**Software Requirements Specifications**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Project Name** | **Version** | **Author** | **Date** | **Comment** | **Peer review** | **Date** | **Comment** |
|
| **Internet Banking System** | **1.1** | **Alaa Gamal** | **1-May-19** | **Adding Functional Requirements** |  |  |  |

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# **Introduction**

## 1.1. Purpose

The purpose of this document is to present a detailed description of the Internet Banking System. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external unexpected event. This document is intended for the stakeholders, architects, developers and testers of the system and will be proposed to the Regional Historical Society for its approval.

## 1.2. Scope of Project

This software system will be an Internet Banking. This system will be designed to allow the client deal easily with his/her banking accounts through internet.

More specifically, this system is designed to allow a client to manage and use his/her account/s

As display his/her previous transactions, make transactions between his/her inter accounts or for external accounts .The system also contains a relational database containing a list of clients with their transactions.

# **Description of Overall System**

## Functional Requirements Specifications

### **Registration**

Form contains two web pages , first page will contain username, password, confirm password, user ID fields and mobile phone number to authorized the client by sending message to him including verification code .

And also contain radio button to determine the type of user normal client or admin.

Second page will be verification page.

**Table1: Atomic requirements of registration.**

|  |  |  |  |
| --- | --- | --- | --- |
| **SRS ID** | **Requirement** | **CR ID** | **SIQ\_ID** |
| BANK\_SYS\_SRS\_Reg\_R001 | Registration form must contain username field | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q29  BANK\_SYS\_SIQ\_Q08 |
| BANK\_SYS\_SRS\_Reg\_R002 | Registration form must contain password field | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q29  BANK\_SYS\_SIQ\_Q08 |
| BANK\_SYS\_SRS\_Reg\_R003 | Registration form must contain confirmation password field | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q29  BANK\_SYS\_SIQ\_Q08 |
| BANK\_SYS\_SRS\_Reg\_R004 | Registration form must contain mobile phone field. | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q29  BANK\_SYS\_SIQ\_Q08 |
| BANK\_SYS\_SRS\_Reg\_R005 | Registration form must contain Email field. | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q29  BANK\_SYS\_SIQ\_Q08 |
| BANK\_SYS\_SRS\_Reg\_R006 | Registration form must Register Button. | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q29  BANK\_SYS\_SIQ\_Q08 |
| BANK\_SYS\_SRS\_Reg\_R007 | Username field must accept only characters and numbers with max length 32. | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q15 |
| BANK\_SYS\_SRS\_Reg\_R008 | Password shall be a strong password contains numbers, characters (capital and small) and special characters. | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q15 |
| BANK\_SYS\_SRS\_Reg\_R009 | Password field shall accept length from 8:12. | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q15 |
| BANK\_SYS\_SRS\_Reg\_R010 | confirmation password must contain same data that in password field |  |  |
| BANK\_SYS\_SRS\_Reg\_R011 | User ID Field must not exceed 14 digit. It must accept only digits. | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q15 |
| BANK\_SYS\_SRS\_Reg\_R012 | User ID Field must accept only digits. | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q15 |
| BANK\_SYS\_SRS\_Reg\_R013 | Mobile phone field must accept only digits | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q15 |
| BANK\_SYS\_SRS\_Reg\_R014 | Email field must accept only valid email | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q15 |
| BANK\_SYS\_SRS\_Reg\_R015 | After the user click on Register button, the user will be redirect to the verification page. | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q15 |
| BANK\_SYS\_SRS\_Reg\_R016 | Verification page must contain text field with title verification code has 3 cells. | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q17 |
| BANK\_SYS\_SRS\_Reg\_R017 | Each cell of verification code shall accept 2 numbers only | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q17 |
| BANK\_SYS\_SRS\_Reg\_R018 | Verification page must contain confirm button | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q17 |
| BANK\_SYS\_SRS\_Reg\_R019 | After clicking on confirmation button and with valid data the user will be redirect to home page | Bank\_Sys\_CR\_001 |  |
| BANK\_SYS\_SRS\_Reg\_R020 | In case of Admin: will be input field of staff ID. | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q29   BANK\_SYS\_SIQ\_Q30 |
| BANK\_SYS\_SRS\_Reg\_R021 | Maximum number that can mobile phone field accepts it shall be 20 digits. | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q27 |
| BANK\_SYS\_SRS\_Reg\_R022 | Constrains of staff ID field must not exceed 6 digits. | Bank\_Sys\_CR\_001 | BANK\_SYS\_SIQ\_Q33 |

### **Login Form**

Form contains username, password and user ID fields and Login button.

|  |  |  |  |
| --- | --- | --- | --- |
| **SRS ID** | **Requirement** | **CR ID** | **SIQ\_ID** |
| BANK\_SYS\_SRS\_Log\_R001 | Login form must contain username field | Bank\_Sys\_CR\_002 | BANK\_SYS\_SIQ\_Q9 |
| BANK\_SYS\_SRS\_Log\_R002 | Login form must contain password field | Bank\_Sys\_CR\_002 | BANK\_SYS\_SIQ\_Q9 |
| BANK\_SYS\_SRS\_Log\_R003 | Login form must contain ID field | Bank\_Sys\_CR\_002 | BANK\_SYS\_SIQ\_Q9 |
| BANK\_SYS\_SRS\_Log\_R004 | Login form must contain Login button | Bank\_Sys\_CR\_002 | BANK\_SYS\_SIQ\_Q9 |
| BANK\_SYS\_SRS\_Log\_R005 | username field accept only characters  and numbers | Bank\_Sys\_CR\_002 | BANK\_SYS\_SIQ\_Q16 |
| BANK\_SYS\_SRS\_Log\_R006 | User name field must not exceeds max length of 32. | Bank\_Sys\_CR\_002 | BANK\_SYS\_SIQ\_Q16 |
| BANK\_SYS\_SRS\_Log\_R007 | ID field accepts only numbers. | Bank\_Sys\_CR\_002 | BANK\_SYS\_SIQ\_Q16 |
| BANK\_SYS\_SRS\_Log\_R008 | Password field shall accept any input to make secure login | Bank\_Sys\_CR\_002 | BANK\_SYS\_SIQ\_Q17 |
| BANK\_SYS\_SRS\_Log\_R009 | Password field shall accept any input to make secure login | Bank\_Sys\_CR\_002 | BANK\_SYS\_SIQ\_Q17 |
| BANK\_SYS\_SRS\_Log\_R010 | In case of the user enter password wrong more than 3 times, the account to be unavailable for login for the next 24 hours and no need to visit the bank branch to restore the account, yet the user should be notified on his mobile by an SMS that he won't be able to further login on his account for the next 24. | Bank\_Sys\_CR\_002 | BANK\_SYS\_SIQ\_Q36 |

### **Access the account/s**

The client should have a direct access to his/her different accounts where he can view a history of previous transactions.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SRS\_ID** | **Requirement** | **CR\_ID** | **SIQ\_ID** |  |
| BANK\_SYS\_SRS\_PT\_R001 | Main page shall contain all customer accounts (currents and saving accounts) in hyperlinks. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q18 |  |
| BANK\_SYS\_SRS\_PT\_R002 | cst shall be able to have any numbers of accounts (savings and current). | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q3 |  |
| BANK\_SYS\_SRS\_PT\_R003 | Customer shall be able to click on any account hyper link to be redirected to the account page. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q19 |  |
| BANK\_SYS\_SRS\_PT\_R004 | account page shall display the cst balance | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q19 |  |
| BANK\_SYS\_SRS\_PT\_R005 | Account page shall have a hyperlink with title transfer. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q19 |  |
| BANK\_SYS\_SRS\_PT\_R006 | Account page shall have a hyperlink with title previous transactions. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q19 |  |
| BANK\_SYS\_SRS\_PT\_R007 | If cst clicks on transfer page, cst shall be redirected to transfer page. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q19 |  |
| BANK\_SYS\_SRS\_PT\_R008 | If cst clicks on previous transactions page, cst shall be redirected to previous transactions page. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q19 |  |
| BANK\_SYS\_SRS\_PT\_R009 | Previous transactions page shall have drop box with three options (week, month and year) with a default value of month. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q21 BANK\_SYS\_SIQ\_Q28 |  |
| BANK\_SYS\_SRS\_PT\_R010 | Previous transactions page shall have button with title view. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q21 |  |
| BANK\_SYS\_SRS\_PT\_R011 | If cst chooses week from the drop box in the previous transactions page, a second cascaded drop box shall be displayed with 4 options (1, 2,3,4) with default value 1. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q22 |  |
| BANK\_SYS\_SRS\_PT\_R012 | If cst chooses month from the drop box in the previous transactions page, a second  cascaded drop box shall be displayed with 12 options from 1to 12 with default value 1. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q22 |  |
| BANK\_SYS\_SRS\_PT\_R013 | if cst chooses year from the drop box in the previous transactions page , a second  cascaded drop box shall be displayed with 5 options from 1to 5 with default value 1. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q22 |  |
| BANK\_SYS\_SRS\_PT\_R014 | If cst clicks on view button, cst shall be redirected to a page with his previous transactions according to what he chose from the drop box by maximum 5 years. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q22 BANK\_SYS\_SIQ\_Q5 |  |
| BANK\_SYS\_SRS\_PT\_R015 | if cst clicks on view button and he doesn't have transactions in this period , cst shall be redirected to  a page with message of " no valid transactions in this period " | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q22 |  |
| BANK\_SYS\_SRS\_PT\_R016 | the listing transactions page shall have listed items  with three radio buttons (10, 20, 30) | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q22 |  |
| BANK\_SYS\_SRS\_PT\_R017 | cst shall be able to select one radio button to identify the numbers of previous transactions displayed per page. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q22 |  |
| BANK\_SYS\_SRS\_PT\_R018 | The listing transactions page shall have next button in the shape of next arrow at the end of the listing page. Which will be un clickable at the last (10, 20 or 30). | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q28 |  |
| BANK\_SYS\_SRS\_PT\_R019 | The listing transactions page shall have back button in the shape of back arrow at the end of the listing page. Which will be un clickable at the first (10, 20 or 30). | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q28 |  |
| BANK\_SYS\_SRS\_PT\_R020 | each previous transaction shall display the ID of the cst who he has transferred the money to or receive the money from | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q6 |  |
| BANK\_SYS\_SRS\_PT\_R021 | Each previous transactions shall display the amount in red in case cst transferred to. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q6 |  |
| BANK\_SYS\_SRS\_PT\_R022 | Each previous transactions shall display the amount in green in case cst receive from. | BANK\_SYS\_CR\_003 | BANK\_SYS\_SIQ\_Q6 |  |
|  |  |  |  |  |
|  |  |  |  |  |

### **Transaction**

The client should have the ability to perform transaction either between his/her accounts or between him and external accounts.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SRS\_ID** | **Requirement** | **CR\_ID** | **SIQ\_ID** |  |
| BANK\_SYS\_SRS\_TR\_R001 | Transfer page shall contain text field with title amount. | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q20 |  |
| BANK\_SYS\_SRS\_TR\_R002 | Text field “amount " shall only accept numbers. | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q20 |  |
| BANK\_SYS\_SRS\_TR\_R003 | Transfer page shall contain text field with title account ID. | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q20 |  |
| BANK\_SYS\_SRS\_TR\_R004 | Text field “account ID " shall only accept numbers. | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q20 |  |
| BANK\_SYS\_SRS\_TR\_R005 | Transfer page shall contain drop box with title bank name contains all banks names with our bank as default value. | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q20 |  |
| BANK\_SYS\_SRS\_TR\_R006 | transfer page shall contain button with title submit | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q20 |  |
| BANK\_SYS\_SRS\_TR\_R007 | if cst entered invalid account ID , error msg   "You have entered an invalid account , Please try again" | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q44 |  |
| BANK\_SYS\_SRS\_TR\_R008 | if cst entered amount of money greater than his balance , error msg shall be displayed "you don't have the required amount , please check your balance". | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q43 |  |
| BANK\_SYS\_SRS\_TR\_R009 | cst can transfer to any account (current or savings) in the same bank or in different bank . | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q4 |  |
| BANK\_SYS\_SRS\_TR\_R010 | The maximum amount of money can cst tranfer to any other current account shall be 10,000 per transaction. | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q12 |  |
| BANK\_SYS\_SRS\_TR\_R011 | The maximum amount of money can cst tranfer to any other saving account shall be 100,000 per transaction. | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q12 |  |
| BANK\_SYS\_SRS\_TR\_R012 | The maximum amount of money can cst tranfer to any specific current account shall be 100,000 per day. | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q14 |  |
| BANK\_SYS\_SRS\_TR\_R013 | The maximum amount of money can cst tranfer to any other saving account shall be 1000,000 per day. | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q14 |  |
| BANK\_SYS\_SRS\_TR\_R014 | cst shall be able to transfer any amount of money per day unless exceeding the maximum amount of money for each account cst will transfer to. | BANK\_SYS\_CR\_004 | BANK\_SYS\_SIQ\_Q13 |  |
|  |  |  |  |  |

### **Types of User:**

1. Client: Registration, Login, view previous transaction, transaction.
2. Admin: Registration, Login, Add client, Delete client, doing any transaction.

|  |  |  |  |
| --- | --- | --- | --- |
| **SRS ID** | **Requirement** | **CR ID** | **SIQ\_ID** |
| BANK\_SYS\_SRS\_Admin\_R001 | Admin can add user | N/A | BANK\_SYS\_SIQ\_Q10 |
| BANK\_SYS\_SRS\_Admin\_R002 | Admin can do any transaction | N/A | BANK\_SYS\_SIQ\_Q10 |
| BANK\_SYS\_SRS\_Admin\_R003 | Admin can remove user | N/A | BANK\_SYS\_SIQ\_Q10 |
| BANK\_SYS\_SRS\_Admin\_R004 | Main page of admin shall be contain text field with title id (to enter cst id ) | N/A | BANK\_SYS\_SIQ\_Q31 |
| BANK\_SYS\_SRS\_Admin\_R005 | Main page of admin shall be contain2 buttons (delete - view) | N/A | BANK\_SYS\_SIQ\_Q31 |
| BANK\_SYS\_SRS\_Admin\_R006 | admin can remove user using delete button | N/A | BANK\_SYS\_SIQ\_Q31 |
| BANK\_SYS\_SRS\_Admin\_R007 | Admin can use view button to redirect to customer account page. | N/A | BANK\_SYS\_SIQ\_Q31 |
| BANK\_SYS\_SRS\_Admin\_R008 | Home page of admin shall contain a hyper link: add new account. | N/A | BANK\_SYS\_SIQ\_Q31 |
| BANK\_SYS\_SRS\_Admin\_R009 | in case of a admin click on hyper link : add new account , admin shall be redirected to the normal registration page in which  he can enter all cst data and no need to send a verification code to the  phone number in this case. | N/A | BANK\_SYS\_SIQ\_Q32 |
|  |  |  |  |

## Nonfunctional Requirements Specifications

From our scope, there are two nonfunctional requirements.

### **Performance**

### **Security.**

### **Usability.**

|  |  |  |  |
| --- | --- | --- | --- |
| **SRS ID** | **Requirement** | **CR ID** | **SIQ\_ID** |
| BANK\_SYS\_SRS\_NF\_R001 | Performance: The avg latency of 90% percent is 7 sec by maximum for each response on a request hits the backend. | N/A | BANK\_SYS\_SIQ\_Q24 |  |
| BANK\_SYS\_SRS\_NF\_R002 | Performance : the load of the system around 2000 TPS (Transaction per second) | N/A | BANK\_SYS\_SIQ\_Q24 |  |
| BANK\_SYS\_SRS\_NF\_R003 | Security: the system must have 2way authentication in registration | N/A | BANK\_SYS\_SIQ\_Q11 |  |
| BANK\_SYS\_SRS\_NF\_R004 | Security: Session time out is 2 minute | N/A | BANK\_SYS\_SIQ\_Q11 |  |
| BANK\_SYS\_SRS\_NF\_R005 | Security: in registration and login , if customer click on back button ,all fields will be clear | N/A |  |  |
| BANK\_SYS\_SRS\_NF\_R006 | Usability : the color of website will be blue and white | N/A | BANK\_SYS\_SIQ\_Q35 |  |
|  |  |  |  |  |