



**Course Title: Smartphone Application Development**

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# Software Requirements Specification (SRS) for Roadside Assistance App :

## 1. Introduction:

### 1.1 Purpose:

The purpose of this Software Requirements Specification (SRS) is to define the software requirements for the Roadside Assistance App, providing a comprehensive understanding of its features, functionality, and constraints.

### 1.2 Document Conventions:

Throughout this document, the following conventions will be used:

- > **Bold**: To highlight section and subsection headings.
- > *Italics*: To emphasize key terms and examples.

### 1.3 Intended Audience and Reading Suggestions:

This SRS is intended for software developers, testers, project managers, and all stakeholders involved in the development, testing, and deployment of the Roadside Assistance App. To fully comprehend this document, readers are encouraged to have a basic understanding of software development and mobile applications.

### 1.4 Product Scope:

The Roadside Assistance App is designed to provide a user-friendly and efficient solution for drivers in need of roadside assistance in emergency situations. It connects drivers with nearby service providers, facilitating quick response and assistance. The app covers the entire assistance process, from user registration and request initiation to service provider dispatch and completion of service. It aims to enhance the overall safety and convenience of drivers.

### 1.5 References:

Jang, J. A., Kim, H. S., & Cho, H. B. (2011, July 25). *Smart roadside system for driver assistance and safety warnings: Framework and applications*. MDPI.  
<https://www.mdpi.com/1424-8220/11/8/7420>

Driver assistance through an autonomous safety management framework. (2016, October 1)| IEEE Xplore. <https://ieeexplore.ieee.org/abstract/document/7763181>

## 2. Overall Description

### 2.1 Product Perspective:

The Roadside Assistance App is a standalone mobile application designed to connect drivers in need of assistance with service providers during roadside emergencies.

### 2.2 Product Functions:

Roadside Assistance App major functions include user registration, requesting assistance, dispatching service providers, location-based services, communication between users and providers, in-app payments, and service history tracking.

### **2.3 User Classes and Characteristics:**

Drivers: Primary users of the app, typically in distress during roadside emergencies.

Service Providers: Respond to requests, technical expertise.

Administrators: Manage accounts and settings.

### **2.4 Operating Environment :**

Roadside Assistance App operates on mobile devices with internet connectivity, using MySQL database and third-party services like Google Maps and payment gateways.

### **2.5 User Documentation:**

The following user documentation components will be delivered along with the software:

User Manual: A comprehensive guide on how to use the app.

On-line Help: Contextual help within the app.

Tutorials: Step-by-step guides for specific app features.

### **2.7 Assumptions and Dependencies :**

#### **Assumptions:**

- Availability of third-party services.
- Compliance with data privacy regulations.

#### **Dependencies:**

- External payment gateways for financial transactions.
- Integration with tow truck dispatch systems.

## **3. External Interface Requirements:**

### **3.1 User Interfaces:**

The user interfaces of the Roadside Assistance App are intuitive and follow mobile platform design guidelines. The following characteristics are applicable to the user interface:

It will follow a user-friendly GUI for Android, consistent layout with standard elements like navigation menus, standard button and functions, error message will follow standardized formatting.

## **4. System Features:**

### **4.1 User Registration and Login:**

#### **4.1.1 Description and Priority:**

This feature allows users to register for the app and log in with their credentials. It is a High priority feature as it is fundamental for user engagement and access to services.

#### **4.1.2 Stimulus/Response Sequences:**

- User clicks on "Register."
- User provides necessary information (name, contact, and password).
- System validates and stores user data.
- App confirms successful registration.

#### **4.1.3 Functional Requirements:**

- 1: The app must validate user-provided information (email format, phone number) for accuracy.
- 2: User passwords must meet security standards (minimum length, special characters).

#### **4.2 Assistance Request:**

##### **4.2.1 Description and Priority:**

This feature enables users to request assistance, specifying the type of help required and their location. Priority: High.

##### **4.2.2 Stimulus/Response Sequences:**

- User selects "Request Assistance."
- User specifies the type of assistance needed.
- User provides location (GPS coordinates or address).
- System processes the request and dispatches service providers.

##### **4.2.3 Functional Requirements:**

3. The app must offer various assistance request options (flat tire, jump-start, fuel delivery).
4. The app must access device GPS for automatic location retrieval or allow manual input.

#### **4.3 Service Provider Dispatch:**

##### **4.3.1 Description and Priority:**

This feature dispatches nearby service providers to assist users, ensuring quick response times. Priority: High.

##### **4.3.2 Stimulus/Response Sequences:**

- User's request triggers a search for nearby service providers.
- System identifies and notifies available providers.
- Service providers accept or decline assistance requests.
- User is informed about the assigned service provider's details.

##### **4.3.3 Functional Requirements:**

5. The app must calculate proximity to service providers based on user location and their availability.
6. Service providers must have the option to accept or decline assistance requests.

## **5. Other Nonfunctional Requirements:**

### **5.1 Performance Requirements:**

- Fast response times.
- Efficient data transfer rates.
- Scalability to handle 1,000 concurrent users without significant performance degradation.

### **5.2 Safety Requirements:**

- Compliance with data privacy regulations.
- Clear emergency procedures in case of system failure.

### **5.3 Security Requirements:**

- Secure user authentication.
- Password complexity requirements.

### **5.4 Software Quality Attributes:**

- User-friendly interface.
- Reliable service.
- Easy maintenance and updates.
- 24/7 availability.

### **5.5 Business Rules:**

- Registered users for assistance.
- Verified service provider profiles.
- In-app payment following established fees.

## 6.Other Requirements:

### Appendix A: Analysis Models:

#### Class Diagram:

