Software Design Specifications Document (SDS)
For Patient Stroke Prediction

Version <1.1.0>

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1. Purpose

- *The purpose of this is to be able to provide accurate health information for patients in order to help them prevent future signs of strokes, prevent current status of getting a stroke, or even be able to help different communities gather health information in order to be able to predict stroke outcomes for their people. This project would be a very important breakthrough within the medical field. The ability for patients regardless of their professional status are able to access the system, simply answer a couple questions regarding their health such as age, living factors, bmi, etc and after inputting the information are able to come back with an outcome based on their own health factors. This will grant the ability for others to be able to predict their own outcome and based on this outcome are able to change for the positive to decrease their risk(s) factors. The project can even be utilized by hospitals to be able to help their patients that are already within their care.*

2. Scope

- *The system will ask the user specific questions and will have a limited selection of input text fields to write in. We decided to keep the project simple due to our time constraints. Allowing the user to input a variety of written comments would create a more challenging environment for the machine learning algorithms to figure out if the user's comments could contribute to a stroke. The selection of questions we will ask the user will be straightforward for the algorithm and will be picked based on which conditions cause strokes the most.*

3. Nature of the system

1. *The Product will be an executable program (.exe) allowing users to download it onto their operating systems of any type, input the correct information and achieve their results after utilizing the many different ML outcomes.*
2. The system should allow students for registering in Undergraduate and Graduate programs
3. The system should be capable of managing the registration process
4. The system should allow to create login accounts and allow access.
5. The system should lock students' access after 5 failed attempts.
6. The system should allow administrators to cancel registration.
7. The system should allow the admininistrator to cancel registration.

4. Constraint

- Constraints: Time Limit: 3 months to develop
- Other projects the team members must develop and complete in conjunction with this project.
- Government constraint: Must meet the standard of the general government policy.

5. Assumptions

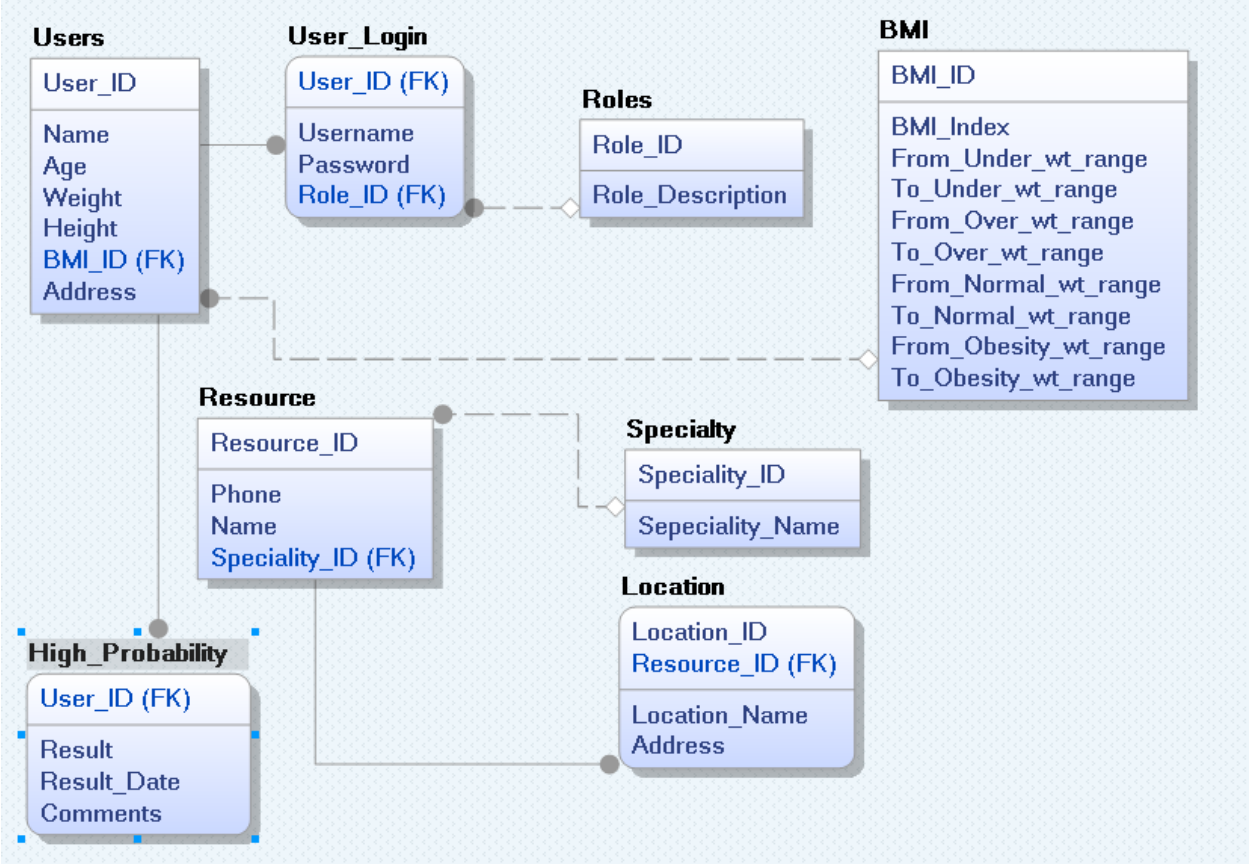
- User's system has enough memory and storage to correctly run the program for the most accurate results.
- Assuming that the users are using Windows OS, Mac OS, Mobile OS like the iOS, Androids, and Windows for mobile.
- User has stable and access to an internet connection.
- Assuming the programmers already know what is inside of the database.

6. Features

The Software Design Specifications (SRS) features the Database design, ER Diagrams, UI Screens for each use case, sequence diagrams, class diagrams, and the Architectural diagrams.

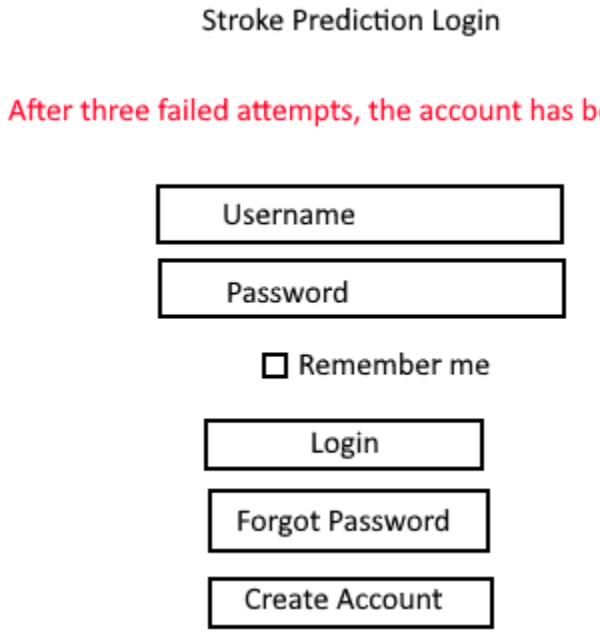
- *The system will ask the user questions such as their age, living conditions, weight, and Body Mass Index for instance.*
- *The system will also display to the user their likelihood of having a stroke as well as ways the user can prevent the stroke based on which of their factors would contribute the most to the stroke.*
- *The system will compare the user's information with common symptoms of a stroke.*
- *The system will display to the user resources they can use to treat their highest symptoms for a stroke. The resources will be relevant based on which factors will contribute to a stroke the most based on the user's input.*

7. DB Design: ER Diagrams

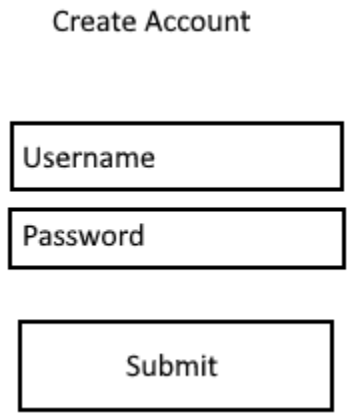


8. UI screens for each use case

1) The system should lock user's access after three failed attempts.



2) The system should allow users to create a new account.



3) The system will ask the user questions based on factors that contribute to a stroke

4) The system display to the user their likeliness for a stroke based on which of their factors will contribute to the stroke the most. The same page should also display to the user resources they can contact based on where the user is located and which resource and help them decrease their likeliness for a stroke.

MOCKUP UI

Likelihood of Stroke:

Highest Probability Symptoms:

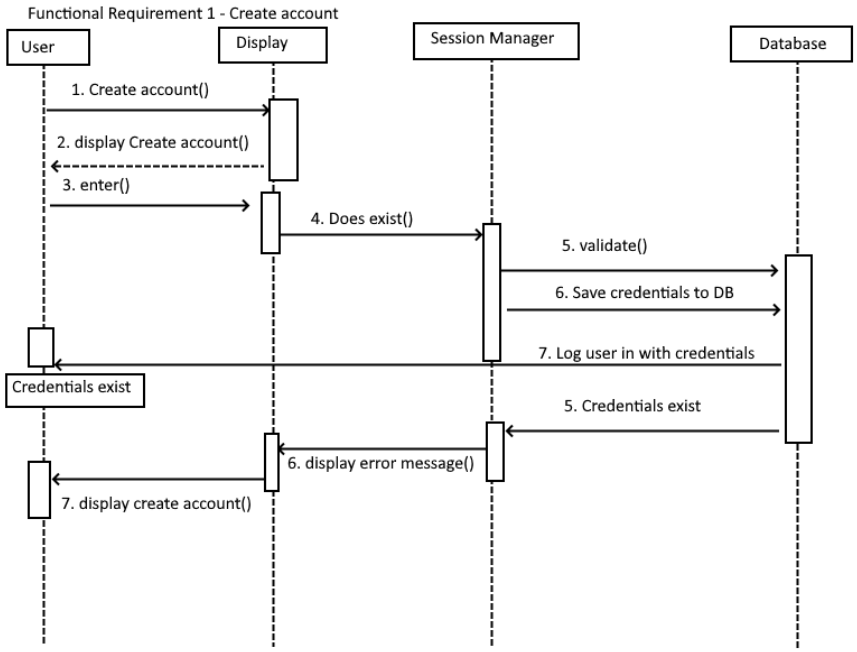
Unit	Value	Contribution Factor
Body Mass Index	25.8	90%
Weight	180 pounds	80%
Age	25	60%

Resources:

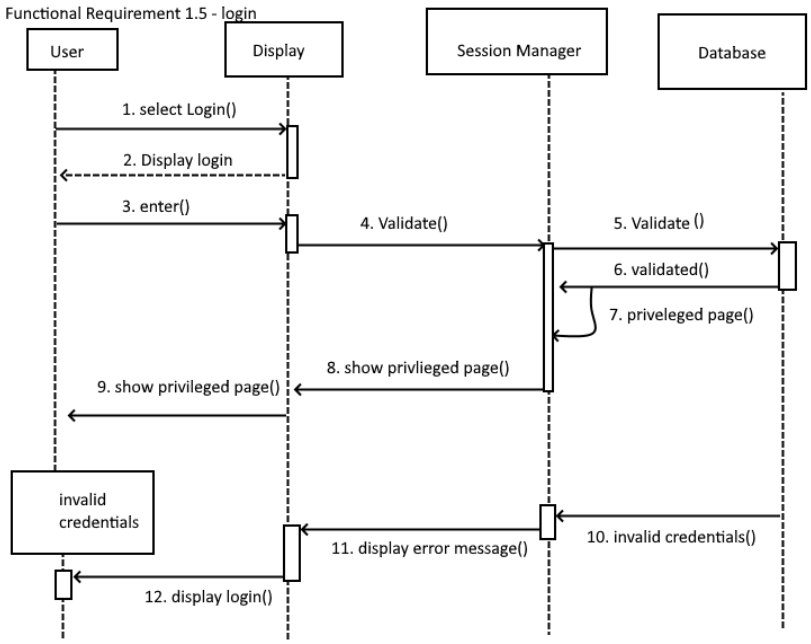
Name	Specialist	Location
Dr. Al	Dietician	123 Main Street
Dr. Joe	Nutritionist	456 South Road

9. Sequence Diagram

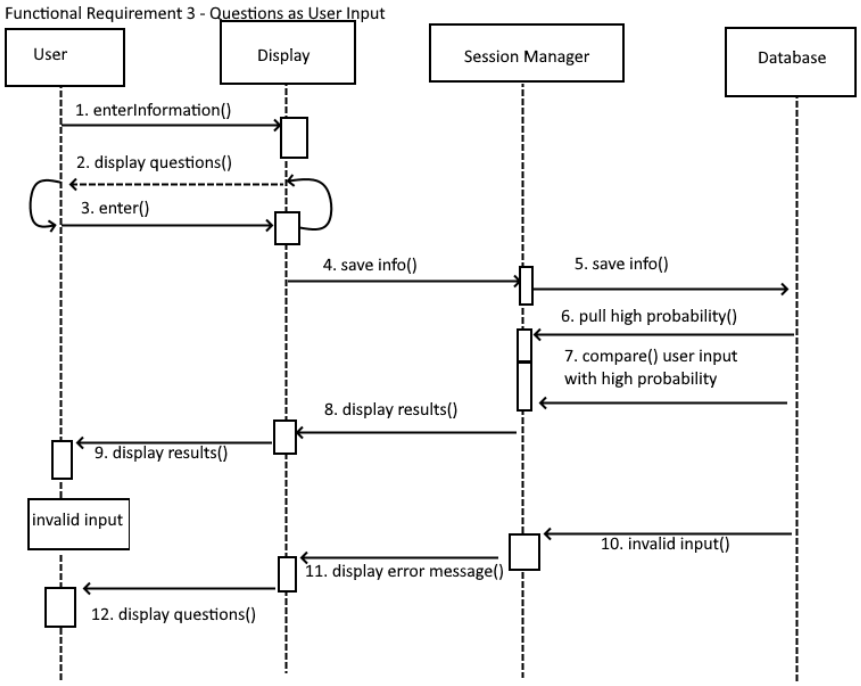
1. Create account



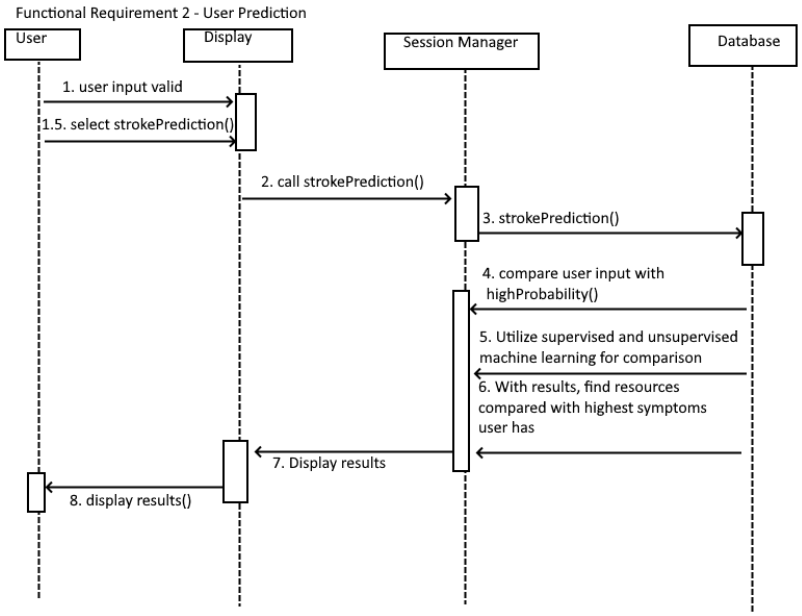
2. Login



3. Questions as User Input



4. User Prediction



10. Architectural Diagram

- The CUNY registration system is running on a client-server architecture. The clients are the users (Students), and they are accessing the CUNY servers using any internet connection from mobile devices, laptops, and desktops. After they have access to the servers by logging in, they can then register for classes.