**Week 5 (10/10) Improved/enhanced version of the project-document submitted thus far..**

The main purpose of the functional specification is to explain what goals you are going to achieve for your Project, as opposed to how you will accomplish these goals. The functional specification, coupled with a management plan (which we will not write up formally) and a design (to be dealt with later), describe the proposal to your client. When accepted, these documents are a contract between you and your client about what you plan to deliver (and what he/she agrees to accept). Changes can be negotiated later and should be recorded as an appendix to this document. In writing this document, therefore, you should keep in mind that your audience will be a client (who in general is not an expert in computer science/software engineering) and your team members, who will want to refer back to this document particularly to be reminded of what they are supposed to be doing. The fact is that, in this course your client is just a user, and that your documents will be graded should encourage you to think and write as carefully as possible.

AVA An Automated Voice Activated Advisement System

Requirements/Specifications Draft

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Product Scope:

College campuses are known for having a surplus of majors/minors and hundreds to thousands of potential options for classes a student may need to take. With that being said, it may be hard to figure out which courses one should take when pursuing a degree. Students may accidentally take classes they don’t need, or take too many classes and overload themselves. In order to advise students in an efficient manner that doesn’t take too many labor hours, a voice activated advisement system has been developed in order to provide assistance in all areas of student advising. The system will allow a user to verbally communicate with an automated adviser, who will guide them through the process of picking the correct course(s).

Product Features:

* Recognize user voices essentially tested and trained by Machine learning model and multi-user.
* System should allow administrative views for editing and updating software.
* Be up to date and flexible with changing university graduation requirements and courses no longer being taught.
* The system will have upto date information about:
  + Computer Science departmental information:
    - Campus map and direction
    - Course curriculum
    - Course calendar
    - Staff extension and office hours
    - Admission and application
    - Programs and Events
  + Student services for Prospective, Current and Alumni:
    - Enrollment Records and Registration
    - Registered courses, credits for the term
    - View available courses for the term.
    - GPA and grading information
    - Transcript request
    - Course catalog
    - Degree Progress (in %)
    - Get an IT support
    - Setup appointment with Program coordinator
    - Provide feedbacks
  + Campus:
    - Help to connect with other departments/operator.
* Allow staff to login and manage the advising system. Such functionalities are:
  + Administrative privilege for editing and updating software.
  + “AVAAS” web-app will have functionality:
    - Dashboard
    - Calls recording
    - Automated ticket creation for user specific unresolved requests
    - Update bot pitch, bot gender, language
    - Update menu options of AVA system.
    - Change menu order of the bot
* Allow students to login and interact with the advising system. Such functionalities are:
  + View their course catalog.
  + View their transcript.
  + View available courses that can be taken.
  + Talk with an automated system that will provide feedback on any questions they have.
  + System should be user friendly and easy to use.
  + Student can filter the advisor system to specific:
    - Credit amounts in a given semester.
    - Full time/part time course loads, if an undergraduate student is partaking in 12 or more credits they are considered full-time, anything less is part-time. Anything less is part-time.
    - Time period of classes in the day.
    - Preferable concentrations of what courses they want.
  + Ask the system to calculate the current GPA of students, and the GPA they would have after the completion of following semesters courses. If GPA is low, the advising system will notify students about possible academic probation.
  + System should be able to generate multiple courses the user can pick from and the amount of courses they would need in order for the student to graduate on time.
  + System can give different instructor choices for the classes that are offered during the semester of the students choice. It will display the names of each professor that will be teaching the course, so if a student has taken/likes that professor then they can choose that course.
* Administrative alerts: Departmental and scheduled alerts eg. staff to meet virtually due to covid, ongoing fire investigation, scheduled IT outage for the department etc.

Users Characteristics:

* Students
  + The typical undergraduate student is between 18-23 years of age, although there are cases where some will be outside of said range.
  + Education level is undergraduate.
  + All undergraduates using the system are majored and/or minored in the Computer Science and Information Technology (CSIT) Department.
* School Administration
  + Presidents, Deans, Chairmen, Registrar, Professors, IT department, other staff and department: Health and Safety, Campus police and emergency administration.
  + Has the privileges to add/update any courses or students that need to be modified in the system.
  + Can view any information that the system advises to a student.
  + Bypass course size limits for students who require an already full class for graduation.

Constraints:

* Development tools: system will be built using Python, HTML, CSS, Bootstrap, JavaScript, Sqlite, and Flask.
* The developers are limited in terms of the level of security of the system; The developers can implement hashing for the passwords and disconnect user sessions when trying to go back after logging out.
* The developers will follow school regulatory procedures for the system.
* Hardware constraint: concurrently maximum 40 users to use the Advising system to search, update, modify student profile at University.

Assumptions and Dependencies:

* The developers have access to the university's database.
* The development team all have access to the system’s code.
* The system has a reliable server or system to be installed on.
* Changes in the original requirements may occur.

