
SOFTWARE REQUIREMENTS SPECIFICATION

for

Cloud Based Career Guidance
System

Prepared by :
Anupam Sanidhya (510817049)

Submitted to : Prof Ruchira Naskar

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1 Introduction

1.1 Purpose

A Career Guidance System serves as platform where students can see various career opportunities and fields of interest available after high school. Based on a series of tests, it also intends to suggest students of which careers would be suitable for them. It also provides e-books support for learners.

1.2 Project Scope

We describe what features are in the scope of the software and what are not in the scope of the software to be developed.

In Scope

- Displaying different colleges and their branches of study
- Displaying and suggesting various streams of study after high school
- Providing with e-books
- User authentication via login

Out of Scope

- Giving absolute assurance of getting a desired branch of study
- Providing admission in the preferred choice of college
- Hierarchical display of stream of study and institutions

2 Overall Description

2.1 Product Perspective

The Cloud Based Career Guidance System seeks to automate the job of suggesting the best possible career based on the candidates capability with a series of tests. It should serve as a remote way of seeking assistance for counselling purposes, just as in real life with a mentor. It shall be available as web based application accessible from the browser.

2.2 User Characteristics

- i.) The student must have registered himself on the portal.
- ii.) The student must be prepared for the test which he/she is about to give and shall have qualified high school.
- iii.) The student should have a clear idea about various fields of study and a fair view of educational institutions.

2.3 Principal Users

"Cloud Based Career Guidance System" has 3 types of users -

- Students (the primary user)
- Admin
- System

2.4 Product Functions

Before using the main function of the software; For using the Cloud Based Career Guidance system, the users need to create an account with a valid phone and email.

The use cases for this system are :-

Class of Use Cases	Use Cases	Description of Use Case
Use cases related to System Authorization	Create Account	creates a new account
	Login	login into the CBCGS
	Change Password	change the password for an existing account
Use Cases related to E-books	Add E-Books	add Ebooks to the database
	Remove E-Books	removes Ebook from the database
	Search E-Books	search the ebook by user entered parameters
	Read E-Books	launches ebook viewer in a new tab
Use Cases related to College/Courses	Add College	Add a college and its details
	Add Course	Add a course and its details if the college exists
	View College	View all the details of the college along with the courses offered
	Filter College/Course	Return the list of college/courses based on user search criteria
	Remove College	Remove a college and its details from the database
	Remove Course	Remove a course and its details from the database
Use cases related to automated email	Email Verification	automated mails for email verification
	Advertisements Mailing	automated mails when a new book/material is added in the field of interest
	Test Series Scores Mailing	automated mailing of scores of test series scores and analysis
Use cases related to Tests	Create Test	Create a test with different types of questions
	Record Answer	Record answer to the test series
	Delete Test	Delete a test
Use cases related to counselling	Create Report	Create a automated career guidance report

2.5 Assumptions and Dependencies

The website requires an active internet connection.

Availability of college and courses offered by them are subject to change.

2.6 General Constraints

Since CBCGS is a web based application, an internet connection is required at all times.

It's a multiple user software.

3 System Requirements and Features

3.1 Description and Priority

1. Add To Database : Ability of the system admin to add details to the database of college/courses/ebooks details.
2. Create Test (Admin) : Allow the Admin to add or removes tests from the system.
3. Email-Verification : Used for sign up/ password change.
4. View/Search/Filter College/Courses : This feature shall allow the user to find a choice suitable to their needs.
5. Read E-books : E-books providing information about fields of study, types of colleges and courses offered by them.
6. Creation of Tests : Essential before automated tests can be taken.
7. Skill Identification : This is supposed to help users identify their skills and choose their career path accordingly as to be determined by a test series.
8. Automated Emails : e-mails for automated adverts and test scores.

3.2 Technology Stack

The Technology stack is -

- Backend : NodeJS with Express Framework
- FrontEnd : React
- Database : MongoDB

3.3 Functional Requirements

3.3.1 Use Cases Related to System Authorization

1. **Create Account**
Primary Actor : User
Pre-Condition : Internet Available

Main Scenario :

1. User Loads the homepage by visiting the URL from the browser
2. "Create Account" option chosen
3. User prompted to fill in the form with name, email, phone number and provide a password and confirm password
4. Validate the details
5. Send OTP to phone and verification email
6. User verifies the account.
7. New User added to database

Alternate Scenario

- 5(a) Password and Confirm Password Mismatch
 - i.) Prompt the user to enter correct the field
 - ii.) Allow the users to reenter details
- 5(b) Email already exists
 - i.) Prompt the user to try logging in as the account exists.
 - ii.) Allow the users to re-enter details or reset password

2. Login

Primary Actor : User

Pre-Condition : Internet Available

Main Scenario :

1. User Loads the homepage by visiting the URL from the browser
2. User Prompted for Login and Password
3. User Enters Login id and password
4. System authenticates credentials
5. User's home page displayed

Alternate Scenario

- 4(a) Authentication fails
 - i.) Prompt the user to enter correct credentials
 - ii.) Allow the users to reenter credentials

3. Password Change

Primary Actor : User

Pre-Condition : User Logged In

Main Scenario :

1. Change Password Request Initiated
2. User Prompted for Old Password, New Password and Confirm New Password
3. System Validates the details
4. Password Changed

Alternate Scenario

- 4(a) Wrong Old Password

- i.) Prompt the user that entered password is incorrect
 - ii.) Terminate the operation
- 4(b) New Password and Confirm New Password mismatch
 - i.) Prompt the user of the mismatch detected
 - ii.) Allow the user to enter the details again

4. Test Admin

Primary Actor : Admin

Pre-Condition : Admin Privileges Enabled

Main Scenario :

1. Admin details like name, email, phone, password are entered in the form
2. The System Validates the details
3. The admin is created with a given email id and a password

Alternate Scenario

- 3(a) Duplicate Email
 - i.) Prompt the admin of duplicate email id
 - ii.) Terminate the operation

3.3.2 Use Cases Related to E Books

1. Add E Books

Primary Actor : Admin

Pre-Condition : Admin Privileges Enabled

Main Scenario :

1. Add E-Book initialized
2. Admin uploads the book
3. Details like book name, author, subject, ISBN, Date of publication, link to file entered
4. System validates the details
5. Book added to database

Alternate Scenario

- 4(a) Invalid ISBN
 - i.) Prompt the admin of invalid ISBN and to enter a correct ISBN
 - ii.) Repeat the Validation

2. Remove E Books

Primary Actor : Admin

Pre-Condition : Admin Privileges Enabled

Main Scenario :

1. Remove E-Book initialized
2. Admin gets a list of books after using filters like ISBN, subject, date of publication, author name

3. Admin selects the book(s) to be removed
4. Admin confirms the selection
5. Book(s) removed from database

3. Search E Books

Primary Actor : User

Pre-Condition : User Logged In

Main Scenario :

1. Search Query Form includes keywords and optional field selections like book name, author name, date of publication, subject
2. The search query form is submitted
3. System queries the database and returns a list of books as result

4. Read E Books

Primary Actor : User

Pre-Condition : User Logged In

Main Scenario :

1. The book from list of books in search query is selected
2. The book opens in a new tab using a e-book reader plugin

Alternate Scenario

- 2(a) The link is damaged or the file is missing
 - i.) Display an error message and prompt the user to move back

3.3.3 Use Cases Related to College/Courses

1. Add College

Primary Actor : Admin

Pre-Condition : Admin Privileges Enabled

Main Scenario :

1. Add College initialized
2. Details like College Name, Category, Courses offered and other details are filled in a form
3. Images are uploaded
4. The form is submitted
5. System queries the database to add the new college.
6. System does a match with existing records and checks for duplication
7. A Unique ID is assigned to the college

Alternate Scenario

- 6(a) System finds duplicate value
 - i.) Prompt the admin of the issue
 - ii.) The admin acts on his discretion

2. **Add Course**

Primary Actor : Admin

Pre-Condition : Admin Privileges Enabled

Main Scenario :

1. Add Course initialized
2. Query the database to get the college(s) for which the course is to be entered.
3. Details like Course Name, Category and other details are filled in a form
4. The form is submitted
5. System queries the database to add the new course corresponding to an existing college.
7. A partially Unique ID is assigned to the course

Alternate Scenario

- 5(a) College does not exist in the database
 - i.) Prompt the admin of the issue
 - ii.) Restart the process from 2

3. **Filter College/Course**

Primary Actor : User

Pre-Condition : User Logged In

Main Scenario :

1. Search Query Form includes keywords and optional field selections like college name, course name, category,etc.
2. The search query form is submitted
3. System queries the database and returns a list of colleges as result

4. **View College**

Primary Actor : User

Pre-Condition : User Logged In

Main Scenario :

1. User Selects a college from the given returned list of colleges
2. System queries the database to get the details of the college and its associated courses
3. The result is displayed on the screen

5. **Remove College**

Primary Actor : Admin

Pre-Condition : Admin Privileges Enabled

Main Scenario :

1. Remove College initialized
2. Admin gets a list of colleges after using filters like College name, category, date of establishment,courses

3. Admin selects the college(s) to be removed
4. Admin confirms the selection
5. College(s) removed from database

6. **Remove Course**

Primary Actor : Admin

Pre-Condition : Admin Privileges Enabled

Main Scenario :

1. Remove Courses initialized
2. Admin gets a list of courses after using filters like course name, category, college name
3. Admin selects the colleges for which the course is to be removed
4. Admin selects the course(s) to be removed
5. Admin confirms the selection
6. Course(s) removed from database

3.3.4 Use Cases Related to automated email

1. **Email Verification**

Primary Actor : System

Pre-Condition : Create Account Requested

Main Scenario :

1. Send a verification link to the requested email id
2. Wait for the link to be clicked
3. When the link is clicked then the verification is complete
4. Verification status added to database for the corresponding user

Alternate Scenario :

- 3(a) Link not clicked for 10 minutes since the time of generation
 - i.) The Link expires and on being clicked error message is displayed
 - ii.) The provisional records for the corresponding user removed from the database

2. **Advertisement Mailing**

Primary Actor : System

Pre-Condition : Admin creates a new advertisement

Main Scenario :

1. Filter out the target email ids
2. Broadcast the advertisement to all filtered out emails

3. **Test Series Scores Mailing**

Primary Actor : System

Pre-Condition : Test series taken and completed by the user

Main Scenario :

1. System assess the answers and create scores
2. The scores is mailed to the user's email id

3.3.5 Use Cases Related to Test Series

1. Create Test

Primary Actor : Admin

Pre-Condition : Admin Logged In

Main Scenario :

1. A "Create Test" interface is displayed
2. Admin enters the questions and corresponding options (one or multiple choice)
3. Admin creates a sample solution for autograding
4. Admin submits the test to be created
5. The test is added to database.

2. Record Answer

Primary Actor : System

Pre-Condition : User has given the test(s)

Main Scenario :

1. User Initiates the test
2. A new window opens in with test interface
3. The System records the answers to the question being answered

3.3.6 Use Cases Related to counselling

1. Create Report

Primary Actor : System

Pre-Condition : User has completed test(s)

Main Scenario :

1. System accepts the recorded answer from the database
2. The answers are passed through an autograder
3. System generates the marks distribution along segments, correct ratio, final score, highest marks
4. Sytem suggests the appropriate course of study for the student.

4 Other Nonfunctional Requirements

4.1 Performance Requirements

Can run on any decent computer or mobile based device supporting an internet connection.

4.2 Security Requirements

Both e-mail and phone number shall be verified.

4.3 Software Quality Attributes

Testing is being continued so that the quality of the software is being maintained and all the requirements are fulfilled.

Database, logical schema, debugging and also UI test is required.