Hamdard University
Department of Computing
Final Year Project

Secure Sense (Leveraging Human Behaviour for Security and Building a Secure Digital Culture) Mobile Application
FYP-031/FL24

Software Requirements Specifications

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Definition of Terms, Acronyms, and Abbreviations

Term	Description

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1. Introduction

1.0 In today's digital landscape, effective data collection and feedback are essential for improving services, understanding user needs, and making informed decisions. Secure Sense is a mobile app designed to help users create and manage customized surveys. It allows users to design personalized surveys, save them for future use, and make modifications as needed. After creating a survey, users can share it with others using a unique survey ID, enabling recipients to take the same survey. All responses are securely stored in a database, ensuring data integrity and privacy. In addition, Secure Sense integrates a focus on behavioral analysis, allowing organizations to assess user feedback with greater precision. By providing a simple yet powerful platform for survey creation and management, Secure Sense bridges the gap between traditional survey tools and modern needs, offering a flexible and secure solution for gathering insights and feedback.

1.1 Purpose of Document

The purpose of this document is to provide a detailed Software Requirements Specification (SRS) for the Secure Sense (Leveraging Human Behaviour for Security and Building a Secure Digital Culture) Mobile Application. This document outlines the system's functionality, performance, and operational requirements to ensure the successful implementation and deployment of the mobile application.

1.2 Intended Audience

This survey app is designed for:

1. **Organizations**: To assess and improve employee behavior, ensuring better compliance with organizational protocols and fostering a collaborative work culture.
2. **HR Professionals and Managers**: To gather insights into employee behavior, identify areas for improvement, and implement targeted training or interventions.
3. **Researchers and Analysts**: To explore patterns in human behavior and compliance, aiding in the development of strategies for enhanced organizational efficiency.

By incorporating aspects of **cybersecurity awareness**, this app helps organizations address behavioral gaps that could impact their security and overall resilience.

2. Overall System Description

2.1 Project Background

Secure Sense is a mobile app designed to help users create and manage customized surveys. It allows users to design personalized surveys, save them for future use, and make modifications as needed. After creating a survey, users can share it with others using a unique survey ID, enabling recipients to take the same survey. All responses are securely stored in a database, ensuring data integrity. The app also allows users to perform **CRUD operations** (Create, Read, Update, Delete) on their surveys, giving them full control over the content. This app provides a simple and effective way for users to gather insights and feedback, while also offering the flexibility to modify and manage surveys according to their needs.

2.2 Problem Statement

Traditional survey tools often lack customization, flexibility, and ease of use. Users face challenges in creating, managing, and modifying surveys efficiently. **Secure Sense** addresses these issues by providing a simple yet powerful platform that allows users to create customized surveys, modify them as necessary, and share them with others using a unique survey ID. With the added functionality of saving and retrieving surveys, users can perform CRUD operations on their surveys, ensuring a seamless experience.

2.3 Project Scope

The **Secure Sense** app will provide the following features:

- **Custom Survey Creation**: Users can create personalized surveys by adding various question types.
- **Survey Saving and Modifications**: Users can save surveys for future use and make changes by adding, editing, or removing questions.

- **Survey Sharing**: After creating a survey, users can share it using a unique survey ID, allowing others to take the same survey.
- **Data Storage**: All survey responses are securely stored in a database, ensuring data privacy and integrity.
- **CRUD Operations**: Users can create, read, update, and delete surveys, offering full control over the survey data.

These features ensure that **Secure Sense** provides a flexible and user-friendly solution for creating and managing surveys, with a focus on ease of use and data management.

2.4 Not In Scope

- **Real-Time Data Analysis**: The app will not offer live data analysis or instant feedback based on responses.
- **Integration with External Survey Platforms**: No direct integration with other survey platforms or tools will be included.
- **Complex Survey Logic**: The app will not support complex survey branching or advanced logic features.
- **Offline Functionality**: The app will require an internet connection to create, share, and store surveys.

2.5 Project Objectives

The key objectives of **Secure Sense** are to:

- **Enable Survey Customization**: Allow users to create surveys tailored to their specific needs.
- **Allow Survey Management**: Provide users with the ability to save, modify, and manage surveys.
- **Enable Survey Sharing**: Allow users to share surveys with others using a unique ID.
- **Ensure Secure Data Storage**: Ensure all survey responses are stored securely in a database.
- **Support CRUD Operations**: Enable users to create, modify, and delete surveys, providing full control over their survey data.

2.6 Stakeholders & Affected Groups

- **End Users**: Individuals or organizations creating and sharing surveys.
- **Survey Respondents**: People who participate in surveys created by others.
- **App Administrators**: Responsible for managing the app, ensuring its functionality, and overseeing data integrity.
- **Developers**: Involved in the development, maintenance, and updates of the app.

2.7 Operating Environment

The **Secure Sense** app will be available on both **Android** and **iOS** platforms, optimized for modern smartphones and requiring an internet connection for full functionality.

2.8 System Constraints

- **Internet Connection Required**: The app will require an active internet connection for creating surveys, sharing them, and storing responses.
- **Device Compatibility**: The app will be optimized for mobile devices with up-to-date operating systems (Android and iOS).
- **Data Storage**: The app will rely on a secure cloud database to store survey data and responses.

2.9 Assumptions & Dependencies

- **Stable Internet**: Users are assumed to have access to a stable internet connection for survey creation and data storage.
- **Third-Party Libraries**: The app will use third-party libraries for functionality such as data storage, authentication, and survey generation.

3. External Interface Requirements

3.1 Hardware Interfaces

The **Secure Sense** app is designed to work seamlessly across modern mobile devices, including **smartphones** and **tablets** with Android and iOS operating systems. It interfaces with the device's hardware components as follows:

- **Touchscreen**: The app utilizes touch input for easy navigation, survey creation, and response submissions.
- **Camera (Optional)**: For users who wish to add image-based questions (e.g., uploading a photo for response), the app can interact with the device's camera.
- **Microphone (Optional)**: The app allows users to incorporate voicebased responses if needed, using the device's microphone.
- **Storage**: Utilizes the device's local storage for temporary data caching and uses cloud storage for survey responses and data management.

3.2 Software Interfaces

The **Secure Sense** app interacts with various software components to ensure smooth functionality:

- **Mobile Operating System**: The app is compatible with both **Android** (version 5.0 and above) and **iOS** (version 10 and above) operating systems, utilizing native APIs for efficient interaction with the device's features.
- **Database**: The app interfaces with a cloud-based database (such as Firebase Firestore) for storing and managing user data, surveys, and responses.
- **Authentication Services**: The app uses authentication libraries (e.g., Firebase Authentication) to allow users to securely log in, register, and manage their profiles.
- **Third-Party Libraries**: The app integrates third-party libraries for functionalities such as survey creation (e.g., survey form builders), data visualization, and cloud storage.

3.3 Communications Interfaces

The **Secure Sense** app communicates with users and other services via the following interfaces:

- **Internet Connection**: The app requires an active internet connection to access cloud-based services (e.g., survey creation, sharing, and response storage).
- **Cloud Storage/Database**: Communication between the app and the cloud storage is handled via secure RESTful API calls, ensuring seamless data exchange for survey responses, CRUD operations, and user management.
- **Push Notifications**: The app may utilize push notification services (e.g., Firebase Cloud Messaging) to send alerts about survey completion or new survey assignments.
- **Email (Optional)**: For survey sharing, the app may provide the option to send survey links via email, enabling easier distribution of surveys to respondents.

4. System Functions / Functional Requirements

4.1 System Functions

The **Secure Sense** app provides users with an intuitive platform for creating, managing, and utilizing customized surveys. Below are the system functions, which describe what the system is expected to do, including different functions for end-users and system administrators.

Ref #	Functions	Category	Attribute	Details & Boundary Constraints
R1.1	Allow users to create customized surveys.	Evident	System Response Time	Survey creation within 3 seconds.
R1.2	Allow users to save surveys for later use.	Evident	System Response Time	Survey saving within 3 seconds.
R1.3	Allow users to edit saved surveys and add questions.	Evident	System Response Time	Edit survey response time within 5 seconds.
R1.4	Allow users to share surveys with others via a unique link.	Evident	System Response Time	Survey sharing should be instant.

R1.5	Allow users to access saved surveys and make changes.	Evident	System Response Time	Saved surveys can be accessed and modified within 3 seconds.
R1.6	Allow users to fill out surveys created by others.	Evident	User Interaction Time	Survey filling time should not exceed 2 minutes.
R1.7	Allow CRUD operations on survey data (Create, Read, Update, Delete).	Hidden	Data Integrity	CRUD operations must be consistent and secure.
R1.8	Ensure all survey data is stored in the database securely.	Mandatory	Data Security	All data must be encrypted and stored in Firestore.

System Attributes/Nonfunctional Requirements

These are essential qualities that the system must meet:

Attribute	Details & Boundary Constraints	Category
Response Time	The system should respond within 5 seconds for creating and saving surveys.	Optional
Concurrent User Load	A minimum of 20 users should be able to use the app simultaneously.	Mandatory
Security	All sensitive user data must be encrypted using industry-standard encryption.	Mandatory
Availability	The app must be available 99.9% of the time with minimal downtime for maintenance.	Mandatory

4.2 Use Cases

4.2.1 List of Actors

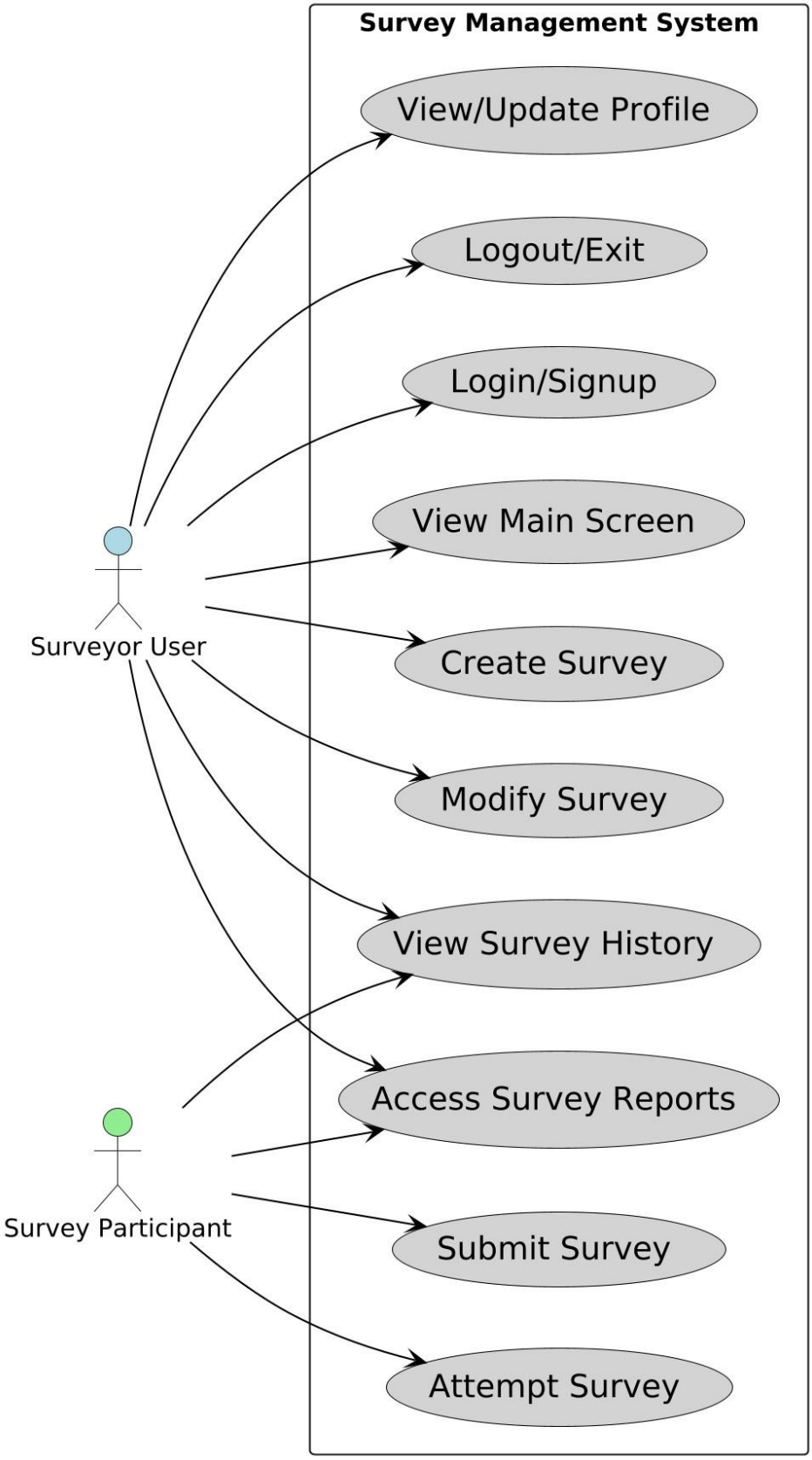
1. **User**: The individual who creates, fills out, edits, and shares surveys.
2. **Admin**: The system administrator who manages user accounts, monitors data, and handles system configurations.

3. **Survey Recipient**: A person who is invited to take part in a survey created by the user.

4.2.2 List of Use Cases

Use Case ID	Name	Description
UC1	Create Survey	A user creates a new custom survey with questions and options.
UC2	Edit Survey	A user edits an existing saved survey to modify or add questions.
UC3	Save Survey	A user saves a created survey for future use.
UC4	Share Survey	A user generates a unique link and shares it with others to complete the survey.
UC5	Fill Survey	A survey recipient fills out a survey and submits it.
UC6	View Responses	A user views the responses submitted to their survey.
UC7	Manage User Data	Admin manages user accounts and permissions.

4.2.3 Use Case Diagram


Survey Management System
View/Update Profile
Logout/Exit
Login/Signup
View Main Screen
Create Survey
Modify Survey
View Survey History
Access Survey Reports
Submit Survey
Attempt Survey
Surveyor User
Survey Participant

4.2.4 Description of Use Cases

Section: Main

Name: Create Survey
Actors: User
Purpose: Create a customized survey with questions and response options.
Description: The user navigates to the survey creation section, adds questions, and defines response options (such as multiple-choice or text input). Once the survey is created, the user can save it for future use or share it with others.
Cross References: Functions: R1.1, R1.2, R1.4
Pre-Conditions: The user is logged into the app.
Post-Conditions: The survey is saved in the system or shared with the recipient.
Failure Post-Conditions: The survey is not saved or shared due to a system error or invalid input.

Typical Course of Events

Actor Action	System Response
1. User opens the "Create Survey" section.	1. The system loads the survey creation interface.
2. User adds a question to the survey.	2. The system displays the question and response options.
3. User saves the survey.	3. The system saves the survey and confirms the action.

Alternative Course
Step 2: If an invalid question format is added, the system shows an error message.

Section: Share Survey

Typical Course of Events

Actor Action	System Response
1. User clicks on "Share Survey".	1. The system generates a unique link to the survey.
2. User copies the link.	2. The system confirms that the link is ready for sharing.

Alternative Course
Step 1: If the survey is not saved, the system prompts the user to save the survey before sharing.

4. Non - Functional Requirements

4.1 Performance Requirements

- **Response Time**: The system should respond to user inputs (e.g., submitting survey responses, creating a survey) within 3 seconds.
- **Scalability**: The application should handle at least 1000 concurrent users without significant performance degradation.
- **Database Performance**: Survey data should be fetched and displayed within 2 seconds for any user query.
- **Survey Creation Time**: Users should be able to create and save a survey within 5 minutes, even with a high number of questions.

4.2 Safety Requirements

- **Data Integrity**: Ensure that all survey data (questions, responses, and marks) are stored in a way that prevents accidental loss or corruption.
- **Error Handling**: Any system or user error should be logged and displayed as a clear, user-friendly message.
- **Backup and Recovery**: Regular backups of survey data should be performed to prevent loss in case of system failures. The system should allow the recovery of surveys from the last backup.

4.3 Security Requirements

- **Authentication**: The system must require users to log in using secure credentials (username/email and password) to access or create surveys.
- **Authorization**: Only authorized users (survey creators) should have access to modify or delete their surveys.
- **Data Encryption**: All sensitive user data (e.g., personal information, survey responses) should be encrypted both during transmission (using SSL/TLS) and when stored in the database.
- **Access Control**: Secure access control mechanisms must be in place to ensure that only the survey owner can edit, share, or delete a survey.

- **Secure Data Sharing**: Any survey link shared should be tokenized, allowing access only to authorized users with the correct token or invitation.

4.4 Reliability Requirements

- **Availability**: The system should have an uptime of 99.9%, meaning it should be down for no more than 8 hours per year.
- **Failover**: In case of failure, the system should automatically switch to a backup system without data loss.
- **Error Recovery**: The system should allow recovery from failures and continue normal operations as quickly as possible, minimizing downtime.

4.5 Usability Requirements

- **Ease of Use**: The interface should be intuitive and user-friendly. Survey creation, response submission, and other user actions should be easy to navigate for all types of users.
- **Accessibility**: The system should be accessible to users with disabilities, conforming to WCAG 2.1 (Web Content Accessibility Guidelines).
- **Multi-Language Support**: The app should provide an option for users to choose their preferred language, with at least English and Urdu supported.
- **Responsive Design**: The application should be responsive and accessible on mobile phones, tablets, and desktop devices.

4.6 Supportability Requirements

- **System Monitoring**: The system should have continuous monitoring to ensure proper functioning and detect performance issues.
- **Technical Support**: Provide online help resources (FAQs, user guides) and a contact form for users to reach technical support in case of issues.
- **Maintenance**: The system should support easy updates, including security patches, performance improvements, and bug fixes.
- **Logging**: System logs should be maintained to help diagnose issues and improve the system over time. Logs should include user actions, system errors, and system performance metrics.

4.7 User Documentation

- **User Guides**: Comprehensive documentation should be provided, outlining how to create surveys, assign marks, share surveys, and access saved surveys. The guide should also include troubleshooting tips.
- **Help Section**: A help section with detailed FAQs should be available in the application, offering users step-by-step instructions on using the app effectively.
- **Tooltips and Onboarding**: Tooltips should be used to guide users through the app, especially when they first access the survey creation interface. An onboarding process should be available for new users.

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