Bansilal Ramnath Agarwal Charitable Trust's

Vishwakarma Institute of Technology, Pune-37

(An autonomous Institute of Savitribai Phule Pune University)

Department of Multidisciplinary Engineering

Department: Computer Engineering	**Academic Year:** 2022-23
Semester: IV	**Group No.: 2**
Project Title: College Portal	
Subject: Object Oriented Programming	

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1. Introduction

Getting into a college of your choice is one of the most significant milestones for any student. After months of hard work and perseverance, the day of the result finally arrives, and students eagerly wait to find out their fate. Some students might be ecstatic after seeing their result, while others might be disappointed with their scores.

That's where CollegePortal comes into play. CollegePortal is an innovative project that aims to help students in their college selection process. The project takes inputs from the user, such as name, merit number, branch, and caste, and using this data, the system returns a list of colleges stored in a MySQL database

It is a web-based application developed using Java Servlets and JDBC technology. Java Servlets are server-side programs that run on a web server and provide a platform for building web applications. JDBC (Java Database Connectivity) is a Java API that allows Java programs to interact with databases. To run the College Portal application, a XAMPP server is used. XAMPP is a cross-platform web server solution that includes Apache, MySQL, PHP, and Perl. It provides an environment for testing and developing web applications on a local machine before deploying them to a live server.

The main objective of College Portal is to assist students in predicting their chances of getting admission to different colleges based on their merit number, caste, and preferred branch of study. To achieve this objective, the application uses various statistical algorithms. These algorithms analyze the data entered by the user and calculate the probability of admission to different colleges. The user is then presented with a list of colleges that match their preferences, along with details such as the cutoff merit and the number of vacant seats available for the chosen branch.

The application is designed to be user-friendly and easy to navigate. The user interface is intuitive, and the application provides clear instructions to guide the user through the process of entering their information and selecting their preferences. The application also includes error handling and validation to ensure that the user enters valid information and to prevent any errors during the prediction process.

Apart from predicting the chances of admission for the user based on their merit number, caste, and preferred branch of study, College Portal also provides information about the college list of all branches and castes with the vacant seats and merits of all categories and fees. This information is presented to the user in a different tab or section of the application. The user can access this information by selecting the appropriate tab or section. In this section, the user can view the list of colleges that offer the preferred branch of study, along with the merit cut-offs and the number of vacant seats available for each category and caste.

The information about the fees is also included, which helps the user to make an informed decision about which college to choose based on their budget. The user can compare the fees of different colleges and make a decision based on their financial resources.

Providing this additional information about the college list of all branches and castes with the vacant seats and merits of all categories and fees is a valuable feature of College Portal. It enables the user to explore different colleges and make an informed decision about which college to apply to. It also helps the user to plan and manage their college admission process effectively, ensuring that they are aware of all the available options and can make the best decision for their future.

2. Methodology

The methodology for the CollegePortal project can be broken down into several steps:

1. Requirements Gathering: The first step in any software development project is to understand the requirements of the client or end-user. In this case, the requirements were gathered by studying the college selection process and identifying the pain points faced by students. A list of requirements was created based on this analysis.
2. Design: After gathering the requirements, the next step is to design the system. The project was designed using a layered architecture where the front-end was developed using a servlet, the back-end using Java programming JDBS, and the database using MySQL. The user interface was designed to be user-friendly and intuitive, with easy-to-use input fields and progress bars.
3. Development: Once the design was finalized, the development phase began. The front-end was developed using HTML, CSS, and JavaScript, while the back-end was developed using Java. The database was created using MySQL, and the JDBS API was used to interact with the database. The feedback section was also developed to store user feedback in the database.
4. Testing: Once the development was complete, the system was tested to ensure that it met the requirements and was free of bugs. The testing phase involved both manual testing and automated testing using testing frameworks.
5. Deployment: Once the system was thoroughly tested, it was deployed on a server. The server was configured to run the Java servlet and connect to the MySQL database.
6. Maintenance: The final step is to maintain the system and fix any issues that may arise. The system is monitored regularly, and any bugs or issues are addressed promptly.

Overall, the CollegePortal project was developed using a well-defined methodology that ensured the project met the requirements, was thoroughly tested, and was deployed successfully.

3. Software Requirements

To develop and run the CollegePortal project, several software requirements must be met. These include:

1. Java Development Kit (JDK): JDK is required to develop and run Java applications. CollegePortal project is developed using Java, so JDK needs to be installed on the system.
2. Integrated Development Environment (IDE): An IDE is a software application that provides an integrated environment for software development. An IDE is required to develop the CollegePortal project. Examples of popular Java IDEs include Eclipse, NetBeans, and IntelliJ IDEA.
3. Web server: A web server is required to run the Java servlet that serves the CollegePortal web application. Examples of popular web servers include Apache Tomcat, Jetty, and GlassFish.
4. MySQL: MySQL is a popular relational database management system used to store data. CollegePortal project uses MySQL as its database backend, so MySQL must be installed on the system.
5. JDBC Driver: JDBC (Java Database Connectivity) is a Java API used to interact with relational databases. The MySQL JDBC driver needs to be installed and configured in the project to connect to the MySQL database.
6. Web Browser: CollegePortal is a web-based application, so a modern web browser like Google Chrome, Mozilla Firefox, or Safari is required to access and use the application.

Overall, the software requirements for the CollegePortal project include Java Development Kit, IDE, web server, MySQL, JDBC driver, and a web browser.

4. Literature review

"A Comparative Study of College Selection Criteria in India" by S. S. Soodan and S. K. Pandey. This study analyzes the various criteria that Indian students use when selecting colleges, such as academic reputation, course curriculum, infrastructure, and faculty qualifications. The study provides valuable insights into the factors that influence college selection.

"Web-Based College Selection System: A Study of Student Preferences" by S. P. Sahu and S. K. Mahapatra. This study examines the preferences of Indian students for web-based college selection systems. The study finds that students prefer systems that are easy to use, provide accurate information, and offer personalized recommendations.

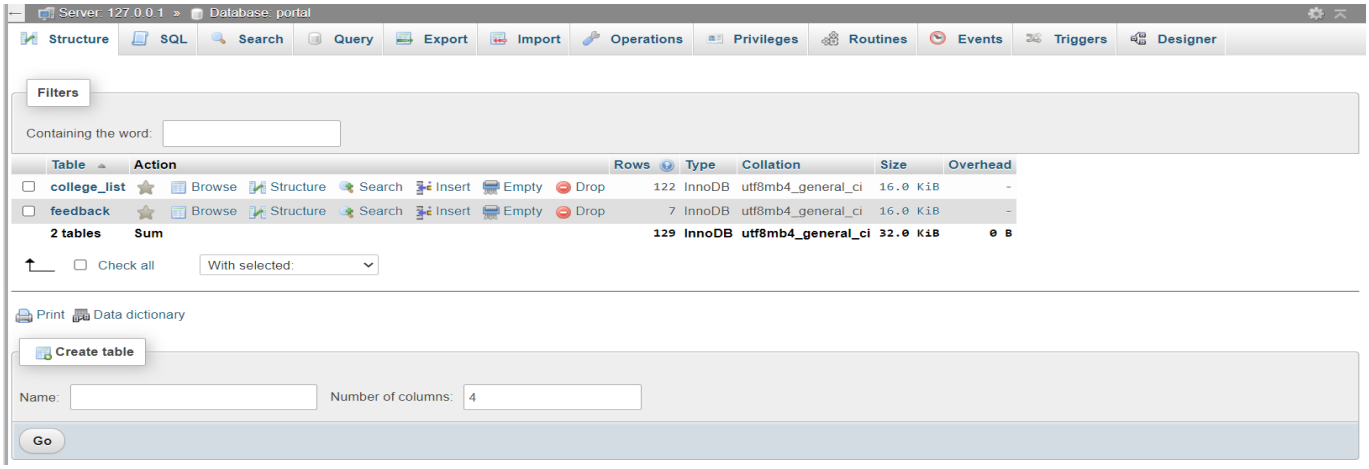
"A Review of Web-Based College Selection Systems" by A. H. Alobaidi and S. H. Al-Sharafi. This review analyzes the existing web-based college selection systems and identifies the features that are most effective in helping students select the right college. The review finds that personalized recommendations, user-friendly interfaces, and accurate information are critical features for effective college selection systems.

"Data Mining Techniques for College Admissions: A Literature Review" by R. G. Maniyeri and M. T. Mathew. This literature review examines the various data mining techniques that can be used for college admissions. The review finds that data mining techniques such as clustering, classification, and association rule mining can be used to analyze student data and provide personalized recommendations.

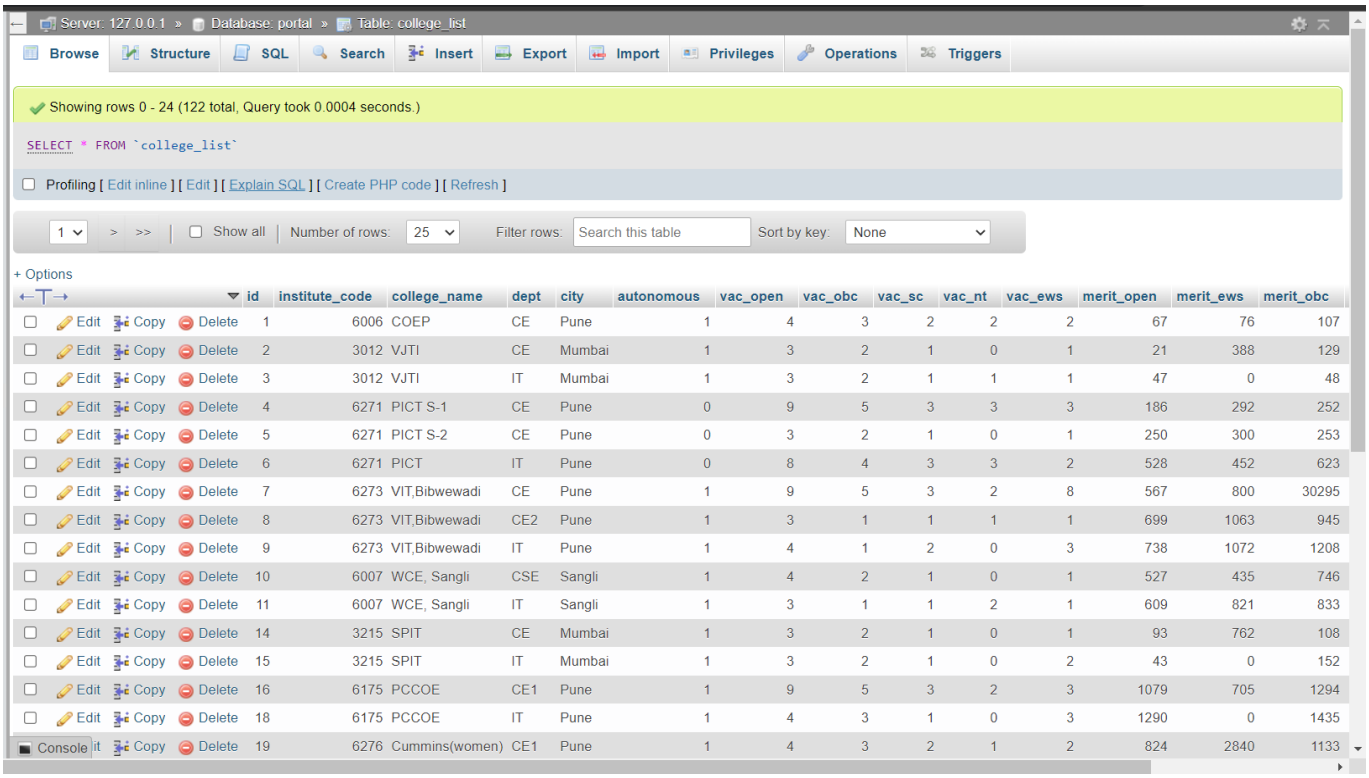
"A Study on the Impact of Caste on Educational Opportunities in India" by S. Anandhi and S. Rajeswari. This study analyzes the impact of caste on educational opportunities in India. The study finds that students from lower castes face significant barriers to accessing quality education. This finding highlights the importance of considering caste as a factor in college selection.

5. Results

- Tables in the Database



- College List Table



Server: 127.0.0.1 » Database: portal » Table: college_list

Browse | Structure | SQL | Search | Insert | Export | Import | Privileges | Operations | Triggers

Showing rows 0 - 24 (122 total, Query took 0.0004 seconds.)

```
SELECT * FROM `college_list`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

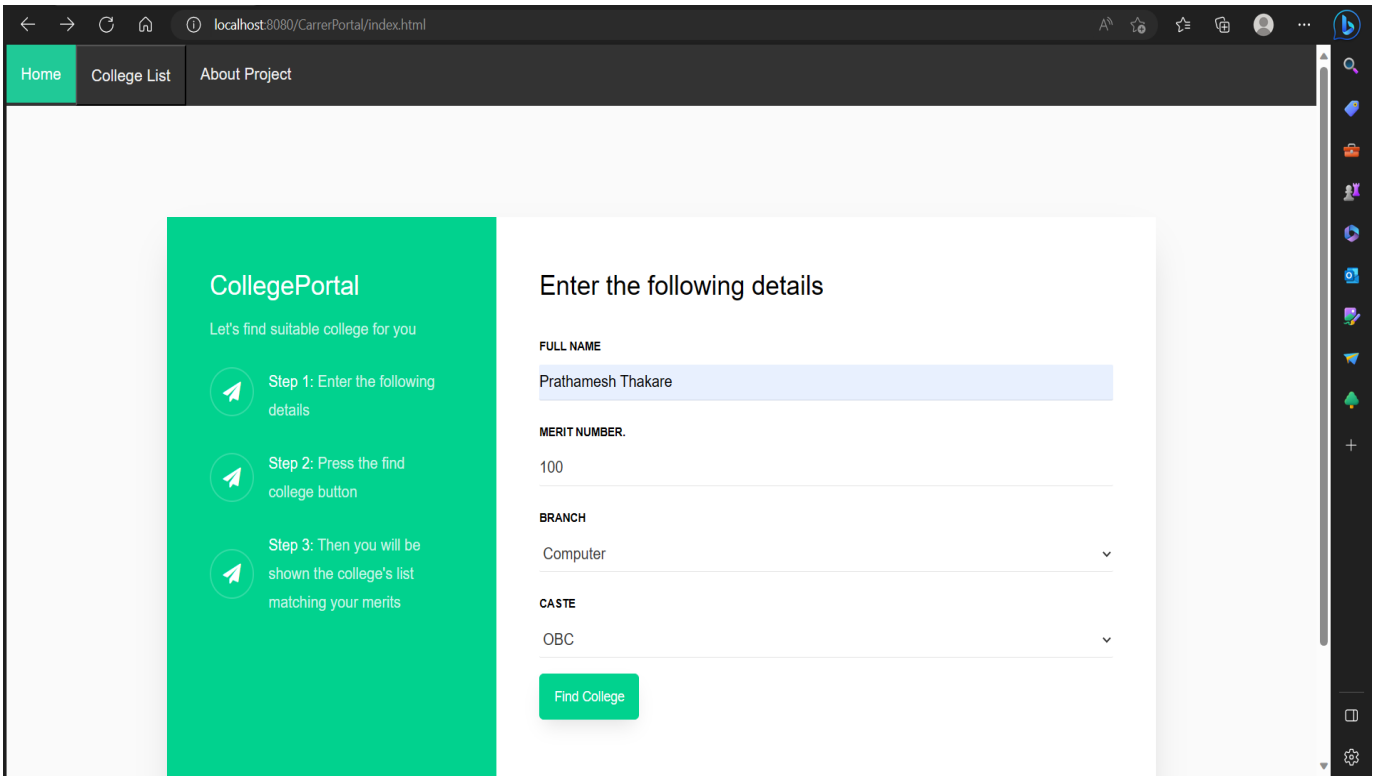
1 > >> | Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

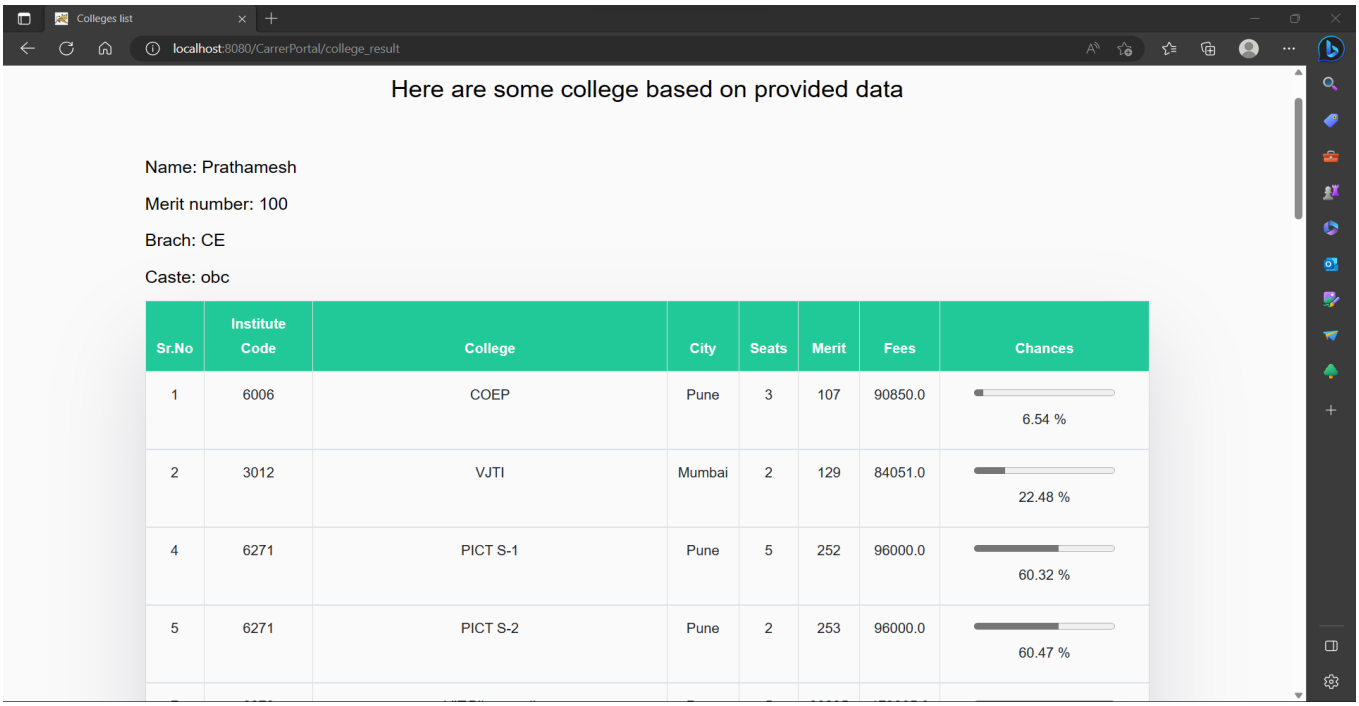
	id	institute_code	college_name	dept	city	autonomous	vac_open	vac_obc	vac_sc	vac_nt	vac_ews	merit_open	merit_ews	merit_obc
Edit Copy Delete	1	6006	COEP	CE	Pune	1	4	3	2	2	2	67	76	107
Edit Copy Delete	2	3012	VJTI	CE	Mumbai	1	3	2	1	0	1	21	388	129
Edit Copy Delete	3	3012	VJTI	IT	Mumbai	1	3	2	1	1	1	47	0	48
Edit Copy Delete	4	6271	PICT S-1	CE	Pune	0	9	5	3	3	3	186	292	252
Edit Copy Delete	5	6271	PICT S-2	CE	Pune	0	3	2	1	0	1	250	300	253
Edit Copy Delete	6	6271	PICT	IT	Pune	0	8	4	3	3	2	528	452	623
Edit Copy Delete	7	6273	VIT,Bibwewadi	CE	Pune	1	9	5	3	2	8	567	800	30295
Edit Copy Delete	8	6273	VIT,Bibwewadi	CE2	Pune	1	3	1	1	1	1	699	1063	945
Edit Copy Delete	9	6273	VIT,Bibwewadi	IT	Pune	1	4	1	2	0	3	738	1072	1208
Edit Copy Delete	10	6007	WCE, Sangli	CSE	Sangli	1	4	2	1	0	1	527	435	746
Edit Copy Delete	11	6007	WCE, Sangli	IT	Sangli	1	3	1	1	2	1	609	821	833
Edit Copy Delete	14	3215	SPIT	CE	Mumbai	1	3	2	1	0	1	93	762	108
Edit Copy Delete	15	3215	SPIT	IT	Mumbai	1	3	2	1	0	2	43	0	152
Edit Copy Delete	16	6175	PCCOE	CE1	Pune	1	9	5	3	2	3	1079	705	1294
Edit Copy Delete	18	6175	PCCOE	IT	Pune	1	4	3	1	0	3	1290	0	1435
Edit Copy Delete	19	6276	Cummins(women)	CE1	Pune	1	4	3	2	1	2	824	2840	1133

Console

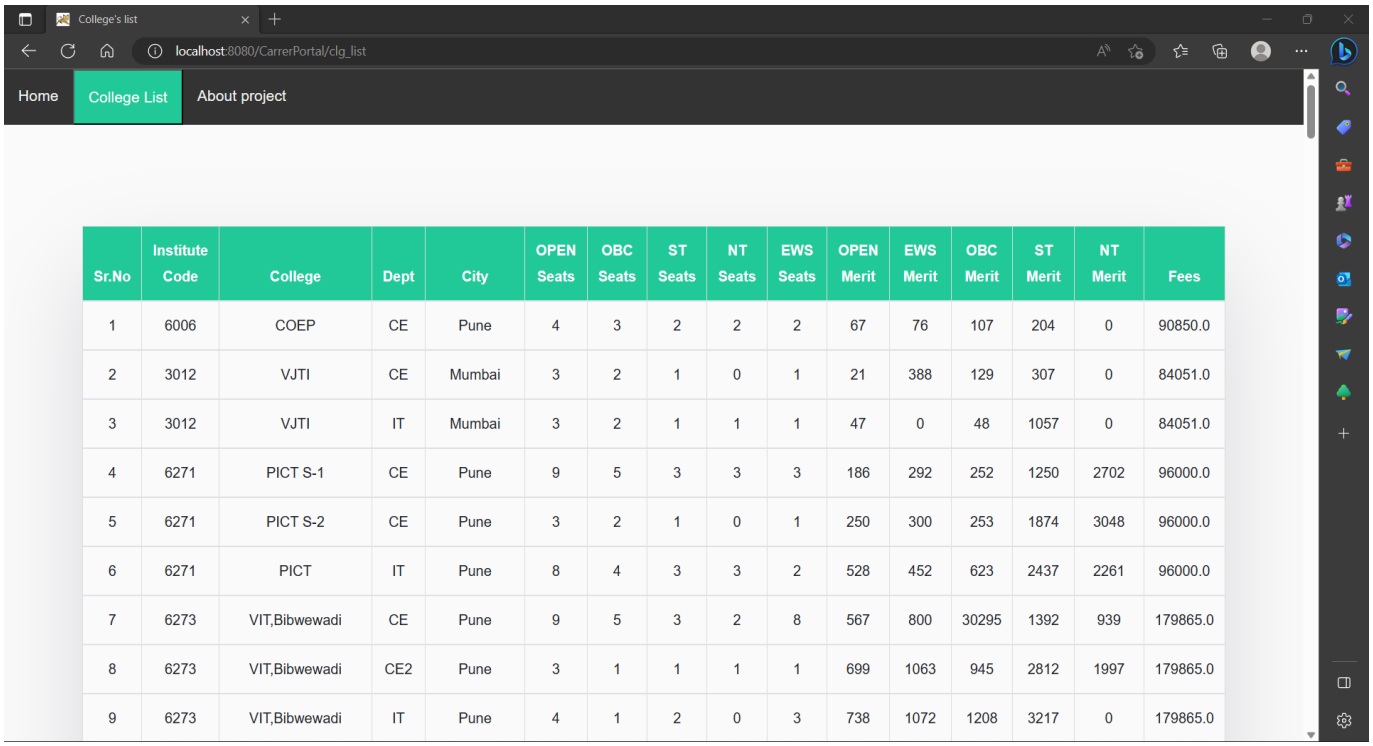
- Home Page



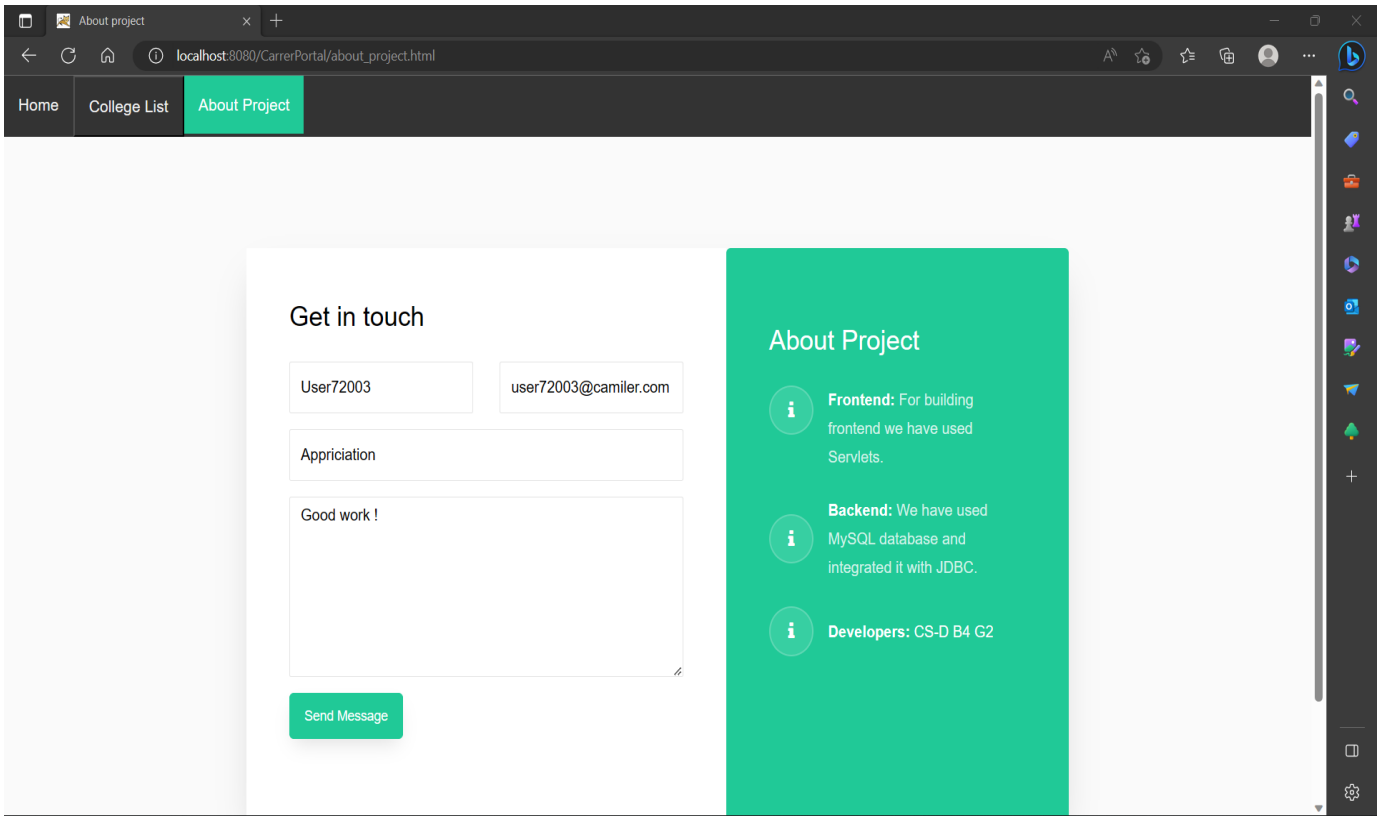
- College Recommendation Page



- College Merit List



- About Project



6. Conclusion

Our College Portal application provides an efficient and reliable solution to simplify the college selection process for students. By utilizing the latest technology, including Java, Servlets, HTML, and MySQL, we have developed a user-friendly interface that helps students find the right colleges that match their merit, caste, and branch preferences. Our application not only saves students time and effort in the college selection process but also helps them make informed decisions about their academic futures. With our feedback page, students can provide suggestions for improving the application, ensuring that we continue to provide a high-quality service that meets the needs of our users.

Overall, our College Portal application is designed to help students achieve their academic goals by providing a comprehensive solution for college selection. We believe that with our application, students can make better-informed decisions about their college choices, find colleges that fit their unique needs and goals, and ultimately increase their chances of academic success.