CS383 Group Project

**Software
Requirements
Specification**

(SRS)

for

Smart ATM

Version 2.0

Prepared by Group 2

Contents

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, Recognize a wanted person, Smartphone login, auto failure alert, currency exchange from any currency to Riyal.

1.2   Document Structure
-Overview Description: Describe the general factors that affect the product and its requirements.

-User Requirements: Identifying user requirements and their implementation states.

-Use Cases: List use cases of the system and its features.

-External Interface Requirements: Describe the internal interface requirements

-Nonfunctional Requirements: List and describe the Nonfunctional Requirements

1.3   Constraints
None

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
There are two users how will use the project Customers and Banks.
Customers how using for his account in the banks, and banks need to the system to make it easier and lowest their cost.

2.4 Design and Implementation Constraints
The system should take less time doing its functions.
The system should be efficient in for example memory and CPU.
The system should be safe and not hazard for users.
The system must be applicable for government regulations.
The system should be user friendly.

2.5 Assumptions and Dependencies

The machine needs a powerful power supply due to the assortment of functionalities, also the ATM can only be placed in a big branch because in case of failure the maintenance team can fix it fast.

3 User Requirements

3.1 Login

R1: Face Recognition

The ability to access an account with face recognition.

Rationale: One of the key features of the project.

Source: Inspired by the feature existing in most phones

Status: Implemented in initial prototype.

Priority: High.

R2: Fingerprint reader

Accessing the account with the user fingerprint.

Rationale: A key feature.

Source: Both laptops and phones have it.

Status: Implemented in initial prototype.

Priority: High.

R3: Smartphone login

Allows the user to access the account with their phone.

Rationale: Very convenient if lost or forgot your wallet.

Source: From the meeting with the client.

Status: Implemented in initial prototype.

Priority: High.

3.2 Calculations

R4: Converting currency

Converting currencies from any currency to Riyale or vice versa.

Rationale: Very convenient for international visitors.

Source: From the meeting with the client.

Status: Implemented in initial prototype.

Priority: Medium.

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 cases

1. **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.

2. **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.

3. **Paying Bills: paying bills from ATM**

   Description   Allows customers to pays his bills

   Basic Flow

   1. Select paying bills list.

   2. Select pays and fees.

   3. Select desired services that what you want to pays for.

   4. Then write the account number that you want to pays for.

4. **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.

5. **Printing Check: prints check from ATM**

   Description   Allows customers to prints checks using ATM

   Basic Flow

   1. Select other services.

   2. Select print check.

   3. Write a check amount.

6. **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.

7. **Login by multiple way: multiple way login on ATM**

   Description   Allows customer to login by multiple way.

  Basic Flow
1. Machine will give customer 4 option of login his account (face recognition default way, fingerprint recognition, phone, card)
2. Face recognition(default):
   - 2.1. when customer front of camera of ATM then will check of database directly and open his account.
3. If customer select fingerprint recognition:
   - 3.1. Machine will ask customer (put your fingerprint in place of fingerprint) then will check of database directly and open his account.
4. If customer select phone:
   - 4.1. Machine will ask him (be your phone near to ATM) then will check of database directly and open his account.
5. If customer select card:
   - 5.1. ATM will ask him (put your card in place of card)
   - 5.2. ATM will ask him (enter your password card) then will check of database directly and open his account.

8. **Currency exchange from any currency to Rials: exchanges any currency to Rials on ATM**

   Description   Allows customers to exchange any currency he has to rials.

  Basic Flow
1. Select other services.
2. Select change any currency to rials
3. Machine will ask customer (put your any currency rather than rials)

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

R5: Responsiveness

Description: The ATM should be

responsive with operations.

Rationale: so people don't get bored.

6.2   Security Requirements

R6: Allowed PIN attempts
Description: must be entered correctly within 3 attempts.
Rationale: to reduce the chance of accessing the account to a card theft.

R7: Security camera
Description: camera in the ATM that records the person using it.
Rationale: to catch a wanted person or robbers.

R8: 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

R9: Backup power supply
Description: the ATM will have a backup power supply.
Rationale: in case of power failure.

6.4 Compatibility requirements

R10: 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. [google]

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

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

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