

# **Software Requirements Specification**

**for**

## **ATM SYSTEM**

**Version 1.0 approved**

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# **1.Introduction**

## **1.1 Purpose/Objective**

The ATM System is a modern platform that revolutionizes the way people access ATM services. By seamlessly connecting customers with registered banks, the system offers a user-friendly interface for plethora of banking services via the ATM. With optimized and secured methods, fare calculation, and secure payment processing, the system ensures a smooth and efficient experience for all customers. Embracing modern technology, the platform aims to enhance the overall ATM functionalities already available, providing reliable and secured solutions.

## **1.2 Document Conventions**

1.2.1 Alignment: There entire document is in justified alignment.

### **1.2.2 Convention for the Main Title**

1.2.2.1 Font Face: Times New Roman

1.2.2.2 Font Style: Bold

1.2.2.3 Font Size: 20

### **1.2.3 Convention for Sub-Title**

1.2.3.1 Font Face: Times New Roman

1.2.3.2 Font Style: Bold

1.2.3.3 Font Size: 16

### **1.2.4 Convention for Sub-Sub Title**

1.2.4.1 Font Face: Times New Roman

1.2.4.2 Font Style: Normal

1.2.4.3 Font Size: 14

### **1.2.5 Convention for the Body**

1.2.5.1 Font Face: Times New Roman

1.2.5.2 Font Style: Normal

1.2.5.3 Font Size: 12

### **1.2.6 Abbreviations**

1.2.6.1 ATM: Automated Teller Machine

1.2.6.2 OTP: One Time Password

#### 1.2.6.3 XML: Extensible Markup Language

#### 1.2.6.4 A/C: Account

### 1.3 Scope

The project aims to develop an efficient and user-friendly and robust ATM System, providing customers with efficient financial banking activities like, cash withdrawal, cash deposit, A/C balance check, fund transfer, card activation, pin change while ensuring data security and scalable performance.

### 1.4 References

1.4.1 <https://razorpay.com/learn/what-is-atm/>

1.4.2 Article by [ResearchGate](#)

1.4.3 Fundamentals of Software Engineering by Rajib Mall

## 2. History/Background Study

### 2.1 Technical Literature

This SRS encompasses a comprehensive approach to designing a user centric, scalable, and secure ATM platform. By integrating robust privacy controls, real-time data processing, and personalized finance services based on machine learning algorithms, the ATM system aims to foster user engagement. With a focus on cross-banking platform compatibility, intuitive user interface design, and network analysis, the system strives to create a user friendly and secured application. The incorporation of multi bank infrastructure, data analytics, secured transaction and fin-tech systems and business intelligence tools ensures that the ATM system can cater to the various finance needs of the users and develop an integrated, scalable and intuitive software.

### 2.2 Existing Applications

There are many existing ATM applications in the market which we use on day-to-day basis. Some of them are:

- 1.SBI
- 2.PNB
- 3.Bandhan Bank
- 4.ICICI
- 5.HDFC
- 6.Indian Bank
- 7.Axis

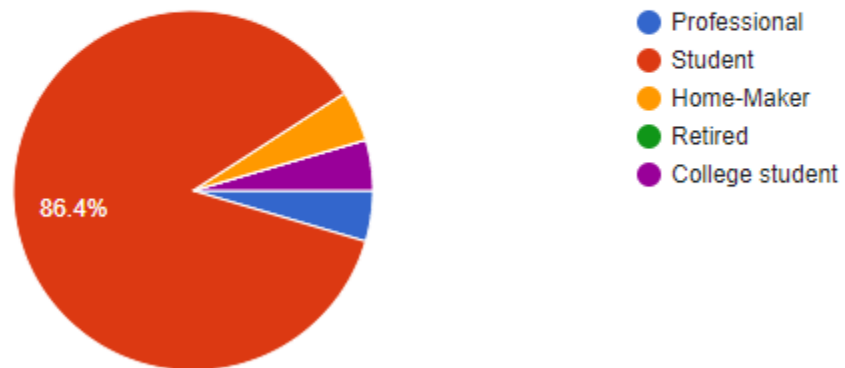
## 2.3 Customer Surveys

[Survey form](#)

[Form Responses](#)

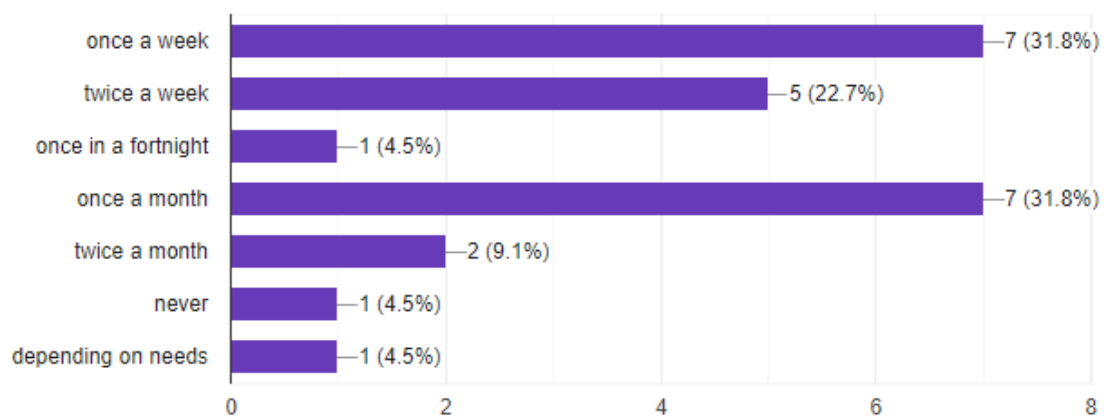
### Your Occupation

22 responses



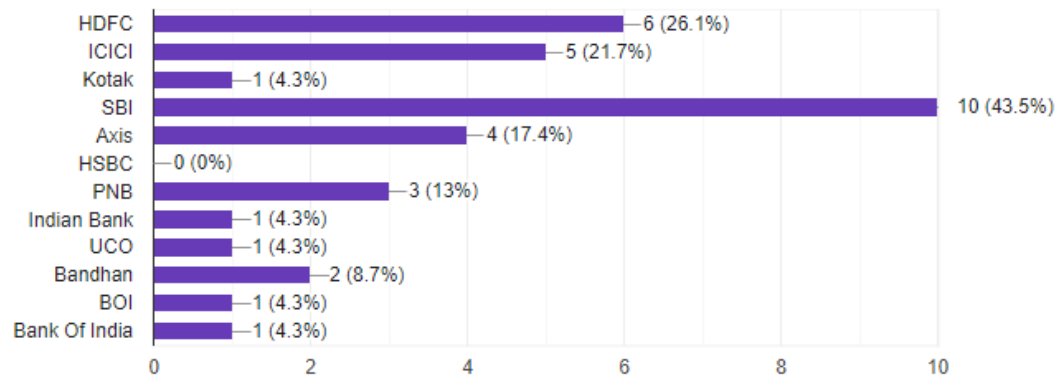
### How often do you go to the ATM?

22 responses



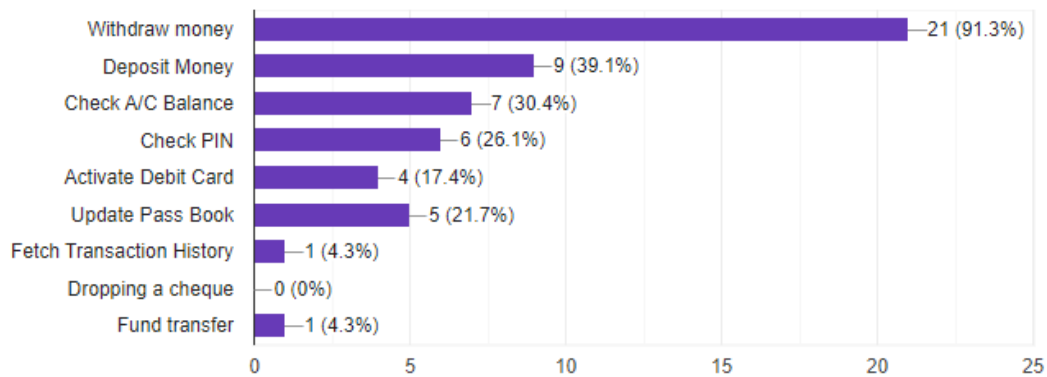
### Which Bank Beneficiary are you?

23 responses



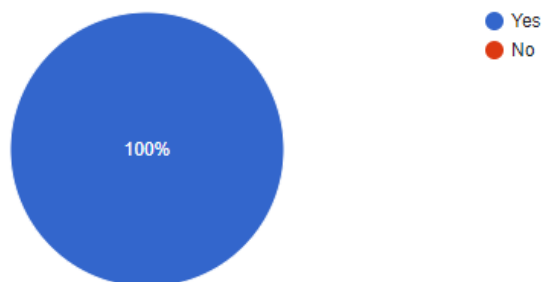
### Why do you go to the ATM?

23 responses



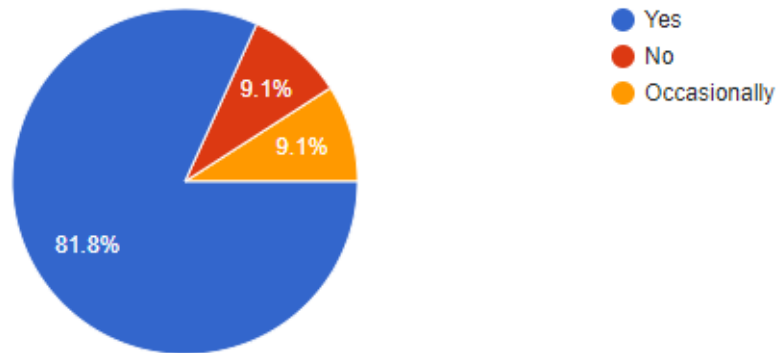
### Do the ATMs you visit have CCTV camera?

22 responses



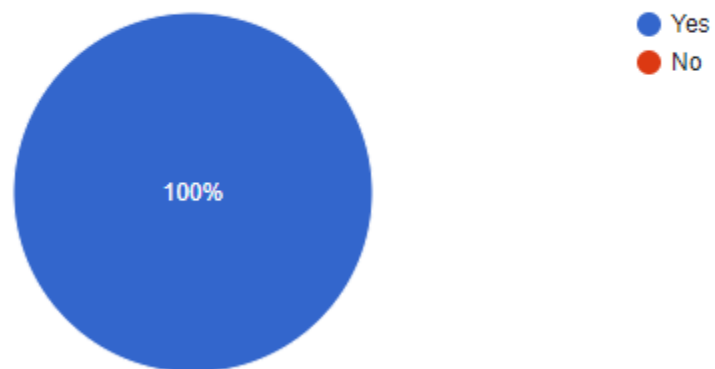
Do the ATMs you visit have security guards?

22 responses



Do the ATMs you visit have well protected keypads?

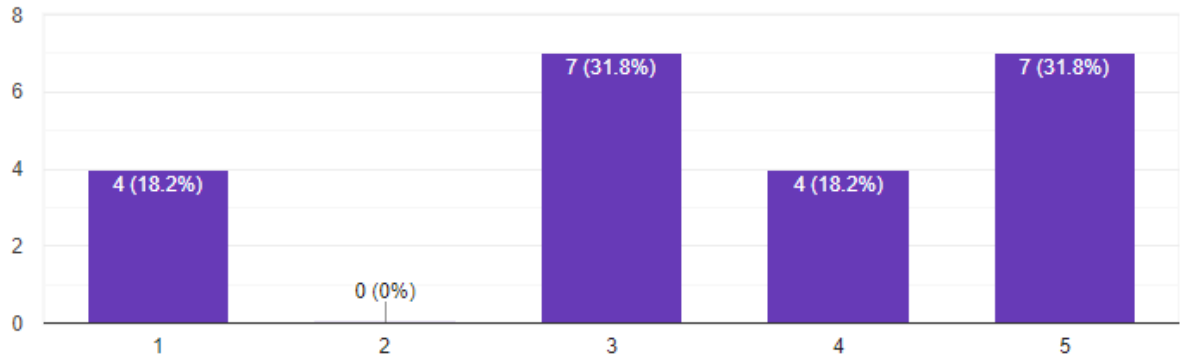
22 responses





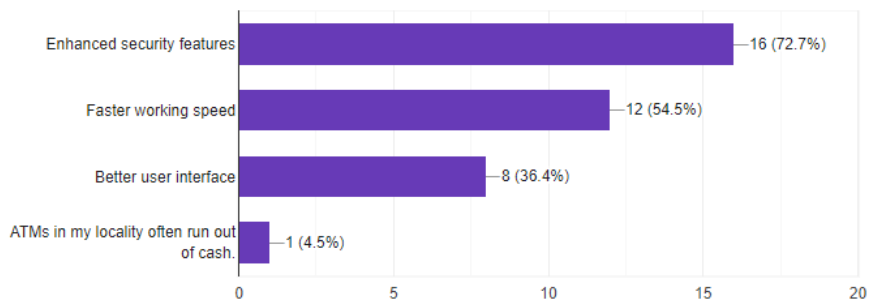
### How convenient are the ATM locations for you?

22 responses



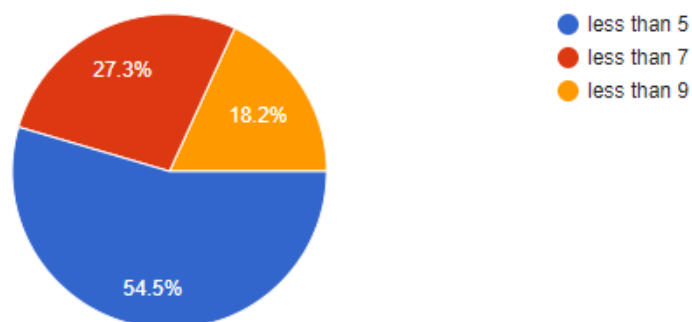
### What improvements would you like to see in ATM services?

22 responses



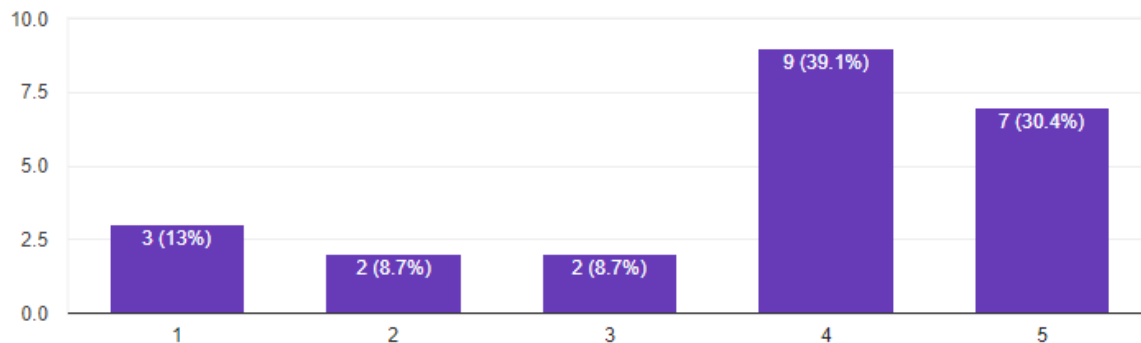
### How many free transactions would you prefer on your ATM card?

22 responses



How satisfied are you with the overall ATM service?

23 responses



## 2.4 Expert Advice

In crafting the SRS for the ATM, it is crucial to prioritize a user-centric design, scalability, and robust security measures. By thoroughly understanding users' needs through research and usability testing, the ATM can deliver a seamless and engaging experience. Anticipating future growth and technological advancements, the system should be flexible and adaptable, allowing for easy integration with external services. Ensuring compliance with legal regulations and fostering inclusivity through accessibility features are paramount, while continuous testing, documentation, and effective communication will promote a collaborative and efficient development process. Emphasizing data analytics for informed decision-making and risk management further enhances the ATM's potential to evolve into a successful, secure, and user-friendly platform.

## 2.5 Current/Future Requirements

1. Advanced Privacy Controls
2. Decentralization and Fintech Integration
3. AI-Powered Personalization
4. Virtual Reality (VR) and Augmented Reality (AR) Integration
5. Enhanced Accessibility Features
6. Real-Time Language Translation
8. Secure User Verification
9. Integrations with Emerging Technologies
10. AI-Driven Support and Customer Service
11. Cross-Platform Collaboration

## 3. Overall Description

### 3.1 Product Functions

#### 3.1.1 Hardware Requirement

- **ATM Machine:** The physical machine itself, which includes:
  - Card reader: To read and process ATM cards.
  - PIN pad: To enter PIN codes securely.
  - Display screen: To show transaction details and instructions.
  - Cash dispenser: To dispense cash securely.
  - Receipt printer: To print transaction receipts.
  - Deposit slot: For users to deposit cash or checks.
  - Communication module: To connect to the bank's network.
- **Secure Enclosure:** To protect the ATM from theft and vandalism.
- **Power Supply:** Continuous power supply to ensure uninterrupted operation.
- **Communication Network:** Typically uses a secure internet connection, dial-up, or leased line to connect to the bank's network for transaction processing.

#### 3.1.2 Software Requirements

- **Operating System:** Specialized software that manages the hardware components and interfaces with the bank's network. Common OS platforms used are:
  - Windows CE
  - Linux
  - Proprietary ATM operating systems
- **ATM Application Software:** Software that facilitates:
  - User interface: To interact with customers, provide instructions, and process transactions.
  - Transaction processing: To communicate with the bank's servers to authorize withdrawals, deposits, balance inquiries, etc.
  - Security protocols: To ensure secure authentication of users and transactions.
  - Error handling: To manage any failures or exceptions during transactions.
- **Security Software:** Includes:

- Encryption protocols: To secure data transmission.
- Authentication mechanisms: To verify user identity and prevent unauthorized access.
- Anti-skimming technology: To prevent card data theft.

□ Monitoring and Management Software: To monitor the ATM's status, manage software updates, and perform remote diagnostics.

## 3.1 Functional Requirements

### 3.2.1 Greeting

- **Description:** When the user enters, on ATM screen a welcome message is displayed to them.
- **Input:** User will enter their ATM card along with their credentials like card pin.
- **Output:** If details entered are correct message will be “Proceed further” else,” Wrong data entered”.

### 3.2.2 Language Selection

- **Description:** The user will be asked to select their preferred language from the list of available languages
- **Input:** User will enter their preferred language.
- **Output:** Further instructions will be displayed in chosen language.

### 3.2.3 Choose your activity

- **Description:** The user will choose their choice of activity from a list of options.

#### 3.2.3.1 Cash Withdrawal

- **Description:** If the user wishes to withdraw cash.
- **Input:** User will enter their ATM card along with their ATM pin.
- **Output:** If details entered are correct message will be “Proceed further” else, ” Wrong data entered”.

##### 3.2.3.1.1 Withdraw details

- ◆ **Description:** User will enter remaining details to complete transaction
- ◆ **Input:** User will enter the amount he wants to withdraw, whether he wants to take a printed slip for the same or not.
- ◆ **Output:** Cash worth the amount entered will be transacted and can be collected by the user and successful transaction message will be displayed on console unless any technical faults interrupt the process.

### 3.2.3.2 Cash Deposit

- **Description:** If the user wishes to deposit cash.
- **Input:** User will enter their ATM card along with their ATM pin.
- **Output:** If details entered are correct message will be “Proceed further” else,” Wrong data entered”.

#### 3.2.3.1.1 Deposit details

- ◆ **Description:** User will enter remaining details to complete deposit.
- ◆ **Input:** User will enter the amount he wants to deposit, whether he wants to take a printed slip for the same or not, along with the OTP sent to associated number and the amount can be safely deposited in the allocated box
- ◆ **Output:** Amount worth the cash deposited will be deposited in the associated account and successful transaction message will be displayed on console unless any technical faults interrupt the process.

### 3.2.3.3 Cheque deposit

- **Description:** If the user wishes to deposit a cheque.
- **Input:** User will drop their cheque in the specified drop box.
- **Output:** The cheques are collected at periodic intervals by appointed individuals to complete the process.

### 3.2.3.4 Check A/C Balance

- **Description:** If the user wishes to check their A/C Balance.
- **Input:** User will enter their ATM card and enter card pin. User has to choose type of account whether savings, fixed etc.
- **Output:** The A/C Balance will be displayed on the screen.

### 3.2.3.5 Update Passbook

- **Description:** If the user wishes to update their passbook.
- **Input:** User will place the empty page where data has to be printed under the place provided in the printing system.
- **Output:** The account transaction details will be printed one after another.

### 3.2.3.6 Activate Card

- **Description:** If the user wishes to activate the card.
- **Input:** User will enter their card. They also need to enter the OTP sent to their registered mobile number.
- **Output:** If OTP is valid then user will set up their new password and card will be activated within 24-48 hrs.

### 3.2.3.7 Change PIN

- **Description:** If the user wishes to change their card pin.

- **Input:** User will enter their card. They also need to enter the OTP sent to their registered mobile number. If OTP is valid then user will enter their old and new pin.
- **Output:** If details are valid then message will be displayed “Password changed successfully” else “Incorrect data entered”.

#### 3.2.3.8 Fund transfer

- **Description:** If the user wishes to transfer funds.
- **Input:** User will enter their ATM card and pin.
  - Next details of beneficiary to whose account funds are to be transferred are entered: Bank A/C No and IFSC Code
  - Next enter amount to be transferred.
- **Output:** If details are valid then message will be displayed “Amount transferred successfully” else “Incorrect data entered”.

### 3.3 Non-Functional Requirements

**3.3.1 Correctness Requirement:** All the different requirements specified in the document have been correctly implemented. It covers all the requirements that are expected from the normal functioning of ATM system.

**3.3.2 Installation Requirement:** The application is XML and programming language based. So that the end-user part is fully functional and the system with proper installation and maintenance can be used to give suitable results.

**3.3.3 Efficiency Requirement:** The software is highly efficient and various tasks in its various modules can be performed efficiently. Even if the system fails, the system will be recovered back up within a short span of time.

**3.3.4 Usability Requirement:** The software has a simple but efficient user interface, which can be used by all types of users, both technically sound as well as people not having so much technology knowledge. So, any user can use its functionalities without any sort of complications.

**3.3.5 Reusability Requirement:** The system should be available at all times, as the name given by common people suggests Any Time Money, only restricted by the downtime of the server on which the system runs. In case of a hardware failure or database corruption, backups of the database should be retrieved from the server and saved by the administrator of that particular ATM branch. Then the service will be restarted. It means 24 X 7 availability.

**3.3.6 Reliability Requirement:** The system provides storage of all databases on redundant computers with automatic switch over. The reliability of the overall program depends on the reliability of the separate components. The main pillar of

reliability of the system is the backup of the database of the ATM system which is continuously maintained and updated to reflect the most recent changes. Thus, all overall stability of the system depends on the stability of the ATM machine container and its underlying operating system.

**3.3.7 Maintainability Requirement:** A professional technical checkup is used for maintaining the application server and functioning. In case of failure, a re-initialization of the program will be done. Also, the software design is being done with modularity in mind so that its maintainability can be done efficiently

**3.3.8 Security Measures:** Security becomes an important factor in ATM software systems and hence this has been thoroughly taken care of by multiple checks to ensure a robust and risk free financial environment within the system.

### 3.4 User Characteristics

The application does not require any specific computer knowledge to use it except the developers and administrators of it. Standard users are thought to be from any gender and any nationality, who can use just a system using instructions displayed and type in credentials. The direction in which card is to be inserted is also marked to avoid any confusion to the users. On the other hand, administrators and potential developers will be needing a high level of expertise to understand web technologies.

### 3.5 Design & Implementation Constraints

Any update regarding the article will have to be recorded and the correct information must be updated and all the cost calculations must be done as soon as possible. The backup of all the development data must be done on multiple hard disks and also on cloud-based storage. Use of strong firewalls must be made and proper antivirus scans must be done before use. There is no provision for experiencing security issues as the system's robustness and security is an important concern.

### 3.6 Assumptions & Dependencies

#### 3.6.1 Assumptions:

- The code is bug free.
- The code is resistant to threats.
- The servers are behind multiple layers of firewalls.
- The network requests are logged for future security reference.
- The system should have an apt cash storage capacity and provide fast access.
- Users must insert their card correctly and enter correct credentials.

#### 3.6.2 Dependencies:

- The product needs the following third-party applications for the development of the project:
  - o Android Studio (for development of android based applications).
  - o VS-Code for the web based coding part.
  - o UI/ UX (for editing layouts, icons, buttons, interactive interface etc.)
  - O Developer tools and extensions
- A relational database management system for database connections with SQL, mongoose.
- There will be the availability of Internet via 3G, 4G, 5G or Wi-Fi at the ATM branch
- Server uptime.

## **4. Interface Requirements**

### **4.1 User Interface**

A decent graphical user interface is designed to be easily understandable and usable by both technical and non-technical users. The user interface provides the following like:

- Welcome Page
- Insert Card Page
- Dashboard with following options:
  - o Language selection
  - o Activity Selection
  - o Account Details
  - o Bank information

### **4.2 Hardware Interfaces**

The system must run over the internet, all the hardware shall be required to connect to the internet.

- WAN-LAN Cable
- Ethernet Cross-Cable
- Wi-Fi Adapter
- Modem



### **4.3 Software Interfaces**

The system is on the server so it requires any scripting language PHP, VBScript etc. The system requires a Database also to store any transaction of the system like MYSQL, etc. system also requires DNS (Domain Name Space) for the naming of the internet. At the last user needs a web browser to interact with the system.

### **4.4 Communication Interfaces**

As a ATM, we will be a completely cross banking associated system that lets multiple bank platforms connect, fetch and transform data at certain levels. The platform will use APIs and tools for successful integration and create high-level integrated plugins and programs. The main communication interface with the other platforms will be the application Platform. However, this integration and its level will be set by the ATM branch, who wants to integrate their accounts and information to store for security reasons.

## **5. Conclusion**

In conclusion, the ATM System represents a significant advancement in the banking industry, providing a seamless and user-friendly platform for customers to use banking services conveniently. This Software Requirements Specification (SRS) details the development of a secure, efficient, and user-friendly Automated Teller Machine (ATM) system. The system's core features—balance inquiries, cash withdrawals, deposits, fund transfers, and balance checks—are designed to enhance the customer experience. Emphasis on robust security measures ensures the protection of user data and transaction integrity. Scalability and maintainability are key aspects, allowing the system to evolve with future banking needs. This SRS aims to provide a clear and concise roadmap for developing an ATM system that meets contemporary banking standards, ensuring reliability and user satisfaction.