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NAME

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**21BCE1542**

## EXERCISE : 3

### ATM (Automated Teller Machine) Software

The incremental model would be a more suitable process model for this scenario because it allows for the delivery of a working version of the software in stages, rather than all at once. This is beneficial in this scenario because the bank is requesting the software be delivered in stages, with additional features added in later releases.

The activities involved in the incremental model include:

1. Requirements Gathering: The software development team will make the SRS (Software Requirement Specifications) will be made. Also, the WBS (Work Breakdown Structure) will be planned.
2. Design: ER Diagrams will be designed
3. Implementation: The team will begin implementing the software based on the design.

4. Testing: The team will test the software to ensure it meets the requirements & is free of bugs.

5. Deployment: The initial release of the software will be deployed to the ATM machines.

6. Feedback: The bank will provide feedback on the initial release of the software.

7. Repeat: The above steps will be repeated for each subsequent release, with the new features & the functionalities being added incrementally.

8. Maintenance: The team will continue to maintain & support the software throughout its lifecycle.

The incremental model allows for a more flexible & adaptive approach to software development, allowing for changes & new features to be added as the project progresses.

# Software Requirements

## Specifications

### SRS FOR ATM

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### 1. Introduction

#### 1.1 Purpose

The purpose of this software is to provide customers with a convenient & efficient way to conduct banking transactions at ATM machines. The software will allow customers to deposit & withdraw funds, check account balances, change PIN numbers, & provide print balance & voice instruction for all features.

## 1.2 Document Conventions

DB	Database
DDB	Distributed Database
ER	Entity Relationship

## 1.3 Project Scope

1. Provide customers with the ability to deposit & withdraw funds from the ATM machine in a safe & secure manner.
2. Allow customers to check their account balances & transaction history.
3. Allow customers to change their PIN numbers & update personal info.

## 2. Overall Description:

### 2.1 Product Perspective

The ATM software will be integrated with the bank's existing systems, such as the database of customer information & their transaction processing system. The software will be installed on ATM machines & will be used by customers to conduct banking transactions, such as depositing & withdrawing funds, checking account balances, etc.

## 2.2 User Classes & Characteristics:

In the context of an ATM machine, customers should be able to perform a variety of tasks, such as :

- Deposit funds
- Withdraw funds
- Check account balances
- Transfer funds
- Change PIN numbers
- Print balance
- Voice instruction
- Dispense cash

## User Classes & Characteristics:

### 1. Customers

- May have varying levels of technical proficiency
- May have different needs
- Will be expected to use the ATM machines in a variety of locations & environments.

## 2. Bank Employees:

- Will have varying levels of technical proficiency
- Will need to be able to troubleshoot & resolve issues with the ATM machines
- Will need to be able to monitor the ATM machines remotely.

## 2.3 Operating Environment:

Operating environment for the machine

- Hardware: The ATM machines will be running on a standard x86-64 architecture with at least 4GB of RAM & a minimum of 256 GB of storage. The machines will have a touch screen display, a printer, a card reader, a cash dispenser, & a microphone & speaker for voice instruction.
- Software: The ATM software will be developed using Java & will be compatible with Windows & Linux OS.
- Networks: The ATM machines will be connected to the bank's network via a wired or wireless connection.
- Environmental: The software will be designed to operate b/w 0-40 degrees celsius & humidity b/w 20-80%.

## 2.4 Design & Implementation Constraints

- Technical Constraints:
  - The ATM software must be compatible with the bank's existing systems, such as their customer database & transaction processing systems.
  - The software must be designed to work with standard networking protocols such as TCP/IP & HTTP.
  - The software must be designed to operate on a standard x86-64 architecture with at least 4 GB of RAM & a minimum of 256 GB of storage.
- Operational Constraints:
  - The ATM machines must be able to operate in a variety of environments, including indoor & outdoor locations.
  - The software must be designed to operate in temperatures b/w 0-40 °C & humidity b/w 20-80%.

## 3. System Features

### 3.1 Deposit Funds

Customers will be able to deposit

cash or checks into their account using the ATM machine. The software will validate the deposited amount & update the customer's account balance.

3.3.2. Withdraw Funds : Customers will be able to withdraw cash from their account using the ATM machine.

3.3 Check account balance: Customers will be able to check their account balance & view their transaction history using ATM machine. The software will provide an up-to-date account balance & a summary of recent transactions.

3.4 Transfer funds : Customers will be able to transfer funds between their accounts or to other accounts using the ATM machine.

3.5 Change PIN number

3.6 Print balance

3.7 Voice Instruction

3.8 Dispense Cash

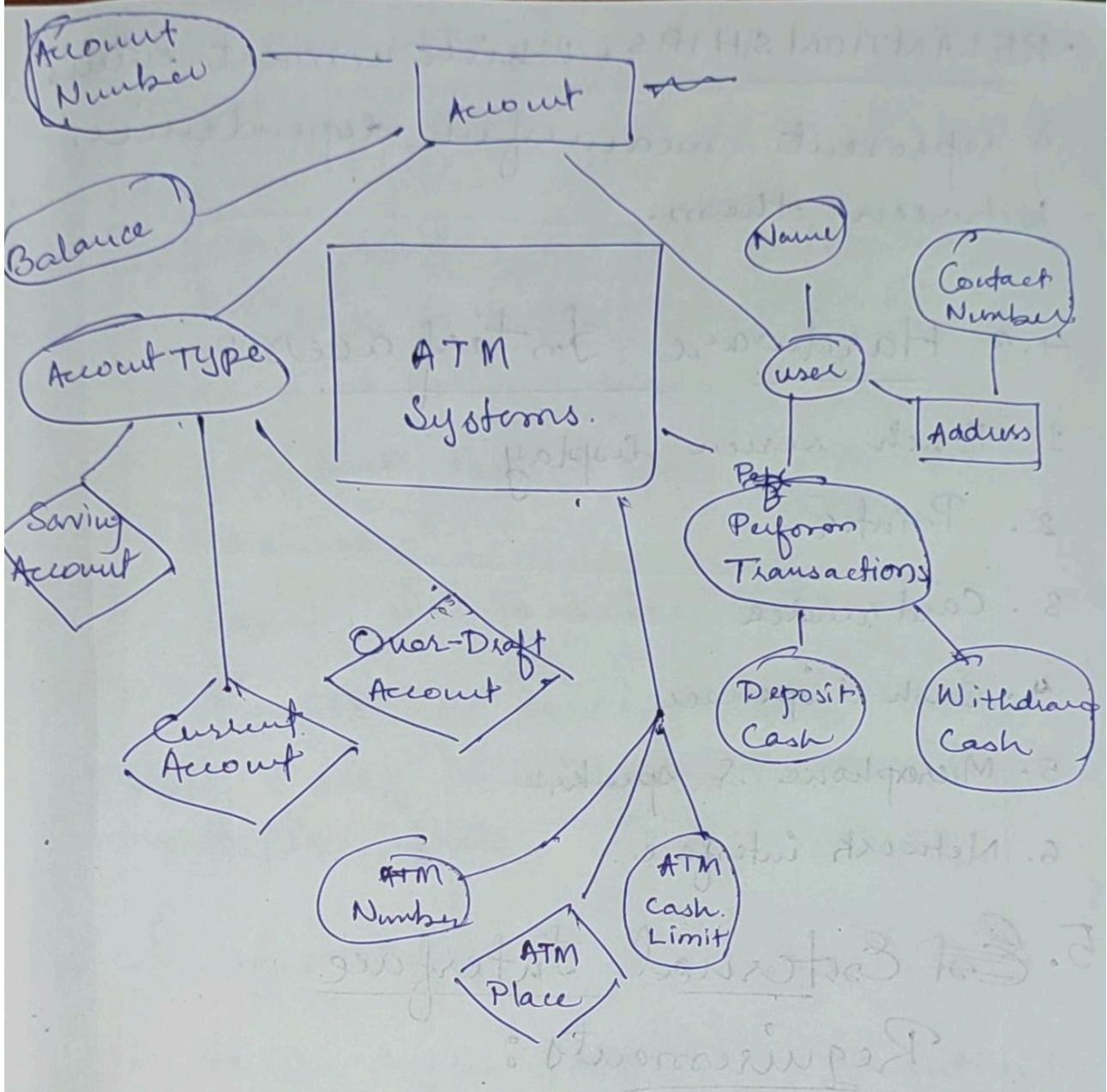
### 3.1.3 Functional Requirements :

1. The software shall allow customers to deposit cash or checks into their account using ATM machine.

2. The software shall allow customers to withdraw cash from their account using the ATM machine.
3. The software shall allow customers to check their account balance & view their transaction history using the ATM machine.
4. The software shall allow customers to transfer funds between their accounts or to other accounts using ATM machine.
5. The software shall comply with all relevant banking regulations & security standards such as Payment Card Industry Data Security Standard (PCI DSS).
6. The software shall be compliant with the accessibility laws, such as the Americans with Disabilities Act (ADA).

## 4. Data Requirements:

### 4.1 ER Diagram:



## 4.2 Data Dictionary :

The E-R Diagram constitutes of a technique for representing the logical structure of a database in a pictorial manner. This analysis is then used to organize data as a relation.

- ENTITIES : Which specify distinct real-world items in an application.
- PROPERTIES / ATTRIBUTES : Which specify properties of an entity & relationships

RELATIONSHIPS: Which connect entities & represent meaningful dependencies between them.

### 4.3 Hardware Interfaces:

1. Touch screen display
2. Printer
3. Card reader
4. Cash dispenser
5. Microphone & speaker
6. Network interface

### 5. External Interface

#### Requirements:

##### 5.1 User Interface:

Frontend software

Backend software

##### 5.2 Software Interface:

1. Customer database

2. Transaction processing system

3. Network protocols

4. Operating system

5. Accessibility system

## Q. Quality Attributes:

### a.1 Usability:

1. User-friendly interface that is easy to navigate & understand
2. Clear & concise instructions
3. Consistent look & feel across all screens
4. Visual cues to guide the user.
5. Provide an error message that is clear & easy to understand when input validation fails.

### 6.2 Security:

1. Secure login procedures to authenticate customers & prevent unauthorized access
2. Encrypt all sensitive data, such as account numbers & PINs, to protect.
3. Implement secure communication protocols, such as HTTPS & SSL

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\*\*\* SRS Ends Here \*\*\*

## Work breakdown structure.

WBS No	Task Name	WBS Description	Must start	Must end	No. of hours
1.1	Project Management	Lorem ipsum	25 Feb 2023	1 March 2023	50
1.2	Develop a project charter	Lorem ipsum	25 Feb 2023	28 March 2023	50
1.3	Create a project plan	Lorem ipsum	1 March 2023	10 March 2023	50
1.4	Identify & assign project roles	Lorem ipsum	10 August 2023	15 Aug 2023	50
2.1	Requirements Gathering & Analysis	Lorem ipsum	10 Sept 2023	1 Nov 2023	25
2.2	Conduct Stakeholder interviews	Lorem ipsum	9 Nov 2023	10 Dec 2023	36
2.3	Identify & document customer requirements	Lorem ipsum	11 Dec 2023	12 Dec 2023	25

No. of Days	Resource	Author of item
5	Website	Shaad
10	Meeting	Dwijans
12	Web	Kichith
9	Web	Shaad
8	Web	Shaad
12	Web	Shaad
20	Web	Shaad