Cairo University
Faculty of Computers and Artificial Intelligence



CS251

Introduction to Software Engineering

Money Minds

Software Requirements Specifications

Version 1.0

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# **Software Requirements Specifications**

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# **Software Requirements Specifications**

### **Team**

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## **Document Purpose and Audience**

### Purpose:

The purpose of this paper is to make the requirements for this software more understandable by outlining the features that the software must have in order to reduce development time and expenses.

### Audience:

- Software Development Team
- Stakeholders

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# **Software Requirements Specifications**

### Introduction

### **Software Purpose**

The purpose of the Money Minds Software is to help users set and achieve financial goals while providing guidance for better financial planning and expense management.

### **Software Scope**

Money Minds Software implements a budget tracking system for individual users or even organizations, offering various functionalities for expense tracking, income management, setting financial goals, spending analysis, and budget planning. The app helps users monitor their financial activities, generate reports, and gain insights into their spending habits to make informed financial decisions.

### Definitions, acronyms, and abbreviations

Phrase	Definition
Budget	A financial plan written down to decide how much money would be spent each month on what.
Income Sources	Something that provides a regular supply of money, such as employment, investments, or real estate

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# **Software Requirements Specifications**

## **Requirements**

## **Functional Requirements**

Requirement ID	Requirement State		
FR01	As soon as the user launches the application, a login/sign-up screen will appear.		
FR02	If the user chooses to log in, the application will provide a box for them to enter their username and password.		
FR03	If a user chooses to register, the app will provide a signup page where they can enter their personal information, including first name, last name, password, gender, country, and email address. And asking if the user would like to sync with their bank account. This registration process will enable personalized features and secure access to their financial data.		
FR04	The application shall have a panel for users to manage their budgets, consisting of:  1. "My Budget" tab where users can:  Create a new budget by specifying income sources, expense categories, and budget limits.  Edit or delete existing budgets.  View a summary of their financial status, including total income, total expenses, and remaining budget.  Transactions" tab where users can:  Add new transactions by entering details such as category, amount, date, and payment method.  Edit or delete recorded transactions.  Filter transactions by date, category, or amount.  "Goals" tab where users can:  View their financial goals  Set new financial goals by specifying target savings, timeframes, and desired spending limits.  Track progress toward their financial goals based on their recorded transactions.		

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FR05	The application shall provide a Reports panel where users can:		
	View graphical representations (charts, graphs) of their spending and savings trends.		
	<ol> <li>Generate summary reports of monthly or yearly income and expenses.</li> <li>Export reports in PDF or Excel format for external use.</li> </ol>		
FR06	The application shall provide notifications to help users stay on track with their financial goals:		
	<ol> <li>Budget Alerts: Notify users when they are approaching or exceeding their budget.</li> <li>Bill Reminders: Send reminders for upcoming bills and due payments.</li> <li>Goal Progress Notifications: Notify users of their progress toward financial</li> </ol>		
	goals.		

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# **Software Requirements Specifications**

## **Non-Functional Requirements**

Measure	Details
Performance	<ul> <li>The sign-in/sign-up screen should load within 3 seconds under normal network conditions.</li> <li>Every panel in the system should take less than 7 seconds to load, even under peak usage.</li> </ul>
Scalability	<ul> <li>The system must support up to 3,000 users without experiencing performance degradation.</li> <li>It should be designed to scale dynamically as the user base grows.</li> </ul>
Maintainability	<ul> <li>The system should have an 80% probability of being maintainable within 72 hours in case of critical failures.</li> <li>Critical issues should have a 75% probability of resolution within three days.</li> </ul>
Reliability & Availability	<ul> <li>The system should maintain at least 90% uptime per month, ensuring minimal downtime.</li> <li>The system should function without major issues at least 90% of the time in each month.</li> </ul>
Portability & Compatibility	<ul> <li>The system should be cross-platform, supporting Desktop, Android, and iOS devices.</li> <li>The app should be optimized for both low-end and high-end mobile devices, ensuring smooth performance.</li> <li>The system should be compatible with the latest and previous two major OS versions (e.g., Android 12, 13, 14 and iOS 16, 17, 18).</li> <li>The app should work in both online and offline modes, allowing users to access essential features without an internet connection.</li> </ul>
Security	<ul> <li>Users must only access their own payment details and private data.</li> <li>Unauthorized users must not access restricted pages or perform unauthorized actions.</li> <li>The system must follow OWASP security standards to prevent common web vulnerabilities.</li> <li>Data must be encrypted at rest and in transit to protect user privacy.</li> </ul>

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# **Software Requirements Specifications**

Usability	<ul> <li>The interface should be user-friendly, intuitive, and require minimal training.</li> <li>The system should follow UX best practices for accessibility and ease of navigation.</li> </ul>
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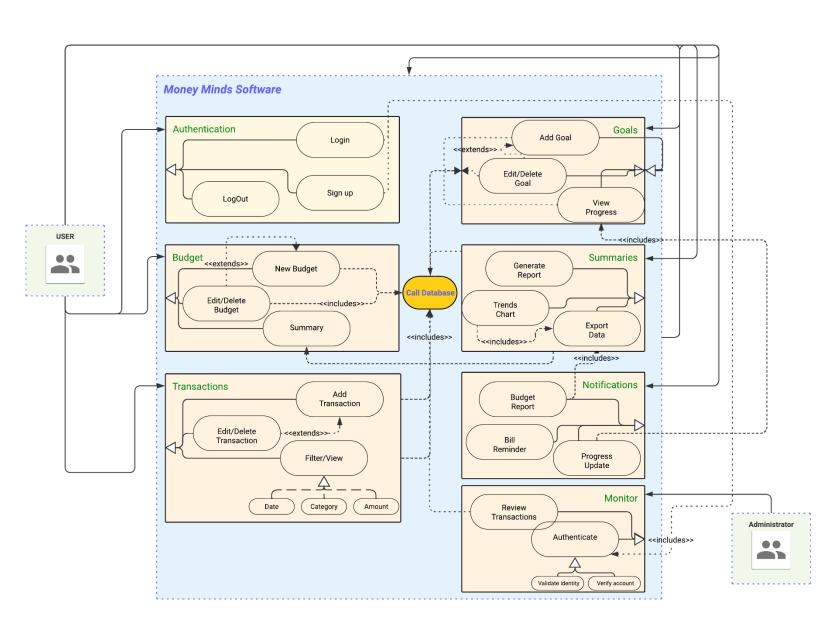
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# **Software Requirements Specifications**

## **System Models**

**Use Case Model** 



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# **Software Requirements Specifications**

### **Enriched User Stories**

- Using below table template, <u>for each</u> requirement write an enriched user story specifying the details of each use case and showing the interaction to implement this use case.
  - o If one requirement is so big, you could divide it to more than one user story.
  - o If some requirements are not major, you could plugin them in other user stories.
- Flow of events should be very detailed

#### Yarab ya hossam

#### User Story #1

User Story ID	US #1
<b>User Story Name</b>	User Sign-up
Actors	User
	As a user
Description	I <b>like</b> to be able to sign-up to the application
	So that I can sign in and use its services
Per condition	
Post condition	
	Given I'm a user and I'm on the sign-up/log-in page
Acceptance Criteria	When I click sign-up and fill in all the fields with my information and click submit
	Then the system signs me up

### Scenarios

#### **Normal Scenario**

Actor Action	System Response
1- User clicks on sign-up	
	2- Redirect to sign-up page
	3- System displays boxes to enter information
3- User Fills in the boxes	
4- User chooses whether they want to sync with	
their bank account	

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# **Software Requirements Specifications**

5- User clicks submit	
	6- System verifies the user information
	<ul> <li>If user chooses to sync system adds</li> </ul>
	more features to user package
	<ul> <li>Else system doesn't add certain</li> </ul>
	features to user's account
	7- System saves user info in the database

### **Exceptional Scenario**

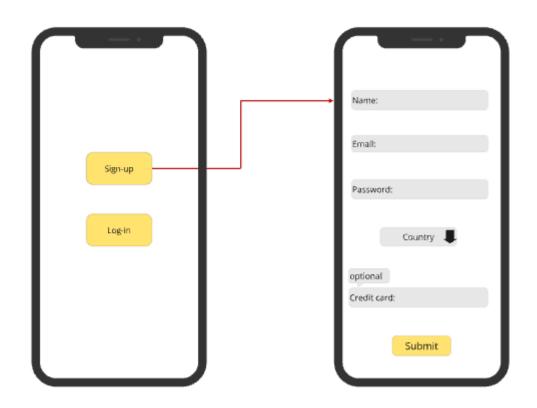
Actor Action	System Response
1- User clicks on sign-up	
	<ul><li>2- Redirect to sign-up page</li><li>3- System displays boxes to enter information</li></ul>
<ul><li>3- User Fills in the boxes</li><li>6- User clicks submit</li></ul>	
	<ul><li>5- System verifies the user information</li><li>7- System finds input information invalid</li><li>8- System displays "Please enter valid information." Message</li></ul>

## • Screen Design





# **Software Requirements Specifications**



## Data Dictionary:

Element Label	Type/Length	Data Validation / Business Rule
Name field	Text < 50 characters	Structured Text
Email field	Text < 50 characters	Structured Text
Password field	Alphanumeric < 50 Characters	Password confirmation and must include an uppercase letter, numbers and/or special characters
Country field	A-Z list	Middle eastern countries only??
Credit card field	Integer < 25 digits	

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# **Software Requirements Specifications**

## User Story #2

User Story ID	US #2
User Story Name	User log-in
Actors	User
	As a User
Description	I like to be able to log in to the application
	So that I can use its services
Per condition	
Post condition	
	Given I'm a logged-out user on the log-in page
Acceptance Criteria	When I fill in the "Username" and "Password" fields with my authentication credentials and I click the log-In button  Then the system logs me in to my account

#### Scenarios

### **Normal Scenario**

Actor Action	System Response
1- User clicks on log-in	
	<ul><li>2- Redirect to log-in page</li><li>3- System displays boxes to enter username and password</li></ul>
4- User Fills in the boxes 5- User clicks log-in	
	5- System verifies the user information
	7- System accesses user to their account

### **Exceptional Scenario**

Actor Action	System Response
1- User clicks on log-in	
	2- Redirect to log-in page

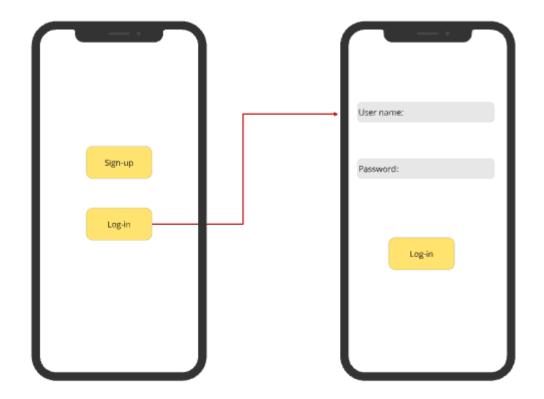




# **Software Requirements Specifications**

	3- System displays boxes to enter username and password
4- User Fills in the boxes 5- User clicks log-in	
	6- System verifies the user information 7- System finds input information invalid 8- System displays "Please enter valid username/password." Message

### Screen Design



## Data Dictionary:

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# **Software Requirements Specifications**

Element Label	Type/Length	Data Validation / Business Rule
Name field	Text < 50 characters	Structured Text
Password field	Text < 50 characters	Structured Text

## • User Story #3

User Story ID	US #3
<b>User Story Name</b>	Display Budgets
Actors	User
	<b>As</b> a User
Description	I like to be able to see my budgets list
	So that I can access a certain budget of mine
Per condition	
Post condition	
	Given I'm a logged-in user and I'm on the home screen
Acceptance Criteria	When I click on "MyBudgets" button
	Then the system redirects me to the Budgets list

### Scenarios

### **Normal Scenario**

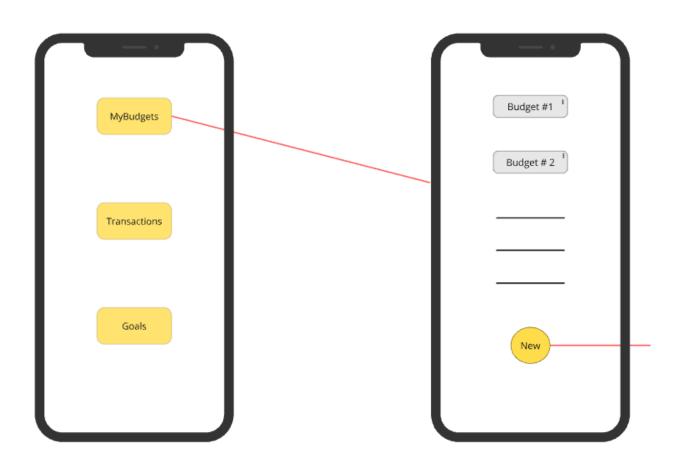
Actor Action	System Response
1- User clicks on "MyBudgets"	
	2- Redirect to Budgets page
	3- System displays all of user's Budgets and
	add budget button
	<ul> <li>If user has no budgets only display add</li> </ul>
	button





# **Software Requirements Specifications**

• Screen Design



• Data Dictionary:

Element Label	Type/Length	Data Validation / Business Rule
Budget name fields	Text < 25 characters	Structured Text

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# **Software Requirements Specifications**

### • User Story #4

User Story ID	US #4
<b>User Story Name</b>	Add a Budget
Actors	User
	<b>As</b> a User
Description	I like to be able to add a budget to my budgets list
	So that I can better manage my finances
Per condition	
Post condition	
	Given I'm a user in the "MyBudgets" page
Acceptance Criteria	<b>When</b> I click on the "Add" button and fill in the budget information fields
	Then the system adds the new budget to my budgets list

### Scenarios

#### **Normal Scenario**

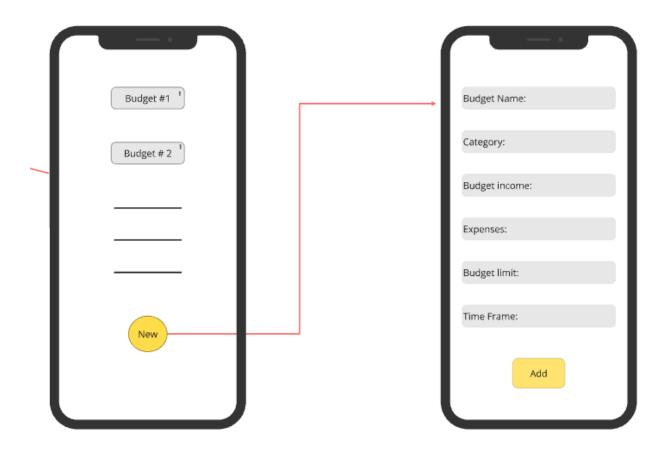
Actor Action	System Response
1- User clicks on "Add"	
	2 - System displays several boxes for input,
	including Budget name, Category, Budget
	income, Expenses, Budget limit, and Time
	frame
3- User clicks on "Add" button	
	4- System adds the budget to the database





# **Software Requirements Specifications**

## • Screen Design



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### Data Dictionary:

Element Label	Type/Length	Data Validation / Business Rule
Budget name field	Text < 50 characters	Structured Text
Category field	Text < 50 characters	Structured Text
Budget income field	Text < 100 characters	Structured Text





# **Software Requirements Specifications**

Element Label	Type/Length	Data Validation / Business Rule
Expenses field	Text < 100 characters	Structured Text
Budget limit field	Text < 100 characters	Structured Text
Time frame field	Text < 50 characters	Structured Text

### **System Navigation Map**

 Draw a navigation map that show how the screens are related (See example at https://stuff.mit.edu/afs/sipb/project/android/docs/training/design-navigation/wireframing.html)

### **Tools**

• Write a list of all tools used to develop the design (e.g., ArgoUML, Visual-Paradigm, mocqus, etc.)

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# **Software Requirements Specifications**

## **Ownership Report**

- Remove the following notes and any red notes
- For every item in this document, write the owners.
- Team leader must verify the table with the team members.

Student	Items he created
Mohammad Ali Sayed	Part of Use Case Model, Non-Functional Requirements, and User Stories #1 and #2.