

Final Year Project Proposal

| Sr# | Student Name | Roll Number | Signature |
|-----|---------------|-------------|-----------|
| 1 | Abdul Nafay | 19P-0120 | |
| 2 | Sheheryar Ali | 19P-0120 | |
| 3 | Saad Javed | 19P-0111 | |

Suggested Supervisor:

Faculty Member's Name: _____

Signature: _____

Date (08 September 2022)

Project Details

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| Project Title | Counsellor | | |
| Project Area of Specialization | Machine Learning & Web Development | | |
| Project Start Date | 2022-09-08 | Project End Date | 2022-12-31 |
| Project Summary (less than 2500 characters) | <p>This project aims to develop a system for students and parents that would recommend an educational institution (at any level of study) based on their preferences. Choosing a university will be based on features such as tuition, campus size, campus location, availability of hostels/living arrangements, and availability of scholarship programs that the student is meeting the criteria for. For parents who want to find schools, it would retrieve the current working faculty, years of studies offered, and the fee structure.</p> <p>Any institute should also be presented alongside it's accessibility rating for users with physical or mental disabilities, including any such financial assistance forms.</p> <p>Even students currently in high school, they should be able to have a centralized point of reference to check details on how to get into their preferred universities or colleges.</p> <p>Advisors in high schools may also use this to further their own knowledge about advanced schooling and, in conjunction with their own experience, make better suggestions to their students.</p> | | |

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| Project Objectives (less than 2500 characters) | <ol style="list-style-type: none"> 1) Allowing students to see every option available to them 2) Allow high school students to check what grades, including any tests to get into their preferred college/ university 3) Checking if a student meets any criteria for scholarships/financial waivers anywhere 4) Allowing parents to set requirements for a school to cater for (autism, health risks, etc.) 5) Ranking institutions based on how closely they match a user's preferences 6) Allowing users to see what choices other users with similar preferences chose 7) Drawing up a representation for the most popular institutes in a locality/district |
| Project Implementation Method (less than 2500 characters) | <p>Using web scrapping techniques, we will extract data (such as, fee-structures/faculty qualifications/departments etc.) from multiple institutions, and we will use this data to training our machine learning model which uses a collaborative filtering approach. We will use MERN stack to create frontend plus backend integrated with our model. The frontend will take the test data from our user and will sent it to the NOSQL database, then using pymongo, we will retrieve it and will send the response back to the database. Finally, we will take the required information from the database in REACT to display the output in the browser.</p> |
| Benefits of the Project (less than 2500 characters) | <ol style="list-style-type: none"> 1) Ease the burden on students to decide their own futures 2) Ease the burden on working parents to find good schooling 3) Clearly present the fee structure to the end user 4) Making the user more aware of any financial waivers/ scholarships they meet the criteria for 5) High school students would have an easier time shaping their future if the immediate options were laid out in front of them 6) Even school advisors may use this and make suggestions based on their own experience |

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| Technical Details of Final Deliverable (less than 2500 characters) | We are going to develop a web application that is easily available to our target market. The Web App will contain Machine Learning algorithms written in Python acting as a server-side language alongside NodeJS, and a REACT application acting as a frontend language being displayed to the end user. |
| Final Deliverable of the Project | Full Stack Web Application |
| Type of Industry | Education |
| Technologies | React, NodeJS, Express, NOSQL Database, Python. |
| Sustainable Development Goals | To facilitate Students, Parents & Teachers by finding the right Educational Institute according to their preferences and needs. |

Project Key Milestones

| Elapsed time in (days or weeks or month or quarter) since start of the project | Milestone | Deliverable |
|--|--------------------------|--|
| Month 6 | Web App and Scraper Made | Working web application that can display scraped information |
| Month 9 | ML Model Made | Working model based on Collaborative filtering |

Project Equipment Details

| Item Name | Type | No. of Units | Per Unit Cost (in Rs) | Total (in Rs) |
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