Software Requirements Specification

for

Student Advisor System

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CSE327: Software Engineering

28. October 2019

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Revision History

Revision	Date	Author(s)	Description
1.0	25.09.2016	Nusher, Shahriar, Jumar, Tanjeeb	First Draft
2.0	03.11.2019	Tanjeeb, Shahriar, Jumar, Nusher	User story added in functional requirement section.

Chapter 1

Introduction

1.1 Purpose

Higher educational institute students often face difficulties to know the proper information regarding their studentship status, determine what should be the best way to take courses or plan their academic career, to calculate their cgpa, avail services 'like lost found' and 'complaint box' and evaluate courses and faculty members remotely after the end of semester. Also the institute fails to provide effective advising options as there are not enough advisors around to advise or for not having a better platform. That is why we plan on developing this software to advise students for their upcoming courses and degree plan for certain educational institutes and to facilitate various features as an one stop service platform.

1.2 Intended Audience

This document is intended for anyone in the development, managing and working for This software.

1.3 Intended Use

The SRS contains product descriptions, interface requirements and other functional and non-functional requirements. Readers are requested to read the SRS document in the given sequence.

1.4 Product Scope

The purpose of this product is to let the students know information regarding their studentship, to help them advise the graduation path and which courses to taken in next semester based on their previous course history. It will take the students grades for individual courses and will calculate their CGPA. It will facilitate features like 'lost found', 'complaint box' and 'course faculty member evaluation' for the students.

1.5 Risk Definition

We are creating a software that will try to show studentship information, advise a particular student's future course plan based on their academic results and achievements, calculate CGPA and provide other online features but as we are developing a knowledge based system so it has a risk of not going through all the case scenario's and advise false direction.

Chapter 2

Overall Description

2.1 User Classes and Characteristics

2.1.1 User Classes

- Student class

2.1.2

- User can calculate CGPA.
- User can see which courses they will be able to take.
- User will get a suggestion of courses for next semester.
- User will get full degree plan based on current graduation situation.

2.2 User Needs

- Log In/ Log Out.
- Student Information
- Calculate CGPA.
- Suggest user the class timing according to user preference
- Suggestion of subjects for next semester.
- graduation Path.
- Report a problem.
- Faculty Evaluation

2.3 Operating Environment

The product will be an website which will advise students. So in backend we will use Django and we will use sqllite3 for database. we will use HTML, CSS, bootstrap and for backend connection we will use jinja2 templeting script. for knowledge based AI integration we will use python, more precisely we will use a module pyknow.

2.4 Constraints

- This system will work on our existing technical infrastructure. In future new technologies may introduce.
- The system will only use selective data set.
- The system shall be available for 99.99% of the time.
- It may advise false direction as this is knowledge based system.

2.5 Assumptions

- User has good command over English.
- User can basic terminologies like CGPA, Course Code etc
- User has a device capable of accessing the student portal.
- User must reliable internet connection.
- User knows how to operate web application.

Chapter 3

Requirements

3.1 Functional Requirements

1. As a user i want to have log in/out function for North South University Students Only.
   So that I can access the portal.

   Confirmation/Acceptance:

- User will need a North South University Identification number to create an account.
- User will be able to log in and log out of the system.
- Upon giving correct information, user will be redirected to the home page.
- User will remain in the login page and see "incorrect credentials, please try again" for providing wrong credentials.

2. As a user I want the system to show the studentship information.
   So that I can be aware of my information.

   Confirmation/Acceptance:

- User must have to fill the necessary fields for the first time.
- User will be able to see the information.
- User can update some information.
- User can change their password by providing user's existing ID number and password.

3. As a user I want a system to suggest specific courses in the next semester.
   So that I can decide which courses to take next semester.

   Confirmation/Acceptance:

- User will get a list of courses that should be taken for next semester.
- System will provide the course list based on the course's difficulty level, user's previous course history and current cgpa.
- User can also see the pre-requisite course tree to complete.

4. As a user I want to calculate my CGPA
   So that I can presume my probable cgpa by giving some test inputs.

   Confirmation/Acceptance:

- Calculated cgpa is already visible in the information section
- Using this feature user can presume their probable cgpa by giving some test inputs
- User must fill the necessary fields to calculate their cgpa.
- System will show the cgpa based on the grade history given by the user.

5. As a user i want a system which can suggest me class time for next semester according to my preference.

   Confirmation/Acceptance:

- User must fill the necessary field and let the system know user's preference.
- System will suggest user class time according to user's preference.
- User will be able to see the class timings of the courses.
- User can filter the courses based on user's preference.

6. As a user I want to see my full graduation path
   So that I may easily plan to taking courses accordingly.

   Confirmation/Acceptance:

- Completed and uncompleted courses will be shown by a dynamically designed flowchart.
- Upon hovering on the courses in the flowchart, user can see the grades for the courses.
- The color for a specific course will depend on the grades for that specific course.

7. As a user I want to let other users know what I lost and what I found in the campus
   So that everyone can easily find their lost items.

   Confirmation/Acceptance:

- User have to put text or image or both as input in 'lost and found' panel.
- User will have to fill up a contact information panel.
- After putting necessary inputs in panels the user have to click 'post' button to post.
- 'Lost and found' posts will be visible to every user.
- Posts can be filtered based on the post date and category.

8. As a user I want to complaint against someone or about something.
   So that rules and regulations can be maintained smoothly in campus premises.

   Confirmation/Acceptance:

- User have to put text or image or both as input in 'Complaint box' panel.
- After putting necessary inputs in panels the user have to click 'post' button to post.
- 'Complaint box' posts will be only visible to university administration.

9. As a user I want to let the administration know my evaluation on courses and respective faculty members at the end of the semester
   So that administration can be aware of the evaluation from student perspective of any course and respective faculty member. And furthermore can decide what steps should be taken future regarding that course and that respective faculty member.

   Confirmation/Acceptance:

- There will be one section for course and one for faculty member evaluation.

- User will see five radio button to rate any criteria in the scale of 1 to 5.
- User have to click ‘dot’ in each given evaluating point.
- Clicking ‘dot’ in each evaluating point is mandatory
- There will be a ‘comment’ section too where user can write comments

3.2 Non Functional Requirements

3.2.1 Performance Requirements

In order to assess the performance of a system the following must be clearly specified:

- Response Time : The application should load in less than 0.1second at all time
- Workload : The system should be capable of supporting 80,000 users
- Platform : Support for Multiple Devices

3.2.2 Safety Requirements

The necessary data will be stored in a secondary/backup database in case of emergency. If there is a loss/damage/harm to the web application, the important data can be found in the secondary/backup database.

3.2.3 Security Requirements

This product will conserve the confidentiality of the users and its private data. It will also make sure of other security options such as Session Management, Error Management, Authorization, Authentication etc.

Appendices

Appendix A

Glossary

Expert System: An expert system is a computer program that is designed to emulate and mimic human intelligence, skills or behavior. [1]

Jinja2: A Jinja template is simply a text file. Jinja can generate any text-based format. [2]

Graduation Path: Students degree plan based on their current academic status.

sqlite3: SQLite is a software library that provides a relational database management system. The lite in SQLite means light weight in terms of setup, database administration, and required resource. [3]

Django: Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of Web development, so you can focus on writing your app without needing to reinvent the wheel. It's free and open source. [4]

Bibliography

[1] https://www.techopedia.com/definition/613/expert-system

[2] https://jinja.palletsprojects.com/en/2.10.x/templates/

[3] https://www.sqlitetutorial.net/what-is-sqlite/

[4] https://www.djangoproject.com/