



## **CS383 Group Project**

# **Software Requirements Specification**

**(SRS)**

for

**Smart ATM**

Version 1.0

Prepared by Group 2

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# **1 Introduction**

## **1.1 Scope**

The system that we are developing is basically an ATM with more advanced/smart features that do not exist in ATMs and can improve current ATMs, including: face recognition, fingerprint, opening an account, CCTV, catch a wanted person, phone smart login, auto failure alert, currency exchange from any currency to Riyal.

## **1.2 Document Structure**

The structure of the ATM system is divided into many points which are

- Face recognition: that scans client face to identify the client and checks if he has an account or not in the bank's database, also the system can tell when client is registering for first time.
- Fingerprint reader: is same procedure as Face recognition, but the idea here is to give the client alternative ways to access his account.
- CCTV: cameras that cover blind spots of the machine's camera for the ATM to be more secure.
- Catching a wanted person: criminal that may use the ATM, when the criminal is identified from the police database, the machine will take a picture and alert the authorities and give the specific time and date of the criminal visit.
- Phone smart login: It gives the client an easy way to login, by instructing the client to position his phone on the scanner.
- Auto failure alert: alerting the bank maintenance department that there is a malfunction.
- Currency exchange: from any currency to Riyal is for clients has any another currency like \$ then ATM exchange to Riyal.

## **1.3 Constraints**

- 1-Hard to mass produce due to the machine complexity
- 2-The software will need constant updates which will lead to higher costs.
- 3-Needs to have distinctive features since there exist ATMs with similar characteristics.
- 4-ATMs itself need good quality material to be less maintenance and hard to break it.
- 5- ATMs should be high security with cameras and software, which result in a higher cost.

## 2 Overview Description

### 2.1 Product Perspective

ATM had a developed in last few years as withdraw without card, but now we need more features that make it much helpful and easier.

In ATM has features we use it in our project because its important like: Withdraw and deposit, pay bills, Transfers, and Account Information, but what make our Smart ATM more efficiency as Face recognition, Currency exchange, Auto failure alert, Phone smart login open an account, CCTV, and catch a wanted person.

### 2.2 Product Function

Major Functions:

**Account:** for the client account that include account information, pay bills, balance, print account statement, transfer money to another client

**Withdraw:** take money from client account.

**Deposit:** deposit money to client account.

**Card issuance:** it's for creating a new card, renewal card, and Replacement of lost card.

**Print:** it's for card print, receipt print, check print, account history print.

**Security:** that's contain safety of smart ATM as CCTV, fingerprint, barcode reader, catch a wanted person, auto failure alert, face recognition, Phone smart login.

**Currency exchange:** to exchange any currency to Riyal.

**Card reader:** it reads the card information and validates the information from the database.

### 2.3 User Classes and Characteristics

Nowadays, every person uses ATM, so we try to make it simpler especially some stuff like withdraw or deposit, but often it needs someone who has some knowledge a in technology.

### 2.1 Design and Implementation Constraints

- timing such printing takes a lot of time.
- Accessing databases.
- Processing data so we need powerful processing unit.
- Dealing with the government regarding wanted persons.

### 2.2 Assumptions and Dependencies

- Place - such in a bank that already has CCTV.

## **3 User Requirements**

### **3.1 Internal Printer**

#### **R1: Printing cards**

The machine should print cards when requested by the user.

**Rationale:** One of the key features of the project.

**Source:** The ATM acts as self-service bank.

**Status:** Implemented in initial prototype.

**Priority:** High.

#### **R2: Printing Receipts**

Printing transaction receipt.

**Rationale:** Basic ATM function.

**Source:** From the normal ATM machine.

**Status:** Already implemented.

**Priority:** High.

### **3.2 Dispensing and depositing**

#### **R1: Depositing check**

Depositing a check

**Rationale:** A convenient way of depositing checks.

**Source:** From the Standard ATM machine.

**Status:** only a concept.

**Priority:** Medium.

#### **R2: Withdrawing a smaller bill**

Having the option to dispense a smaller bill

**Rationale:** Some clients need smaller change for some purchases.

**Source:** Some ATM machines have this function.

**Status:** only a concept.

**Priority:** Low.

## 4 Use Cases

This list use cases of the system and its features for different users/clients/people perspectives. Use cases must have identifiers *UCx*.

### 4.1 Customer use case

#### **Deposit && Withdraw: Deposit and withdraw from ATM**

**Description** Allows customer to deposit and withdraw

##### **Basic Flow**

1. Select deposit and withdraw list.
2. Select deposit or withdraw.
3. If customer select withdraw.
  - 3.1. Select withdrawal amount and write money number.
  - 3.2. Give customer option to print bill of account.
4. If customer select deposit.
  - 4.1 – The machine will open place of deposit money.
  - 4.2 – Put money in place of deposit money, but put money carefully and with write shape place.

#### **Money Transfer: transfer money from ATM**

**Description** Allows customer to transfer his money to another person account or to his anther's accounts.

##### **Basic Flow**

1. Select transfer money list.
2. Machine will give him options of transfers to (local bank, global bank, previous added accounts)
3. If customer select local bank
  - 3.1. Machine will give him locals banks
  - 3.2. Select the banks and add new account information of local bank account selected.
  - 3.3. Write amount money will transfer after machine check of the information account.
4. If customer select global bank.
  - 4.1 – Machine will give him global banks that our machine can deal with.
  - 4.2. Select the banks and add new account information of global bank account selected.
  - 4.3. Write amount money will transfer after machine check of the information account.
5. If customer select previous added accounts
  - 5.1. Machine will give him option to select which bank you added before.
  - 5.2. After he select bank then the accounts which added in this bank will displays
  - 5.3 Select the account and write amount money will transfer.

**Paying Bills: paying bills from ATM**

**Description** Allows customers to pay his bills

**Basic Flow**

1. Select paying bills list.
2. Select pays and fees.
3. Select desired services that what you want to pay for.
4. Then write the account number that you want to pay for.

**Open New an Account: open new an account from ATM**

**Description** Allow customer to open new account from the ATM

**Basic Flow**

1. Select account list
2. Select new account
3. Will ask you some information about yourself to write (correct name, national id, ages, phone numbers, password)
4. After writes all information then checks from your phone's numbers,

**Printing Check: prints check from ATM**

**Description** Allows customers to print checks using ATM

**Basic Flow**

1. Select other services.
2. Select print check.
3. Write a check amount.

**Updating Account Information: update information from ATM**

**Description** Allows to update his information account from ATM (phone number, after expired card)

**Basic Flow**

1. Select account list.
2. Select update account information.
3. There are two options (information, expired card).
4. If customer select information, then he can edit some information like (phone number, ID card renewal)
5. If customer select expired card, then ATM will ask about his new information to update his card.

## **5 External Interface Requirements**

### **5.1 User Interface**

The UI elements are laid out with a substantial focus on the user experience, also the UI designed with heavy emphasis on reliability and responsivity, while on stand-by mode the machine will display useful information and ads, when the client approaches the machine it will automatically stop playing ads and start identifying the client via the face recognition system, if the client is not registered in the face id service the machine will prompt the client to either insert a card, use the smart phone login, fingerprint login or lastly open a new account if the client is not registered.

### **5.2 Hardware Interface**

The ATM features a touch screen which will work flawlessly with the UI which is designed with both touch controls and the usual side buttons, also there is the usual ATM keypad which offers a slightly better security especially with the side covers that minimize the chance of shoulder suffers.

### **5.3 Software Interface**

The Smart ATM is directly connected to both the bank and the authorities' databases, the latter being for the criminal recognition feature that is implemented, also the auto alert function which will alert the maintenance department of any issues or malfunctions that might occur.



## **6 Nonfunctional Requirements**

### **6.1 Performance Requirements**

#### **R1: Responsiveness**

**Description:** The ATM should be responsive with operations.

**Rationale:** so people don't get bored.

### **6.2 Security Requirements**

#### **R1: Allowed PIN attempts**

**Description:** must be entered correctly within 3 attempts.

**Rationale:** to reduce the chance of accessing the account to a card theft.

#### **R2: Security camera**

**Description:** camera in the ATM that records the person using it.

**Rationale:** to catch a wanted person or robbers.

#### **R3: Private screen panel**

**Description:** an ATM panel that others in the area can't see.

**Rationale:** you don't want others to see your account information.

### **6.3 Availability requirements**

#### **R1: Backup power supply**

**Description:** the ATM will have a backup power supply.

**Rationale:** in case of power failure.

### **6.4 Compatibility requirements**

#### **R1: Phones and ATM compatibility**

**Description:** the ATM should be compatible with phones.

**Rationale:** for easy and quick login.

## A Glossary

**ATM:** Automated teller machine (ATM) is an electronic banking outlet that allows customers to complete basic transactions without the aid of a branch representative. <sup>[google]</sup>

**CCTV:** *CCTV* stands for closed-circuit television and is commonly known as *video surveillance*. <sup>[paessler.com]</sup>

**Nonfunctional Requirements:** Nonfunctional Requirements (NFRs) define system attributes such as security, reliability, performance, maintainability, scalability, and usability. <sup>[scaledagileframework.com]</sup>

**Smart:** (of a device) programmed so as to be capable of some independent action. <sup>[google]</sup>