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Chapter 1

Introduction

1.1Problem Definition

This is a web-based program that is primarily designed for educational institutions. It aims to solve several issues related to assigning subjects to students based on their merits and preferences. Both teachers and students can log in to the site using their personal information. However, the main purpose of this application is to assist students in filling out the form for OET courses. Once the form is completed, the system will allocate courses to students based on their preferences. Additionally, teachers can access the attendance sheet of students who are assigned to their courses.

1.2 Motivation

The motivation behind the development of the student subject allotment system project is to provide a fair and efficient way to assign subjects to students based ontheir merits and preferences. This system aims to eliminate the traditional method of manually allotting courses to students, which is time-consuming and prone to errors. The web application is designed to streamline the subject allotment process, making it easier for both students and teachers to manage and monitor their course schedules. By automating this process, the system can reduce the workload on teachers and ensure that students are assigned to courses that best match their academic interests and abilities. Ultimately, the student subject allotment system aims to enhance the educational experience of students by providing a more efficient and personalized course selection process. The student subject allotment system project is motivated by the need to enhance the educational experience of students by providing a more efficient and personalized approach to subject allocation. The traditional method of allotting courses to students is often done manually, which can be a time-consuming and error-prone process. This system is designed to eliminate these issues by automating the course selection process, making it easier and faster for both students and teachers to manage their schedules.

1.3 Scope of project

The scope of the student subject allotment system project includes the development of a web- based application that enables educational institutions to automate and streamline the course selection process. The application will have a user-friendly interface that allows both students and teachers to log in and access the necessary features.

The primary function of the application will be to automate the course allocation process. Students will be required to fill out a form indicating their preferred courses, and the system will allocate courses based on their academic records and preferences. The system will ensure that the course allocation process is fair, efficient, and personalized

This project is being made for TY and LY students. There are 5 different courses of OET for both years and every course will be taken by new faculty and their details are as follows:

Table.1 for TY,

Sr. No.	Course Name	Department name
1.	Basics of Python	Prof.Heena
2.	Web Development	Prof.Sanjay
3.	NLP	Prof.Vishal
4.	Data science	Prof.Sakshi
5.	Blockchain	Prof.Riya

Table.2 for LY,

Sr. No.	Course Name	Department name
1.	Data analytics	Prof.Harsh
2.	Machine Learning	Prof.Sarika
3.	Cyber security	Prof.Deepa
4.	UI Programming	Prof.Mayur
5.	Big Data	Prof.Kajal

After successful registration, the student can login and fill the form. The form is designed in such a way that TY students will able to see only their courses and LY students will able to see only their courses. After the form is filled by all students, the system will automatically allot the courses to students based on CGPA and preferences. Every faculty will able to see the attendance sheet of students they had got in their respective course.

Chapter 2

Background Work

2.1 Literature Review

The Student OET Allotment System is a software application designed to optimize the process of assigning students to suitable courses based on their academic records, preferences, and availability of seats. The system aims to provide an efficient and fair allocation process while minimizing errors and reducing the workload of administrators.

Several studies have investigated the use of software applications in the context of student course allocation systems. For example, a study by Xiong et al. (2020) proposed a genetic algorithm-based course allocation system that aimed to improve the accuracy and efficiency of the allocation process. The study reported that the proposed system achieved higher accuracy and reduced the workload of administrators compared to manual allocation methods.

Another study by Hu and Zhang (2019) proposed a course allocation system based on a neural network model. The system aimed to predict the suitable course for each student based on their academic records, preferences, and other relevant factors. The study reported that the proposed system achieved high accuracy and reduced the time and effort required for course allocation.

Moreover, a study by Choudhary et al. (2018) proposed a course allocation system that used a modified ant colony optimization algorithm to optimize the allocation process. The system aimed to balance the workload of teachers and ensure that all students are assigned to suitable courses. The study reported that the proposed system achieved higher accuracy and reduced the workload of administrators and teachers.

In conclusion, the literature review shows that several studies have proposed course allocation systems based on various optimization techniques, such as genetic algorithms, neural networks, and ant colony optimization. These systems aim to provide an efficient and fair allocation process while minimizing errors and reducing the workload of administrators. The Student OET Allotment System can benefit from the insights gained from these studies to improve the allocation process and achieve better results.

Chapter 3

Implementation

3.1 Methodology

The methodology for developing the Student OET Allotment System can be divided into several phases, including requirements gathering, design, implementation, testing, and deployment. Here is a brief overview of each phase:

Requirements gathering: In this phase, the requirements for the system are identified through interviews with stakeholders, such as students, teachers, and administrators.

Design: In this phase, the system's architecture and user interface are designed based on the requirements.

Implementation: In this phase, the system is developed using the design specification.The implementation involves writing code for the system's components and integrating them into a cohesive system. During this phase, regular code reviews should be conducted to ensure code quality and adherence to coding standards.

Testing: In this phase, the system is tested to ensure that it meets the requirements specification document's functional and non-functional requirements. Testing should be conducted at multiple levels, including unit testing, integration testing, and system testing.

3.2 Technologies used

Front-end: Html,CSS,Javascript,Bootstrap

Back-end: Php

Database: MYSQL

Chapter 4

Results and Discussion

4.1 Results and Discussion

The web-based Student OET Subject Allotment System has been developed and implemented successfully, offering students the ability to provide their subject preferences and CGPA, and then allocate subjects based on their preferences and academic performance. After pressing the "ALLOT" button, the admin can view the list of students allotted to each department.

We faced technical challenges during the development and testing phase, such as data validation, algorithm design, and user interface design. Nevertheless, we overcame these challenges with determination, resulting in a functional and user-friendly application.
The system's algorithm considers students' CGPA and subject preferences to assign them the best-suited subject. Additionally, the system ensures that each student receives one of their preferred subjects, and the department receives the correct number of students for each subject.

In general, the Student OET Subject Allotment System is an effective tool that simplifies the subject allocation process for students and departments. We expect it will increase theefficiency of the subject allocation process in the future.

The system's algorithm has been designed to ensure that each student receives one of their preferred subjects while ensuring that the department gets the right number of students for each subject. This helps to improve the efficiency and accuracy of the subject allocation process, which in turn can save administrative costs and resources.

Overall, the Student OET Subject Allotment System has the potential to simplify and streamline the subject allotment process for students and departments, and we anticipate that it will help enhance the efficiency of the allocation process in the future.

Chapter 5

Conclusion and Future Scope

5.1 Conclusion & Learnings

To sum up, the Student OET Subject Allotment System is an essential tool for simplifying and streamlining the subject allotment process for both students and departments. By utilizing its automated algorithm and user-friendly interface, we can anticipate more precise and effective subject allocation. The triumph of the system underlines the significance of utilizing technology to enhance educational procedures andoutcomes

Furthermore, the success of this system underscores the importance of harnessing the power of technology to streamline complex tasks and improve outcomes in the educational realm. As such, this project serves as an excellent example of how innovative technologies can be leveraged to create tangible benefits for students, teachers, and administrators alike.

The creation and integration of the Student OET Subject Allotment System provided valuable insights into the best practices for successful project development and implementation.Most notably, this process emphasized the importance of collaboration and communication between project stakeholders to ensure that everyone was on the same page and working towards a common goal.Additionally, the project highlighted the significance of attention to detail, particularly with regards to data validation and algorithm design. By implementing rigorous testing protocols and carefully considering every aspect of the system's design, we were able to ensure that the system functioned optimally and provided accurate results.Overall, the creation and implementation of the Student OET Subject Allotment System provided a valuable learning experience and highlighted the importance of careful planning, collaboration, attention to detail, and user experience in the development of innovative technological solutions.

5.2 Future Scope

- Integration with other educational systems: The system could be integrated with other educational systems, such as learning management systems and grade tracking systems, to provide a more comprehensive and streamlined educational experience.
- Expansion to other educational institutions: The system could be adapted for use in other educational institutions, such as high schools, community colleges, and vocational schools, to help improve the subject allotment process in a broader rangeof educational contexts.
- Continuous improvement: The system could be continually improved and updated to incorporate new features and functionalities based on user feedback and changing educational needs. For example, new algorithms could be developed to more accurately allocate subjects based on student preferences and performance.
- Enhanced security features: The system could be fortified with additional security features, such as multi-factor authentication and data encryption, to ensure the protection of sensitive student information.

Chapter 6

Web Application

6.1 Functional and non-functional requirements

Since this is a web application, the requirements are rather modest.

Functional Requirements (for Web application)

- Login: This feature allows users to authenticate themselves by entering their credentials, such as username and password. A login system will help ensure that only authorized users can access the system and perform specific actions.

- Input Form: An input form is a user interface element that allows users to enter data into the system. In the context of your project, an input form could be used to gather information about students, such as their name, contact information, and academic records.

- Allotment Form: An allotment form is a feature that assigns students to OET courses based on their preferences, academic records, and availability of seats. This feature should be designed to optimize the allocation process and ensure that all students are assigned a suitable course.

- Storage in Database: The system should store all the data entered by users, such as student information, course information, and allocation results, in a database. This feature allows the system to retrieve data when needed and ensure data consistency.

- Course Management: This feature allows admin to manage courses by adding or removing them from the system. It also enables administrators to update course information such as the course description, duration, and availability of seats.

Non - Functional Requirements (Web application)

- **Performance**: High Accuracy.
- **User-friendliness**: Easy to use, User-Friendly interface
- **Privacy**: The system should not collect user data without their permission
- **Reliability**: No Frequent downtimes.
- **Maintenance**: Simple Process for Maintaining the Web Application.

6.2 Implementation

Input of the system:

- Login (both)
- Fill the form for course allotment(students)

Output of the system:

- View results of courses allotted (students)
- View attendance sheet of students (department)

Figure.1 Work flow diagram (Department)

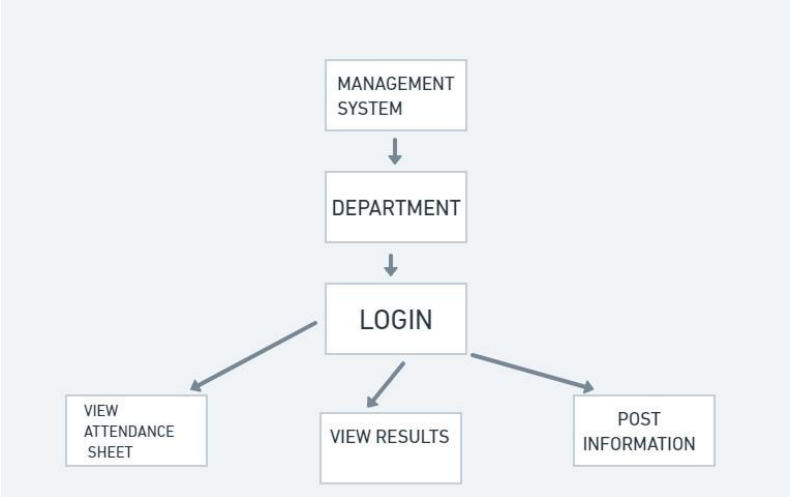
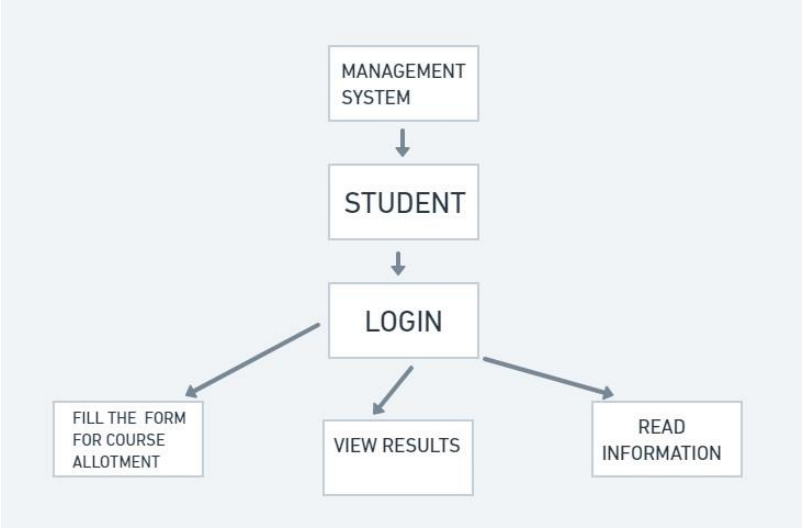
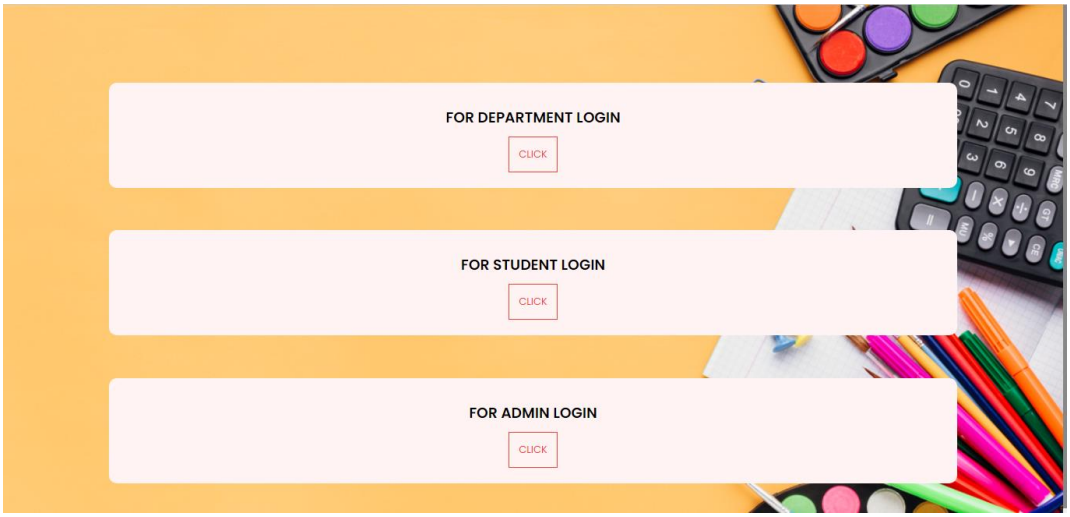


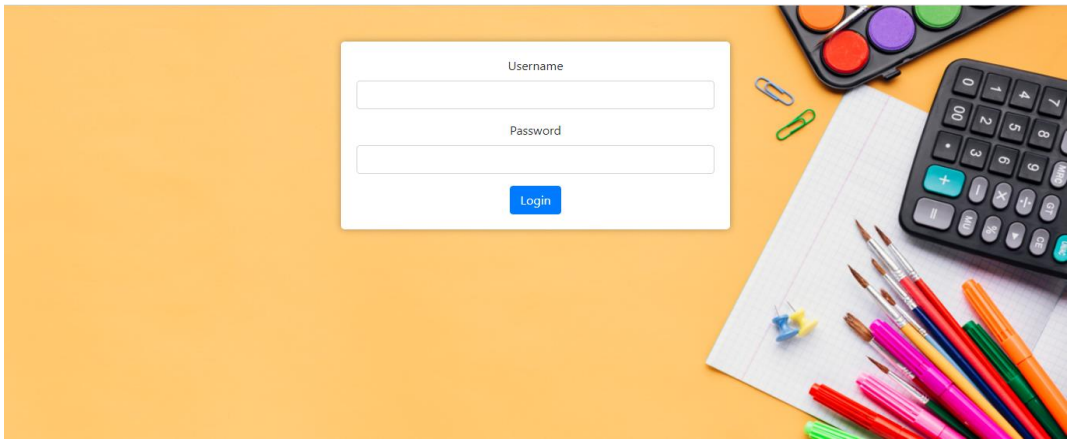
Figure.2 Work flow diagram (Student)



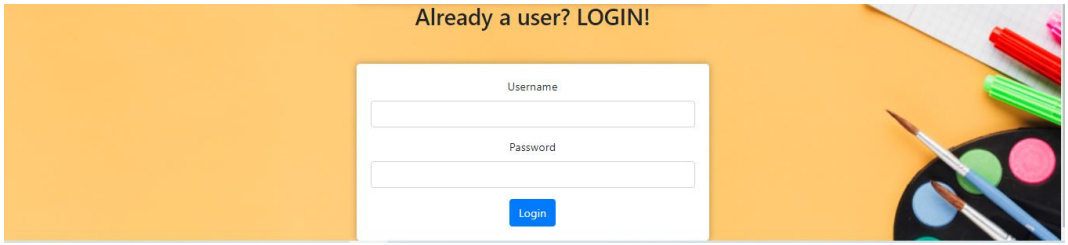
6.3 Screenshots

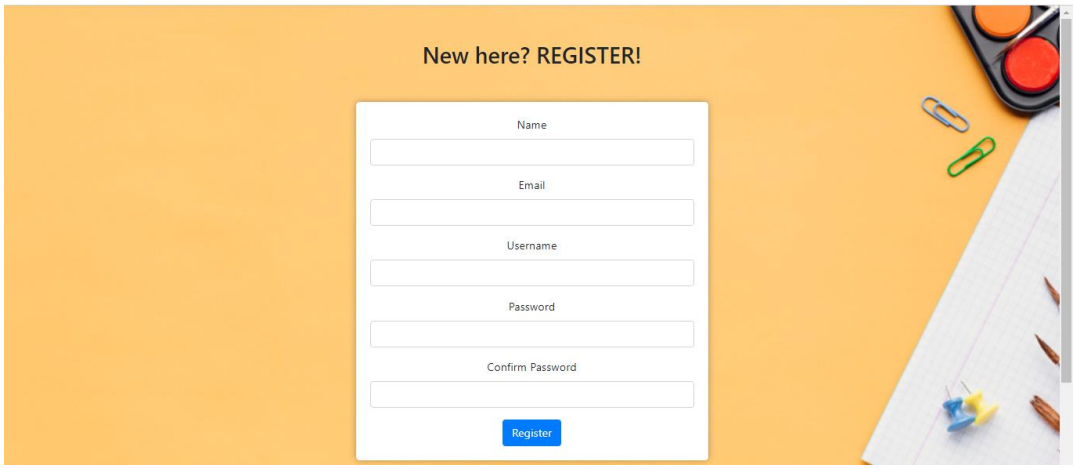


Login for department & admin

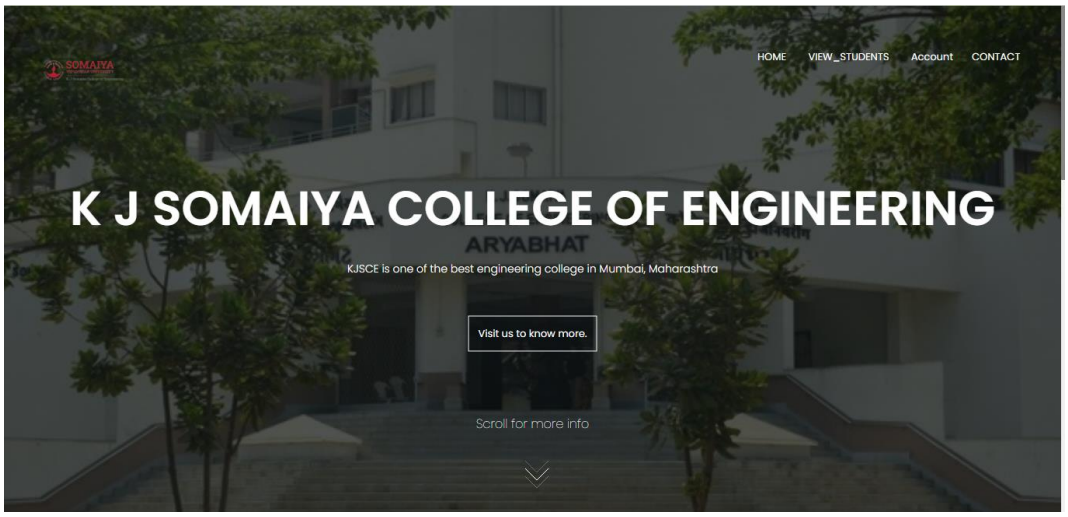


Login for Students

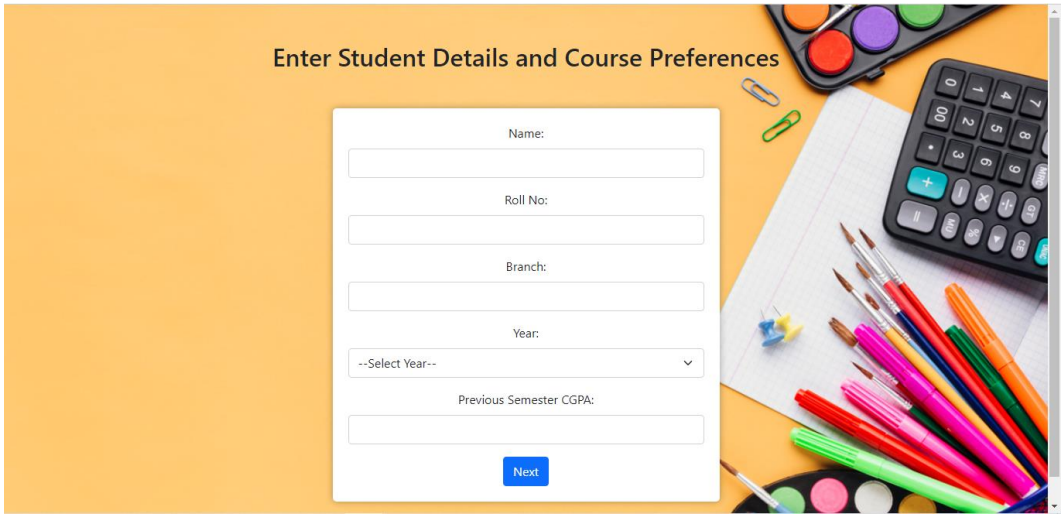


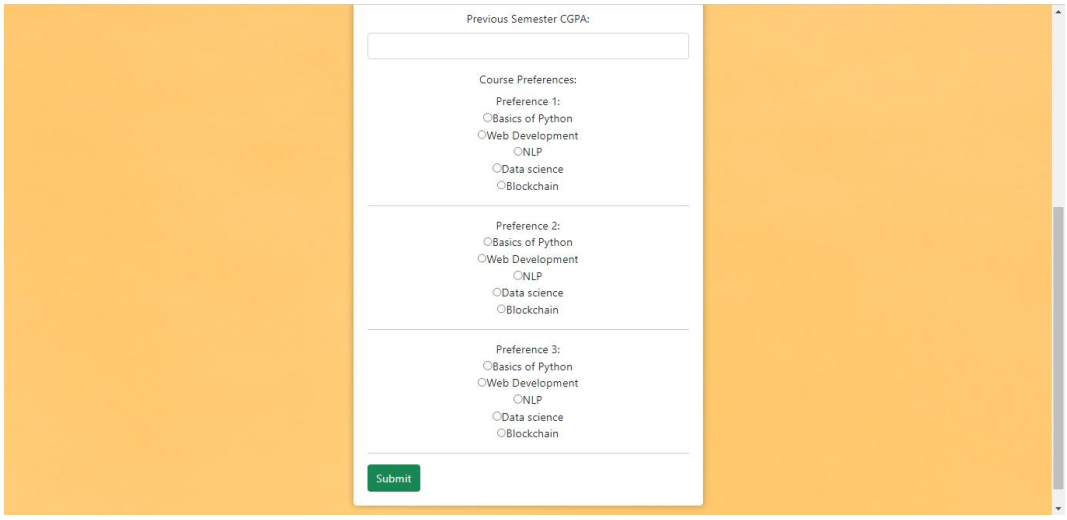


Home page



OET form for students





After allotment, Attendance sheet of students in department's account.

COURSE: Basics of Python

Attendance Sheet

Student Name	Roll No	Branch	Signature
Michael	496664	CS	
Susan	928206	EXTC	
Emily	791251	IT	
Jessica	199128	EXTC	
Michael	690057	EXTC	
John	216304	MEC	
Robert	498803	EXTC	
John	868255	CS	
Mary	876769	CS	
Michael	702636	EXTC	
Jessica	336435	EXTC	
Emily	983232	EXTC	

Allotment results in student's account

TY STUDENTS

Name	Roll no	Branch	CGPA	Course
Michael	496664	CS	9.5	Basics of Python
John	318240	EXTC	9.5	Data science
Michael	345371	MEC	9.5	Data science
David	160876	IT	9.5	Blockchain
Michael	845072	CS	9.5	NLP
Mary	268292	EXTC	9.3	Blockchain
David	822208	IT	9.3	NLP
Robert	223359	CS	9.3	Web Development
Michael	117394	EXTC	9.3	NLP
David	819921	IT	9.2	Blockchain
David	756823	IT	9.2	Blockchain
Susan	928206	EXTC	9.2	Basics of Python
Emily	791251	IT	9.2	Basics of Python
Michael	605225	IT	9.1	NLP
Jessica	199128	EXTC	9.0	Basics of Python
Robert	672059	CS	9.0	NLP
Michael	690057	EXTC	9.0	Basics of Python
John	216304	MEC	9.0	Basics of Python
Susan	481083	CS	8.9	Web Development

Contact page

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