Course 360

Software Design

CSCI-P465/565 (Software Engineering I)

Project Team

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1. Introduction

1.1 System Description

The main purpose of this project is to develop a Course Registration Management System which would provide students with a unified module, not only letting the students register for the courses and look up the course details but also the facility to chat with the professors and registered students. It would facilitate a consolidated view of the course details, seats available, ratings of the professor and past student grade records. Similarly, the faculty will also be able to view their courses , registered students, etc. The system will also have payment portal for the students to pay their fees. Registrar will be the administrator, who has the central authority to manage the student and professor account.

1.2 Design Evolution

Component-based development techniques involve procedures for developing software systems by choosing ideal off-the-shelf components and then assembling them using a well-defined software architecture. It saves time and money when building large and complex systems: Developing complex software systems with the help of off-the-shelf components helps reduce software development time substantially.

1.2.1 Design Issues

It works only on LINUX system and compatible with the system having browsers installed.

1.2.2 Candidate Design Solutions

Now in an object-oriented language, this one large program will instead be split apart into self contained objects, almost like having several mini-programs, each object representing a different part of the application. And each object contains its own data and its own logic, and they communicate between themselves.

1.2.3 Design Solution Rationale

Saves time and money when building large and complex systems: Developing complex software systems with the help of off-the-shelf components helps reduce software development time substantially.

- Autonomous – Components should be independent from each other. Components should be able to continue to function when other components are not available.
- Loosely coupled – Components should be loosely coupled through explicit service definitions and be re-usable across applications.
- Performance – Components should be capable of handling load as multiple applications may use one and the same component.

1.3 Design Approach

1.3.1 Methods

Hands down mockup , got validated from customers

1.3.2 Standards

Top down method and Camel naming convention is being used

1.3.3 Tool

Atom, Pycharm, postman, postgresSql, reactjs,nodejs, github

Describe any tools that you plan to use to assist you in developing the design, and specify exactly what products will be generated by the tools.

2. System Architecture

2.1 System Design

NA

2.2 External Interfaces

NA

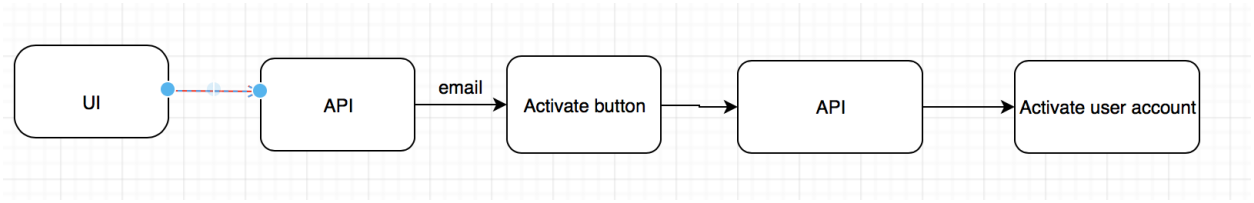
3. Component Design

Component Name: Provide a unique component name
Sign in
Forgot password
Registration
Add Course
Delete Course
Edit course
Retrieve all courses
Retrieve course by name
Retrieve all professors
Retrieve all students
Retrieve professor calendar details

Component Description:

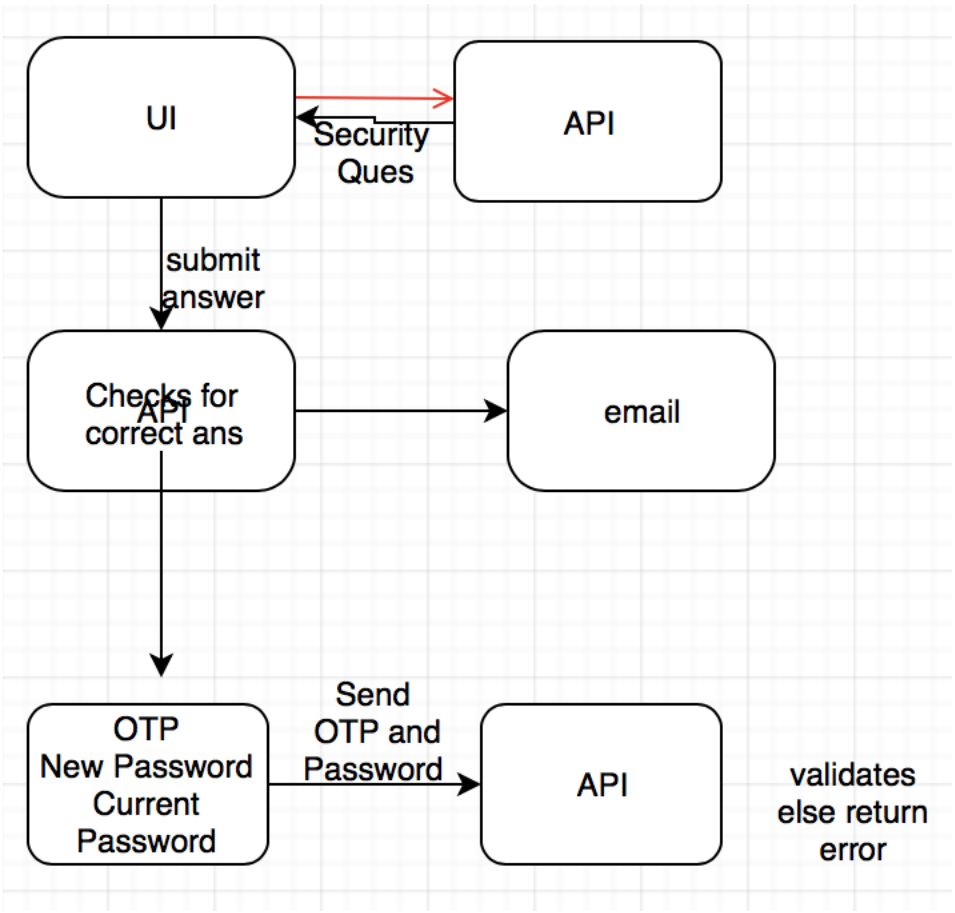
Registration

User gets the screen to enter the registration details , activation mail is send to the user's email id. The user clicks on the link to activate the account.



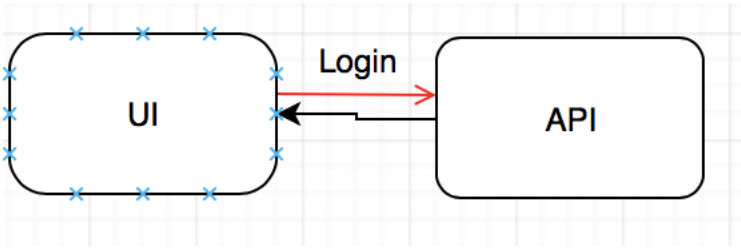
Forget Password

Incase the user forgets password, it can be retrieved using the security question. Once the user clicks on the forgot password , one time password is send to their registered email id. The user can use this email to answer the security question to reset the password



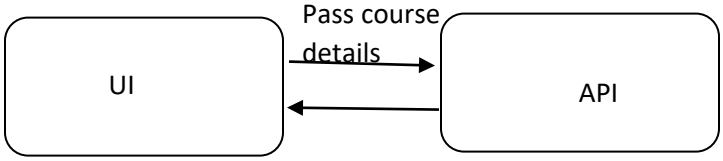
Login

User needs to enter email id and password to login



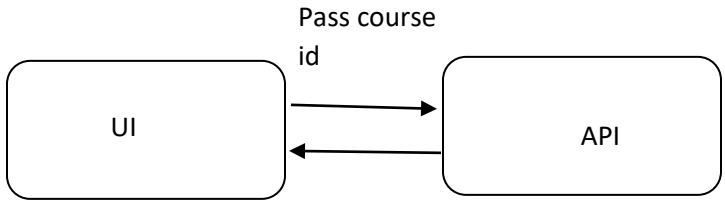
Adding a Course:

Admin will pass the course details while adding the course



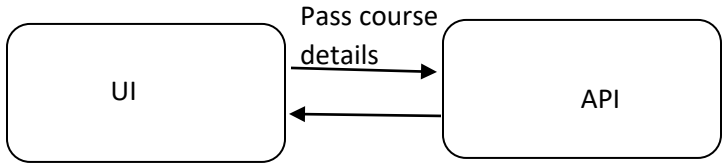
Deleting a Course:

Admin will delete a course by passing course id.



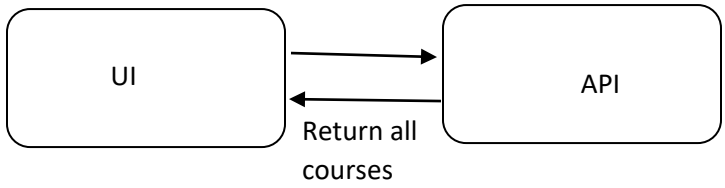
Updating a Course:

Admin will be able to update the course by passing the course details

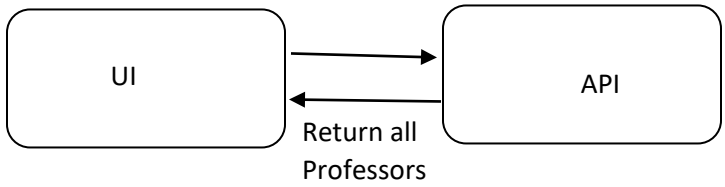


Retrieving all courses

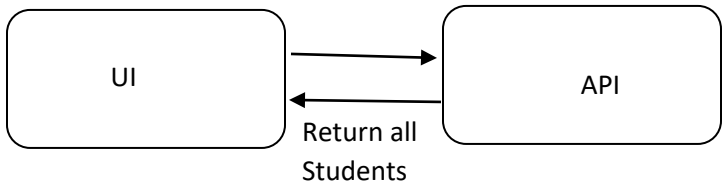
All Courses are returned when this API is called



Retrieving Professors:
Admin can retrieve the details of all the professors.

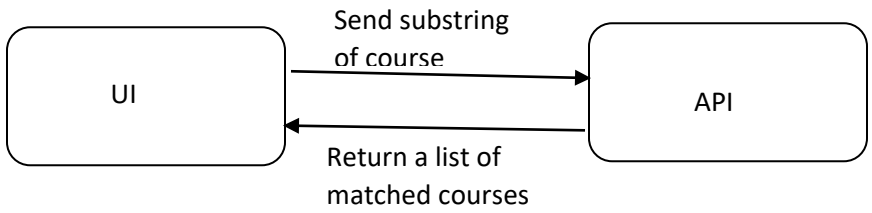


Retrieving Students:
Admin can retrieve all the students.



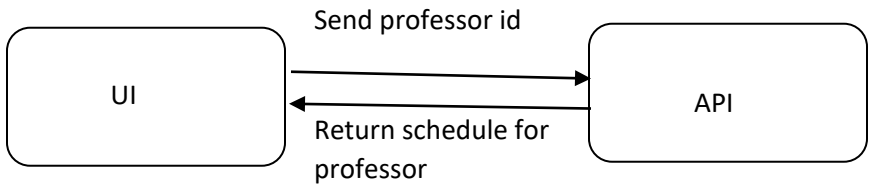
Course Search:

Courses can be searched by passing a substring to the API. The API will return a list of matching courses.



Retrieving calendar data for professor:

A professor can retrieve his calendar by passing professor id. The API will return his schedule



Responsible Development Team Member

Component Diagram

Sai has designed the component diagrams.

Component User Interface

UI was developed by Aravind and Kriti

Component Objects

Sai and Juhi have developed backend APIs for the components.

Component Interfaces (internal and external)

Component Error Handling

Revision History

First Prepared on 09/28/2018
Revised on 10/14/2018

Page Author/Creator: Sai Rohith Achanta
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