Software Requirements Specification (SRS) - Healthcare Mini Project

Project Title

Healthcare Mini Project – BMI Calculator, Illness Checker, Age Group Analysis, and Appointment Token Generator

Team Members

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Problem Statement

Many people require quick health guidance, basic BMI calculations, and symptom checking before visiting a doctor. Manual record-keeping of patient age groups and appointment tokens is time-consuming. This project aims to provide a simple console-based solution to calculate BMI, suggest health improvements, analyze age group distribution, check common illness symptoms, and generate appointment tokens efficiently.

Approach / Methodology / Data Structures Used

Approach

- Console-based Python program with menu-driven interface.
- User selects a feature: BMI Calculator, Illness Checker, Age Group Analysis, or Appointment Token Generator.

Methodology

- **BMI Calculator:** Calculates BMI using `weight / height^2`; categorizes results; provides health suggestions.
- **Illness Checker:** Conditional statements match symptoms to predefined illness patterns and suggest advice.
- **Age Group Analysis:** Reads patient CSV file, categorizes ages into bins, computes counts and percentages.
- **Appointment Token Generator:** Generates sequential tokens for patients and stores them in CSV.

Data Structures

- Lists: Store patient names.
- Dictionaries: Count age groups.
- Pandas DataFrame: For age group analysis and token storage.
- Variables/Strings/Numbers: Store user inputs and results.

Sample Input / Output

1. BMI Calculator

```
Enter weight (kg): 60
Enter height (cm): 165
Your BMI is: 22.04
Category: Normal weight
Suggestions:
• Maintain balanced diet
• Exercise regularly
• Stay hydrated
```

2. Illness Checker

```
Do you have fever? (Y/N): Y
Do you have cough? (Dry/Wet/None): Wet
Diagnosis: Possible infection
Advice: Stay hydrated, rest, consult doctor if worsening
```

3. Age Group Analysis

```
CSV file: fake_patient.csv
Output:
Child: 10%
Teen: 20%
Young Adult: 30%
Middle Age: 25%
Senior: 15%
```

4. Appointment Token Generator

```
Enter number of patients: 3
Enter patient names: Alice, Bob, Charlie
Tokens generated:
1 - Alice
2 - Bob
3 - Charlie
CSV saved successfully
```

Challenges Faced

- Handling multiple user inputs with validation.
- Designing accurate health suggestions for BMI categories.
- Covering various symptoms in illness checker without overlap.
- Reading and analyzing CSV for age group.
- Generating dynamic tokens for patients.

Scope for Improvement

- Expand illness database with medical references.
- Track historical BMI and appointment data.
- Add notifications/reminders for appointments.
- Integrate machine learning for better illness prediction.