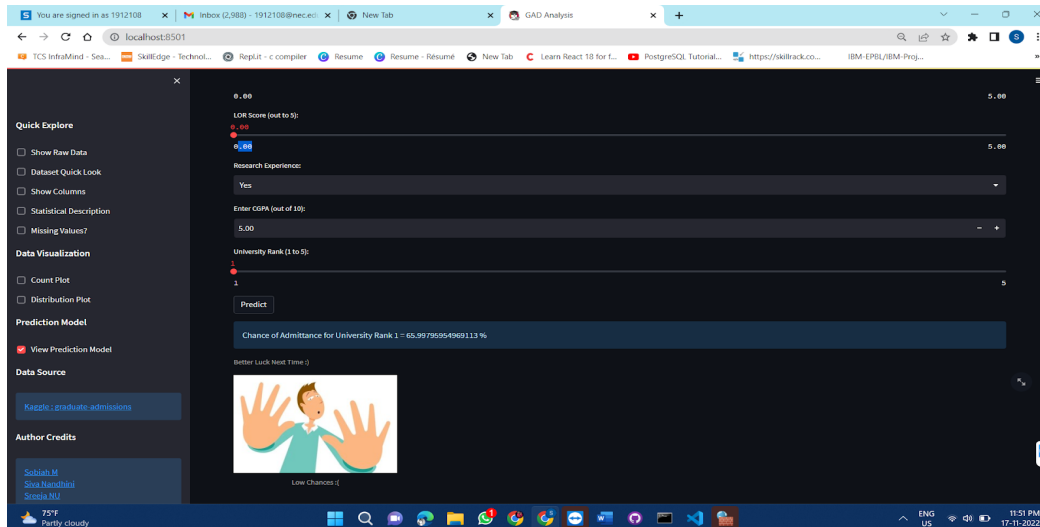
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8. TESTING

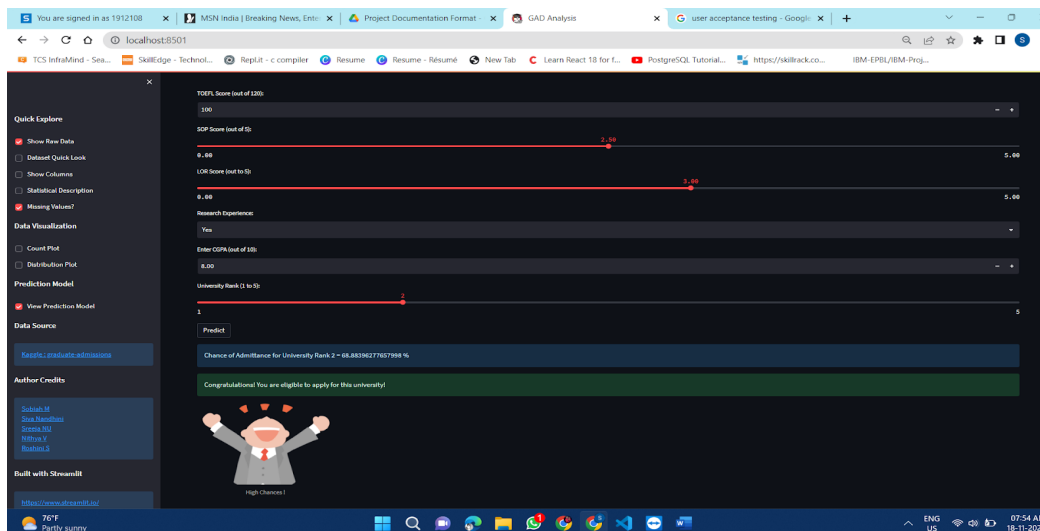
8.1 USER ACCEPTANCE TESTING

For the test cases, we tested two corner cases,

In the first one we made everything low as possible and the expected result was 'no chance'



The second one, we have given all the inputs higher than the university rank which is set to 2 by default, The expected result is 'accepted'.



8.2 TEST CASES

Action	Expected result	Test case Pass / Fail
Low TOEFL score	No chance	Pass
Low CGPA score	No chance	Pass
High uni rank with medium scores	No chance	Pass
SOP score too low	No chance	Pass

Action	Expected result	Test case Pass / Fail
Low TOEFL score	No chance	Pass
Low CGPA score	No chance	Pass
High uni rank with medium scores	No chance	Pass
SOP score too low	No chance	Pass
Low LOR score	No chance	Pass

Action	Expected result	Test case Pass / Fail
High TOEFL score	Eligible	Pass
High CGPA score	Eligible	Pass
Low uni rank with medium scores	Eligible	Pass
SOP score High with other scores	Eligible	Pass

9. RESULTS

9.1 PERFORMANCE METRICS

User satisfaction

For the ease of use for the end users, we have developed this app with a modular approach and clean UI. The end user can easily use the app with the modules. Also this app is responsive which makes it easier to use across all the devices.

Data Verification

Since all the datasets were taken from the IBM sample database and all of them were checked. We have done extra data pre-processing methods such as cleaning the unwanted data, Reducing the noise of the data and Clustering which makes the data verification process easier.

Average response time

Since the app was made using Flask(Python) and it uses the IBM cloud to get the details as go, The response time is negligible.

Average Request time

The user inputs the data needed to process in the IBM cloud and then the api needs to fetch data, the processing speed at the IBM cloud will determine the request time or waiting time, The request time is low.

Error rate

All the data was taken from IBM datasets and we used comprehensive data pre-processing to avoid and eliminate the errors. This app is almost error free.

9.2 USING TOOLS

PageSpeed Insights

pagespeed.web.dev/report?url=https%3A%2F%2Fsobiahm-streamlit-app-xddaf4.streamlit.app%2F&form_factor=desktop

Router Alley - Guides CompTIA Network... What is the role of... On which layer of O... DNS Servers, Roles... data science - Lear... Python as a calculat... Am-Crad/First-Aem... academic/awesome...

PageSpeed Insights Docs

https://sobiahm-streamlit-app-xddaf4.streamlit.app/ Analyze

Mobile Desktop

Discover what your real users are experiencing No Data

Diagnose performance issues

100 81 100 91

Performance Accessibility Best Practices SEO

100

Performance

Values are estimated and may vary. The performance score is calculated directly from these metrics. See calculator.

▲ 0-49 ■ 50-89 ● 90-100

Search Metrics
First Contentful Paint
Speed Index
Largest Contentful Paint
Time to Interactive
Total Blocking Time
Cumulative Layout Shift
First Input Delay
First Visual Change
First Meaningful Paint
First Byte
First Contentful Image
First Contentful Video
First Contentful Audio
First Contentful Font
First Contentful Script
First Contentful Style
First Contentful Link
First Contentful Button
First Contentful Form
First Contentful Table
First Contentful Table Row
First Contentful Table Column
First Contentful Table Cell
First Contentful Table Header
First Contentful Table Footer
First Contentful Table Row Header
First Contentful Table Row Footer
First Contentful Table Column Header
First Contentful Table Column Footer
First Contentful Table Cell Header
First Contentful Table Cell Footer
First Contentful Table Row Cell Header
First Contentful Table Row Cell Footer
First Contentful Table Column Cell Header
First Contentful Table Column Cell Footer
First Contentful Table Row Cell Header
First Contentful Table Row Cell Footer
First Contentful Table Column Cell Header
First Contentful Table Column Cell Footer

PageSpeed Insights Docs

Mobile Desktop

METRICS Expand view

● First Contentful Paint
0.3 s

● Speed Index
0.6 s

● Largest Contentful Paint
0.3 s

● Time to Interactive
0.3 s

● Total Blocking Time
0 ms

● Cumulative Layout Shift
0

Captured at Nov 21, 2022, 10:43 AM GMT+5:30 Initial page load Emulated Desktop with Lighthouse 9.6.6 Custom throttling Single page load Using HeadlessChromium 106.0.5249.103 with Jr

View Treemap

Show audits relevant to: AII FCP TBT LCP CLS

DIAGNOSTICS

▲ Image elements do not have explicit width and height

▲ Serve static assets with an efficient cache policy — 5 resources found

○ Avoid chaining critical requests — 2 chains found

○ Keep request counts low and transfer sizes small — 6 requests • 192 KiB

Mobile Desktop

More information about the performance of your application. These numbers don't directly affect the Performance score.

PASSED AUDITS (34)

Show

81

Accessibility

These checks highlight opportunities to improve the accessibility of your web app. Only a subset of accessibility issues can be automatically detected so manual testing is also encouraged.

ARIA

▲ [aria-*] attributes do not match their roles

These are opportunities to improve the usage of ARIA in your application which may enhance the experience for users of assistive technology, like a screen reader.

NAMES AND LABELS

Mobile Desktop

100

Best Practices

TRUST AND SAFETY

○ Ensure CSP is effective against XSS attacks

GENERAL

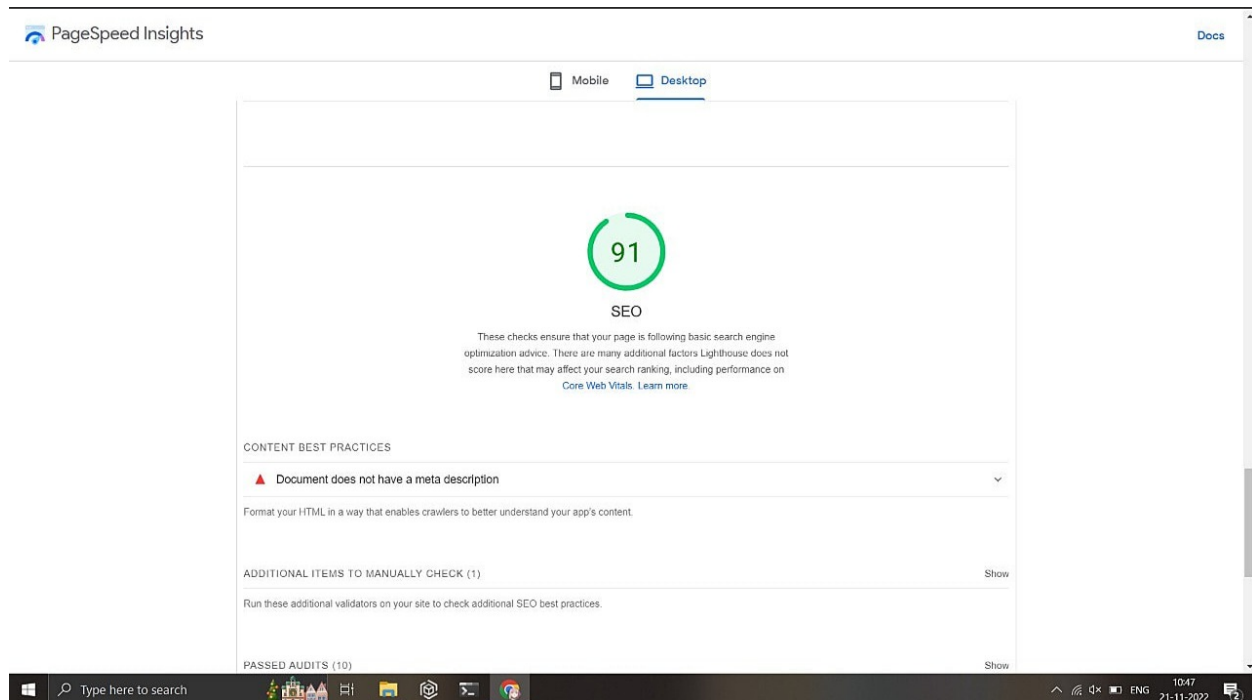
○ Detected JavaScript libraries

PASSED AUDITS (13)

Show

NOT APPLICABLE (1)

Show



10. ADVANTAGES & DISADVANTAGES

Advantages

It helps students make decisions for choosing the right college.

Here the chance of occurrence of error is less when compared with the existing system.

It is fast, efficient and reliable.

Avoids data redundancy and inconsistency.

Very user-friendly.

Easy accessibility of data.

Disadvantages

Required active internet connection.

System will provide inaccurate results if data entered incorrectly.

11. CONCLUSION

The subject of this examination was to determine if the below variables contribute to the admission of student to Master's degree program. The results of this examination appear to indicate that it greatly contributes to the response variable 'Chance of Admit'. Higher the GRE, TOEFL score then higher the admit chances. The model predicts 91.5% accuracy and can be used for predicting the admit chances based on the above factors. This model will be helpful for the universities to predict the admission and ease their process of selection and timelines. As part of the hypothesis, the model proved that admission to Master's degree program is dependent on GRE, TOEFL and other scores. This model would likely be greatly improved by the gathering of additional data of students from different universities which has similar selection criteria to choose the candidates for Master's program.

12. FUTURE SCOPE

The future scope of this project is very broad. Few of them are:

- This can be implemented in less time for proper admission process.
- This can be accessed anytime anywhere, since it is a web application provided only an internet connection.
- The user had 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

Source Code: The source code of the project can be found in [Final-Deliverables](#)

GitHub Link: <https://github.com/IBM-EPBL/IBM-Project-33797-1660226915>

Project Demo Link: [Youtube Link](#)