Department of Computer Engineering

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Class: T.E /Computer Sem – V / Software Engineering

Practical No:	1
Title:	Software Requirement Specification
Date of Performance:	
Roll No:	9563
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Rubrics for Evaluation:

Sr. No.	Performance Indicator	Excellent	Good	Below Average	Total Score
1	On time Completion & Submission (01)	01 (On Time)	NA	00 (Not On Time)	
2	Theory Understanding (02)	02 (Correct)	NA	01 (Tried)	
3	Content Quality (03)	01 (All used)	02 (Partial)	03 (Rarely allowed)	
4	Post Lab Questions (04)	04 (Done Well)	03 (Partially Correct)	02 (Submitted)	

Signature of the Teacher:

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TE COMPS B

Case Study:- Femei: Women Safety and Period Management App

1 Abstract

As mobile applications become progressively intertwined into people's everyday routines, they have the potential to improve our standard of living. Any smartphone user can now check the weather, count their steps, record their voice to text, and an endless number of other technological feats at their convenience. There has been a phenomenal worldwide increase in the development and use of mobile health applications (mHealth apps) that monitor menstruation and fertility as well as apps based on women's safety. In this project, an Android-based smartphone with an integrated feature that alerts and provides location-based information.

2 Introduction

2.1 Purpose

Femei is a women-centric app for women, by women. Nowadays health issues and safety risks for women have been increasing daily. This proposed project is about their menstrual tracking and their security by using an application to send alert messages, showing safe locations & alerting the authorities. The need for this app is to help women feel organised and safe when it comes to their health and freedom. It aims at reducing the confusion and curiosity about various aspects of a woman's menstrual cycle. Also in case of emergency, we aim at adding a feature where on shaking the phone a call will be connected to your emergency number.

2.2 Scope

The scope for a women-centric app is vast, as it can cover various aspects of a woman's life, such as health and wellness, career development, personal finance, relationships, and self-care. It can provide access to educational content, networking opportunities, mentorship programs, and even online marketplaces tailored to women's preferences. By catering to the diverse needs of women, a women-centric app has the potential to make a significant impact on their lives and contribute to their overall empowerment and success.

2.3 Definitions, Acronyms, Abbreviations

Not applicable

2.4 References

1. Dr. Sridhar Mandapati, Sravya Pamidi and Sriharitha Ambati, A Mobile Based Women Safety Application (I Safe Apps), e-ISSN: 2278-0661,p-ISSN: 2278-8727, Volume 17, Issue 1, Ver. I (Jan – Feb. 2015), PP 29-34.
2. Shreya Chakraborty, Debabrata Singh, and Anil Kumar Biswal, NAARI: An Intelligent Android App for Women Safety, 11 May 2021.
3. Flo Health, Inc, Flo APP, 2015.
4. E. Sankar , CH. Aditya Karthik and A. Sai Kiran, Women Safety App, IJRASET 40851, 2022
5. Glow Inc, GLOW Ovulation and Period Tracker APP, 2014.
6. Sarah Earle, Hannah R. Marston, Robin Hadley, and Duncan Banks, The use of menstruation and fertility app trackers: A scoping review of the evidence,2020.
7. Lauren Worsfold, Lorrae Marriott, Sarah Johnson and Joyce C Harper, Period tracker applications: What menstrual cycle information are they giving women?, First published online October 9, 2021.

2.5 Developer's Responsibilities

The developer is responsible for (a)developing the system, (b) installing the software on the clients hardware, (c) conducting any user training that might be needed for using the system, and (d) maintaining the system for a period of one year after installation.

3 General Description

3.1 Product Functions Observation

1. Safety Features
    a. Emergency Shake : Users can quickly send distress calls to pre-defined contacts, in case of unsafe situations.

2. Period Management:
    a. Cycle Tracking: Users can input and track their menstrual cycles, predicting upcoming periods, ovulation windows, and fertile days.
    b. Symptom Recording: Enables users to log physical and emotional symptoms, facilitating better understanding of their menstrual health.

3.2 User Characteristics

The app targets women aged late teens to early 40s, focusing on menstrual health, safety, and education needs. It caters to users with varying levels of technological

expertise and digital comfort. The app should be user-friendly, intuitive, and cater to different comfort levels. It should address menstrual health concerns, personal safety, and vulnerable situations. Users should be socially connected, interested in event participation, and have data privacy concerns. The app should also cater to physical and emotional well-being, considering cultural diversity and life stages.

3.3 General Constraints

The application is not programmed to send calls which pop up as emergency calls which may lead to the call being ignored or treated as non urgent.

3.4 General Assumptions and Dependencies

Assumptions:

- The person is well versed with android application.
- The person will enter all the up to date asked details.
- The data about the cycle is entered as required and updated when necessary.
- The smartphone is android and is updated to android 6 or above

Dependencies:

- The successful development and deployment of our application depends on the availability and reliability of Firebase services for data storage and synchronization.
- The mobile app's functionality relies on the users' Android devices meeting the minimum system requirements for running the app.
- The system's performance may be influenced by the quality and speed of the users' internet connection, affecting data synchronization and real-time updates.

4 Specific Requirements

4.1 Inputs and Outputs

- External entities: User and the emergency contacts.
- Data flows: Representing the inputs and outputs between the entities and the system.
- Processes: Representing the operations that handle the data and give accurate predictions.
- Data stores (optional): Representing any data storage points, such as a database, as the system maintains historical information

Specific Requirements:

1. Input: User Information

- User provides personal information such as name, age, gender, and any relevant medical conditions.
- Input Format: Text fields, dropdown menus, checkboxes, etc.
- Input Source: User input through mobile application.

2. Input: Emergency Contact Information
    - User provides the contact details of their emergency contacts (e.g., names, phone numbers, relationships).
    - Input Format: Text fields, phone number input fields.
    - Input Source: User input through a web interface or mobile application
3. Output: Emergency Alert
    - In case of a critical situation, the system notifies the user's emergency contacts.
    - Output Format: Phone call to the designated contacts.
    - Output Destination: Sent to the specified emergency contacts' phone numbers or email addresses.
4. Output: Period Cycle Prediction
    - After entering data for the past months the application will tell you about your cycle
    - It will provide information about your ovulation time, the start pf the next cycle, etc

4.2 Functional Requirements

1. User Registration and Authentication:
    a. Users can create accounts using email or social media accounts.
    b. Secure authentication methods (passwords, biometrics) to protect user data.
2. Period Tracking and Management:
    a. Users can input and track menstrual cycle start and end dates.
    b. Prediction of upcoming periods, ovulation, and fertile windows based on historical data.
    c. Ability to log and monitor symptoms, flow intensity, and emotional changes.
3. Safety Features:
    a. Emergency SOS shake feature for sending distress calls to selected contacts.

4.3 External Interface Requirements

User Interface: The user interface has input and buttons which will be used to enter data in the system. This data is stored in the firebase. The second part of the interface helps activate the emergency shake feature.

4.4 Performance Constraints

Due to not much testing the system may take time to contact the concerned person. The prediction about the same may not be accurate as there is no machine learning used

4.5 Design Constraints

Software Constraints

This system is designed to run only on android phones

Hardware Constraints

The android phone should have an operating system of android 6 or above

Acceptance Criteria

Before accepting the system the user must put in the required details. Failing to do so may lead to some features not working.

POSTLABS

A)Evaluate the importance of a well-defined Software Requirement Specification (SRS) in the software development lifecycle and its impact on project success:

The Scrum framework is a flexible and adaptable approach to managing software development projects compared to traditional project management methodologies. It offers flexibility, transparency, stakeholder involvement, empowerment, early value delivery, and a structured approach. However, it has weaknesses such as less predictable timelines, less formal documentation, and skill and experience dependence. Traditional methodologies, such as Waterfall, provide a clear project plan and well-defined phases, but have limitations such as limited adaptability, late feedback, and limited collaboration. Hybrid approaches, which combine elements of both Scrum and traditional methodologies, can help organisations tailor their project management approach to specific project needs. The choice between Scrum and traditional methodologies should be based on a careful assessment of the project's characteristics and requirements.

B)Analyse a given SRS document to identify any ambiguities or inconsistencies and propose improvements to enhance its clarity and completeness.

1. Read Carefully:Read the SRS document thoroughly to understand the project's requirements and scope.
2. Check for Ambiguous Language: Look for vague or unclear statements that could lead to different interpretations. Ambiguous language can create confusion during development.
3. Look for Contradictions: Identify any conflicting statements or requirements that may cause inconsistencies in the software's functionality.
4. Validate Completeness:Ensure that all necessary requirements are included in the document. Look for any missing features or functionalities.
5. Verify Verifiability: Check if the requirements are verifiable and testable. Ambiguous or unverifiable requirements can lead to difficulties in validation.
6. Review Consistency: Check if similar functionalities are described consistently throughout the document. Inconsistency may lead to misunderstandings during development.
7. Clarify Terminology: Identify technical terms or acronyms that might not be well-defined in the document. Provide clear definitions to avoid confusion.
8. Check for Dependencies: Look for dependencies between requirements. Ensure that all interrelated functionalities are well-documented and understood.
9. Verify Feasibility:Assess the feasibility of implementing the specified requirements. Unrealistic or impractical requirements may need to be refined or modified.
10. Seek Feedback:Share the SRS document with relevant stakeholders and development teams to get their feedback. Address any concerns and incorporate improvements based on their input.

C)Compare and contrast different techniques for requirement elicitation, such as interviews, surveys, and use case modelling, and determine their effectiveness in gathering user needs.

1.Interviews: Direct interactions with stakeholders to gather requirements by asking questions and seeking clarifications.
2.Surveys: Collecting data through questionnaires to gather a large number of responses from stakeholders.
3.Workshops:Conducting collaborative sessions with stakeholders to discuss and brainstorm requirements.
4.Prototyping: Creating a basic version of the software to elicit feedback and refine requirements.
5.Observation:Observing users in their work environment to understand their needs and pain points.

6.Document Analysis: Reviewing existing documents, such as manuals or reports, to extract requirements.
7. Focus Groups:Organizing group discussions with stakeholders to capture diverse perspectives.
8.Questionnaires:Distributing standardised sets of questions to stakeholders to collect specific information.
9. Brainstorming: Encouraging open discussions and idea generation among stakeholders.