## 🏦 ****BANK MANAGEMENT SYSTEM- Dhruvil Bhatt****

### ****Objective****

The objective of this document is to create a **Bank Management System** that will allow users to:

* View all bank accounts
* Check the details of a particular account
* Deposit money
* Withdraw money
* Transfer money between accounts
* Add new accounts

The system is designed to handle **basic banking operations** through a simple **Command Line Interface (CLI)**, with data stored in a **text file** for persistence.

### ****Designing the Main Menu****

We store the account details in a **Text File** in the following format:

ACCOUNT\_NO,NAME,BALANCE,STATUS

### ****Example:****

1001,John Doe,5000,ACTIVE

1002,Jane Smith,3000,ACTIVE

1003,Bob Brown,0,CLOSED

### ****Main Menu Options:****

1️⃣ View All Accounts  
2️⃣ Check Account Details  
3️⃣ Deposit Money  
4️⃣ Withdraw Money  
5️⃣ Transfer Money  
6️⃣ Add New Account  
7️⃣ Exit

### ****Option 1: View All Accounts****

* Read the account details from a **Excel File.**
* Store the data in a **list.**
* Print the entire list of accounts.

### ****Printout Example:****

A/C\_NO | NAME | BALANCE | STATUS

---------------------------------------

1001 | John Doe | 5000 | ACTIVE

1002 | Jane Smith | 3000 | ACTIVE

1003 | Bob Brown | 0 | CLOSED

### ****Option 2: Check Account Details****

* Input: **Account Number.**
* Search for the account in the file.
* Print detailed information of that account.

### ****Option 3: Deposit Money****

* Input:
  + Account Number
  + Deposit Amount
* Update the **balance** in the file.

### ****Option 4: Withdraw Money****

* Input:
  + Account Number
  + Withdraw Amount
* **Check balance** first:
  + If **sufficient balance,** update the file.
  + If not, display **“Insufficient Balance.”**

### ****Option 5: Transfer Money****

* Input:
  + From Account Number
  + To Account Number
  + Amount
* Perform an **Atomic Transaction:**
  + Deduct from **From Account.**
  + Add to **To Account.**

If any step fails (e.g., insufficient funds), rollback the transaction.

### ****Option 6: Add New Account****

* Input:
  + Name
  + Initial Deposit
* System:
  + **Generate unique Account Number** using random module.
  + Set **Status: ACTIVE.**
* Save the new account to the file.

### ****Exception Handling****

* **Invalid Account Number:** Shown when the account does not exist.
* **Insufficient Balance:** Shown when withdrawal/transfer exceeds available balance.
* **Input Validation:** Ensures valid numeric inputs.

### ****File Format (Example Data):****

1001,John Doe,5000,ACTIVE

1002,Jane Smith,3000,ACTIVE

1003,Bob Brown,0,CLOSED

This is just for **example only**; the actual data will be dynamically updated based on the operations performed.

✅ **In Summary:**

* 📂 **Data Storage:** Flat file (Excel File)
* 🛠️ **Operations:** Add, View, Deposit, Withdraw, Transfer
* 🛡️ **Error Handling:** Custom exceptions and validations
* 🎛️ **Interface:** Command Line (Text-based)