Software Requirements Specification for FNB Automatic Teller Machine Group 17 Mini Project Main Phase 1

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1 Introduction

Purpose: The main component of the product will be the FNB Next Gen application on the user's phone to communicate with the FNB ATM that would be aimed at making the entire ATM banking experience more efficient for the user by using the NFC and the QR code technology without making the system any less secure. Vision: The vision of the project is to find a new generation

approach on making the current FNB ATM using process more efficient using the NFC technology for the phones that support NFC, QR code for the phones that do not have the NFC reader and the default FNB card option. Need for the business: The need for this product arose after discovering clients spending a significant time whilst using the FNB ATM system. The FNB Next Gen app must make the system more efficient for the user if the user possess the NFC or QR code display features on their phones. This product is made for all FNB clients who have the FNB Next Gen app installed on their phones and would like to shorten their time at the ATM by using the app to do the authentication process which would output a QR code for the ATM to read or send data to the ATM machine via NFC or through the user's bank card.

2 User Characteristics

- Unregistered Users:
  - Sign up for an FNB account.
- Registered Users:
  - Withdraw money at ATMs.
  - Make deposits at ATMs.
  - Transfer money to other individuals.
  - Make in store payments.
  - Check account balance.
- Admin:
  - Monitor ATM's status.
  - Maintain ATMs.

3 Functional Requirements

R.1 The FNB Next Gen App must allow a previously unregistered user to register for an account

R.2 The FNB Next Gen App must allow a registered user to login

R.2.1 The FNB Next Gen App must use two factor authentication

R.3 The FNB Next Gen App must display the current balance(s) of linked account(s) after successfully logging in

R.4 The FNB Next Gen App must display the nearest operational FNB ATM

R.5 The FNB Next Gen App must authenticate transactions with the FNB ATM

R.5.1 The FNB Next Gen App must allow authentication using NFC

R.5.2 The FNB Next Gen App must allow authentication using QR Code

R.5.3 The FNB Next Gen App must allow authentication using OTP

R.5.4 The FNB Next Gen App must allow authentication using Bank Card

R.6 The FNB Next Gen App must allow a user to print a mini-statement at an FNB ATM

R.7 The FNB Next Gen App must allow a user to deposit cash at an FNB ATM

R.8 The FNB Next Gen App must allow a user to withdraw cash at an FNB ATM

R.9 The FNB Next Gen App must allow transferral of funds between two accounts

R.10 The FNB Next Gen App must allow for payments of goods or services

R.10.1 The FNB Next Gen App must authenticate payments using NFC

R.10.2 The FNB Next Gen App must authenticate payments using QR Code

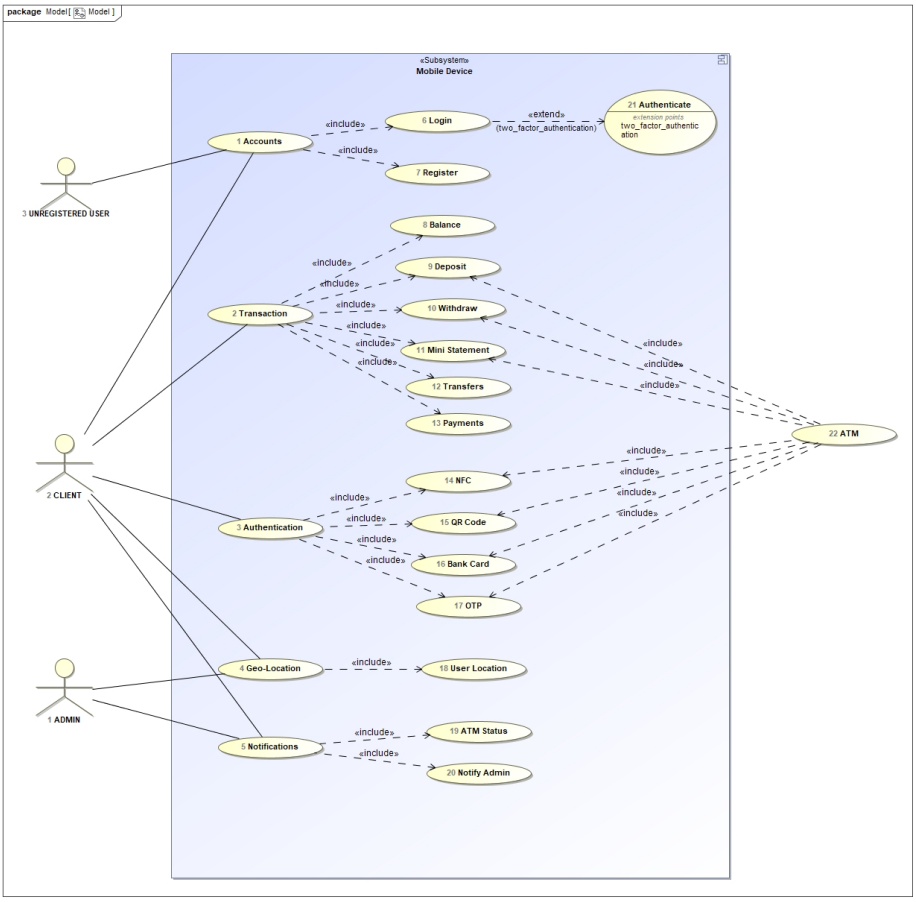
R.11 The FNB Next Gen App must determine a user's current location using geolocation

R.12 The FNB ATM must notify the FNB Next Gen Network of its current status

R.13 The FNB Next Gen Network must display a list of non-operational FNB ATMs for admin personnel

R.14 The FNB Next Gen Network must determine approximate traffic at ATMs using geolocation

4 Use Case diagram



5 Quality Requirements

R.1 Performance

R.1.1 The system must efficiently make use of bandwidth to ensure performance on slow connections to the server.

R.1.2 The system must have backup servers for redundancy and load balancing.

R.2 Reliability

R.2.1 The system must have close to 100% up time.

R.2.2 The system must be able to handle large amounts of traffic without slowing down.

R.2.3 The system must be continuously tested and upgraded to improve the experience as well as security.

R.2.4 Each subsystem must be thoroughly checked and tested to ensure security and proper error handling.

R.3 Security

R.3.1 The system must use 2 factor authentication for user authentication.

R.3.2 The system must use encrypted and secure communication with the server.

R.3.3 The system must comply with FICA guidelines.

R.3.4 The system must require additional authentication on withdrawals, transfers and payments.

R.3.5 The system must notify the user, via SMS, once a transaction has been created and completed.

R.4 Monitorability

R.4.1 The system must be remotely monitorable.

R.4.2 The system must report it's status and usage to admins.

R.4.3 The system must report whether it is online or not to clients.

R.4.4 The system must report errors or problems.

R.5 Integrability

R.5.1 The system must be able to work with existing FNB systems and servers.

R.6 Cost

R.6.1 The system must use existing technologies and libraries to keep costs to a minimum.

R.6.2 The system must use existing hardware available at physical ATMs.

R.7 Usability

R.7.1 The system must be responsive.

R.7.2 The system must be easy and straightforward to use.

6 Trace-ability matrix

	ACCOUNTS	TRANSACTION	AUTHENTICATION	GEO-LOCATION	NOTIFICATION
R.1	x				
R.2	x				
R.2.1	x				
R.3		x			
R.4				x	x
R.5		x	x		
R.5.1		x	x		
R.5.2		x	x		
R.5.3		x	x		
R.5.4		x	x		
R.6		x			
R.7		x			
R.8		x			
R.9		x			
R.10		x			
R.10.1			x		
R.10.2			x		
R.11				x	
R.12					x
R.13				x	x
R.14				x	x