# Software Requirements Specification

for

# ClickPay:
## Transactions on your Fingertips!

Version 1.0 approved

Prepared by

Aryan Surve D12A 67

VISIT

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## Revision History

| Version | Date | Description | Author |
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| 1.0 | 30/01/2025 | Initial SRS document | Aryan Surve |

# 1. Introduction

## 1.1 Purpose:

This Software Requirements Specification (SRS) document outlines the functional and non-functional requirements for **ClickPay**, a mobile payment application designed to offer secure and seamless transactions. The app enables users to make digital payments, transfer funds and manage their wallets efficiently.

ClickPay aims to provide a user-friendly, secure, and efficient payment platform where individuals and businesses can conduct transactions with minimal effort. By integrating encryption technologies, instant notifications, and multi-layered authentication, the app ensures reliability and trustworthiness for users.

The primary objective of this document is to serve as a guideline for developers, project managers, stakeholders, quality assurance testers, and end users. By detailing the system's requirements and constraints, this document ensures that the development process aligns with user needs and business objectives. Additionally, it will facilitate smooth communication among different teams involved in the development lifecycle and provide a reference for future improvements.

## 1.2 Document Conventions

- Bold text: Key terms and concepts
- *Italics text*: References to figures, sections, or appendices
- Shaded text: Example, placeholder text

## 1.3 Intended Audience and Reading Suggestions The intended audience for this document includes:

- **Developers**: To understand system requirements and technical specifications of ClickPay.

- **Project Managers**: To track project scope, deliverables, and constraints.

- **Stakeholders**: To ensure the ClickPay application aligns with business goals and user needs.

- **Quality Assurance Testers**: To verify compliance with functional and non-functional requirements.

- **End Users**: To understand high-level functionality and capabilities of ClickPay.This document is divided into functional and non-functional sections. Readers are encouraged to focus on the sections relevant to their roles.

## 1.4 **Product Scope** :

ClickPay is a mobile application designed to provide users with a fast, secure, and convenient way to make and receive payments. The app simplifies financial transactions by integrating multiple payment options, user-friendly interfaces, and real-time transaction tracking.

**Key Features of ClickPay:**

- **Instant Payments:** Users can send and receive money instantly with just a few taps.

- **Multiple Payment Options:** Supports credit/debit cards, UPI, digital wallets, and net banking.

- **QR Code Payments:** Allows users to scan and pay at supported merchants quickly.

- **Transaction History & Insights:** Users can view past transactions, track expenses, and generate reports.

- **Bill Payments & Recharge:** Enables easy utility bill payments, mobile recharges, and subscription renewals.

- **Secure & Encrypted Transactions:** Advanced encryption and multi-factor authentication ensure data security.

- **User Profiles & Wallet Management:** Users can manage linked bank accounts, set payment preferences, and track balances.

- **Reward System:** Cashback offers and reward points on transactions to enhance user engagement.

## 1.5 **References**

- **Payment Gateway API Documentation**: Provides details on integrating third-party payment processing APIs such as Razorpay, Stripe, or PayPal.
- **Mobile App Security Best Practices**: Guidelines for securing financial transactions, encrypting user data, and preventing fraud.

- **User Experience Guidelines for Payment Apps**: Industry standards for designing an intuitive, secure, and seamless payment flow.

- **Regulatory Compliance for Digital Payments**: Information on legal and compliance requirements such as PCI DSS, RBI guidelines (for India), and GDPR.

- **Fraud Detection and Risk Management**: Best practices for implementing AI-driven fraud detection and secure authentication methods.

## 2. Overall Description

### 2.1 Product Perspective

ClickPay is a mobile payment application designed to facilitate fast, secure, and seamless digital transactions. It serves as a standalone system with integration points for banking APIs, payment gateways, and fraud detection services. The app ensures smooth financial transactions between users, merchants, and service providers while maintaining high-security standards and compliance with financial regulations.

### 2.2 Product Functions

- **User Registration and Authentication**: Users sign up via email, phone number, or biometric authentication.
- **Fund Transfers**: Enables users to send and receive money instantly via UPI, bank transfers, or wallets.
- **QR Code Payments**: Users can scan QR codes to make instant payments at supported merchants.
- **Bill Payments & Recharges**: Supports utility bill payments, mobile recharges, and subscription renewals.
- **Transaction History & Insights**: Users can track expenses, view transaction details, and generate reports.
- **Push Notifications**: Instant alerts for successful transactions, pending payments, and security updates.

### 2.3 User Classes and Characteristics

- **Customers**: Individuals using ClickPay for personal transactions, bill payments, and purchases. Basic knowledge of mobile applications and digital payments required.

- **Merchants**: Business owners accepting payments through ClickPay. Must have a business account to receive funds.

- **Admin**: Platform administrators responsible for managing transactions, monitoring fraud detection, and handling disputes.

## 2.4 Operating Environment

- **Mobile Platforms**: Android and iOS.

- **Network Requirements**: Requires an active Wi-Fi or mobile data connection for transaction processing.

- **Hardware Requirements**: Devices must support biometric authentication (optional) and NFC for contactless payments.access.

## 2.5 User Documentation

- **User Manuals**: Step-by-step guides available in the app for payment processing and security settings.

- **FAQ Section**: Answers to common queries related to transactions, refunds, and security.

- **Tutorial Videos**: Interactive guides explaining features such as fund transfers and QR code payments.

- **Customer Support**: 24/7 AI chatbot assistance with the option to connect with human support agents

## 2.6 Assumptions and Dependencies

- Users will have stable internet connections for seamless payment processing.
- The app will rely on third-party payment gateways and banking APIs for transaction processing.
- Merchants will have the necessary infrastructure to accept digital payments.
- Regulatory compliance with financial laws and security protocols will be maintained.

## 3. External Interface Requirements

### 3.1 User Interfaces

The ClickPay app will feature a simple, user-friendly interface with:

- **Home Screen**: Displays wallet balance, recent transactions, and promotional offers.
- **Send & Receive Money**: Allows users to transfer funds via UPI, bank transfer, or QR code.
- **Bill Payments & Recharges**: Enables users to pay utility bills, mobile recharges, and subscriptions.
- **Profile Management**: Users can update personal details, payment preferences, and security settings.
- **Transaction History**: Users can track all payments, refunds, and scheduled transactions.

### 3.2 Hardware Interfaces

- **Smartphones/Tablets**: Must support NFC (for contactless payments), internet access, and push notifications.
- **POS Terminals (Optional)**: For merchants accepting ClickPay transactions via QR code or NFC.

### 3.3 .Software Interfaces

- **Payment Gateway Integration**: Supports third-party payment processors like Razorpay, Stripe, or PayPal.
- **Banking API Integration**: Enables UPI transactions, direct bank transfers, and balance checks.
- **Notification System**: Real-time push notifications for transaction alerts, offers, and security updates.

### 3.4 Communication Interfaces

- **REST APIs**: Used for communication between the mobile app, banking servers, and merchant systems.
- **Push Notifications**: Alerts for successful transactions, payment failures, refunds, and security warnings.

## 4. System Features

### 4.1 User Registration and Profile Management

- **Multiple Registration Methods**: Users can register via email, phone number (OTP verification), or social media (Google, Facebook, Apple ID).
- **Profile Customization**: Users can update and manage:
  - Name, profile picture
  - Linked bank accounts and preferred payment methods
  - Security settings (PIN, biometric authentication)
- **User Verification**: Two-factor authentication (2FA) and KYC compliance for enhanced security.
- **Merchant Registration**:
  - Merchants must register with valid business details and bank information for receiving payments.
  - Admin approval is required before merchants can start accepting payments.
- **Account Management**:
  - Users can deactivate or delete their accounts.
  - Merchants can set business hours and customize payment options.

### 4.2 Payment Processing and Management

- **Fund Transfers**:
  - Instant money transfers via UPI, bank account, or wallet.
  - QR code scanning for seamless merchant payments.
- **Bill Payments & Subscriptions**:
  - Supports mobile recharges, utility bills, and recurring subscription payments.
- **Dynamic Transaction Limits**:
  - Limits based on user verification level (Basic, KYC-verified).
- **Real-time Transaction Updates**:
  - Users receive instant payment confirmations and transaction statuses.
- **In-App Communication**:
  - Secure in-app support chat for assistance.
  - Customer support hotline for urgent payment issues.
- **Transaction History & Reports**:
  - Users can view past payments, generate expense reports, and filter transactions.

- **Refund & Dispute Management**:
  - Users can raise disputes for failed transactions.
  - Automatic refund processing for unsuccessful payments.
- **Security & Fraud Detection**:
  - AI-driven fraud monitoring for detecting suspicious activities.
  - Secure encryption and tokenization for transaction safety.

  ClickPay aims to provide a seamless, secure, and feature-rich payment experience for users and businesses.

5. Nonfunctional Requirements

## 5.1 Performance Requirements

- **App Load Time:**

  o The ClickPay app should launch and display the home screen within **2 seconds** under normal network conditions.

- **Transaction Processing:**

  o Payments should be processed and confirmed within **3 seconds** for UPI and wallet transactions.

- **Balance Updates:**

  o User balances should reflect real-time updates within **2 seconds** after a transaction.

- **QR Code Scanning:**

  o The QR code scanner should detect and process codes within **1 second** for seamless payments.

## 5.2 Safety Requirements

- **User Authentication & Verification:**

  o Two-factor authentication (2FA) will be required for login and high-value transactions.

  o KYC (Know Your Customer) verification is mandatory for higher transaction limits.

- **Data Encryption:**

  o All sensitive data, including card details and passwords, will be encrypted using **AES-256 and SSL/TLS protocols**.

- **Fraud Detection & Prevention:**

  o AI-powered fraud detection will monitor transaction patterns and flag suspicious activities.

o   Users will receive instant alerts for **unusual login attempts or high-risk transactions**.

- **Emergency Support:**

o   An **SOS button** will allow users to report fraudulent transactions or unauthorized access instantly.

## 5.3 Security Requirements

● Secure Data Storage:

○ All stored data will be encrypted, and **payment details will never be stored in plaintext**.

● Regulatory Compliance:

○ The app will comply with **GDPR, CCPA, PCI-DSS, and RBI (for India) regulations**.

● Regular Security Updates:

○ Security patches will be released **monthly** to address vulnerabilities and enhance protection.

## 5.4 Software Quality Attributes

● Reliability:

○ The app should maintain 99.9% uptime, ensuring minimal downtime.

● Usability:

○ The UI/UX will be designed for **ease of navigation**, supporting users of all technical backgrounds.

● Scalability:

○ The system will support a growing user base, handling **millions of concurrent transactions**.

● Maintainability:

○ Modular architecture will allow for **seamless feature upgrades** without disrupting services.

● Compatibility:

○ The app should work across multiple Android and iOS devices, supporting various screen sizes and resolutions.

## 5.5 Business Rules

- **User Registration & Verification:**

  o Users must **complete KYC verification** to access full transaction capabilities.

- **Transaction Fees & Commissions:**

  o ClickPay will **charge a small fee for transactions exceeding a set limit** (e.g., 1% for large transfers).

- **Refund & Chargeback Policy:**

  o Users can request refunds within **7 days** for unauthorized transactions, subject to review.

- **Promotional Offers & Rewards:**

  o Cashback, referral bonuses, and discount vouchers will be offered to **increase user engagement**.

- **Merchant Settlement Process:**

  o Merchants will receive **settlements within 24 hours** for completed transactions.

- **Transaction Failure & Auto-Reversal:**

  o Failed transactions due to technical issues will be **automatically refunded within 2 hours**.

## 5.6 Other Requirements

- Localization & Multi-language Support:
  ○ The app will support English and other major languages based on the target region.
- Real Time Logging & Analytics:
  ○ Real-time logs and analytics dashboards will track app performance, user behavior, and service trends.

Appendix A: Glossary

- **User:** An individual using the ClickPay app to send or receive payments.

- **Merchant:** A business or individual accepting payments through ClickPay.

- **KYC (Know Your Customer):** A verification process requiring users to submit ID proof for security and regulatory compliance.

- **UPI (Unified Payments Interface):** A real-time payment system enabling instant fund transfers.

- **QR Code Payment:** A method where users scan a QR code to complete a transaction.

- **AI Fraud Detection:** An automated system that detects and prevents suspicious transactions.

- **Transaction Limit:** A predefined cap on the amount a user can transfer daily or monthly.

- **Wallet Balance:** The amount of money stored in the ClickPay digital wallet.

- **Settlement:** The process of transferring funds from ClickPay to a merchant's bank account.


Appendix B: To Be Determined List

- **Third-Party APIs for Payments:** Selection of payment gateway providers (e.g., Razorpay, PayPal, Stripe).
- **Chatbot Service:** Choice of AI chatbot for customer support (e.g., Dialogflow, ChatGPT API).Use of REST APIs for communication between the app and back-end servers.