Day 2

1. **Banking Transaction implementation**

```
//account->account number, holder name,balance
//bank->holds account
//transaction->withdraw,deposit,transfer
//transaction check balance, account available
import java.util.*;

public class Banking {

    static class Account {
        String accno;
        String accname;
        double balance;

        public Account(String accno, String accname, double
balance) {
            this.accno = accno;
            this.accname = accname;
            this.balance = balance;
        }

        public void deposit(double amount) {
            if (amount > 0) {
                balance += amount;
                System.out.println("Deposited Rs." + amount);
                System.out.println("Current Balance: Rs." +
balance);
            } else {
                System.out.println("Deposit Failed. Amount must
be positive.");
            }
        }

        public void withdraw(double amt) {
            if (amt > 0 && balance >= amt) {
                balance -= amt;
                System.out.println("Withdrawal of Rs." + amt +
" success.");
                System.out.println("Current Balance: " +
balance);
            } else if (amt <= 0) {
                System.out.println("Enter only positive
values.");
```

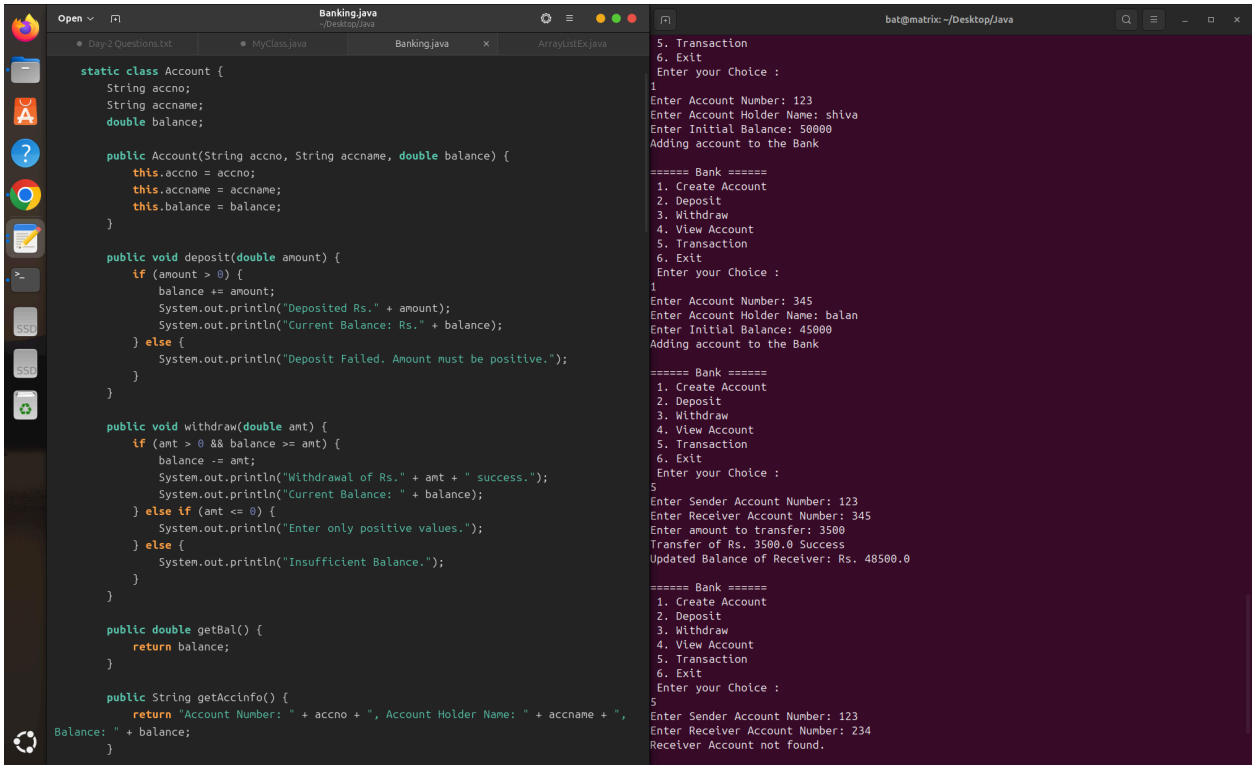
```
            } else {
                System.out.println("Insufficient Balance.");
            }
        }

        public double getBal() {
            return balance;
        }

        public String getAccinfo() {
            return "Account Number: " + accno + ", Account
Holder Name: " + accname + ", Balance: " + balance;
        }

        public String getAccno() {
            return accno;
        }
    }

    static class Bank {
        public List<Account> accounts;

        public Bank() {
            this.accounts = new ArrayList<>();
        }

        public void addAccount(Account account) {
            accounts.add(account);
            System.out.println("Account Created Successfully");
        }

        public Account findAccount(String accno) {
            for (Account account : accounts) {
                if (account.getAccno().equals(accno)) {
                    return account;
                }
            }
            return null;
        }
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        Bank bank = new Bank();
        int choice;
```

```
        do {
            System.out.println("\n====== Bank ====== \n 1.
Create Account \n 2. Deposit \n 3. Withdraw \n 4. View Account
\n 5. Exit \n Enter your Choice : ");
            choice = sc.nextInt();
            sc.nextLine();

            switch (choice) {
                case 1:
                    System.out.print("Enter Account Number: ");
                    String accNo = sc.nextLine();
                    System.out.print("Enter Account Holder
Name: ");
                    String accName = sc.nextLine();
                    System.out.print("Enter Initial Balance:
");
                    double initBal = sc.nextDouble();
                    sc.nextLine();
                    Account acc = new Account(accNo, accName,
initBal);
                    bank.addAccount(acc);
                    break;

                case 2:
                    System.out.print("Enter Account Number: ");
                    String depAccNo = sc.nextLine();
                    Account depAcc =
bank.findAccount(depAccNo);
                    if (depAcc != null) {
                        System.out.print("Enter amount to
deposit: ");
                        double amount = sc.nextDouble();
                        sc.nextLine();
                        depAcc.deposit(amount);
                    } else {
                        System.out.println("Account not
found.");
                    }
                    break;

                case 3:
                    System.out.print("Enter Account Number: ");
                    String withAccNo = sc.nextLine();
```

```
                    Account withdrawAcc =
bank.findAccount(withAccNo);
                    if (withdrawAcc != null) {
                        System.out.print("Enter amount to
withdraw: ");
                        double amt = sc.nextDouble();
                        sc.nextLine();
                        withdrawAcc.withdraw(amt);
                    } else {
                        System.out.println("Account not
found.");
                    }
                    break;

                case 4:
                    System.out.print("Enter Account Number: ");
                    String infoAccNo = sc.nextLine();
                    Account infoAcc =
bank.findAccount(infoAccNo);
                    if (infoAcc != null) {
                        System.out.println("Account Found!");

System.out.println(infoAcc.getAccinfo());
                    } else {
                        System.out.println("Account not
found.");
                    }
                    break;

                case 5:
                    System.out.println("*** Thanking you!
***");
                    break;

                default:
                    System.out.println("Enter a valid option
only ...");
            }

        } while (choice != 5);

        sc.close();
    }
}
```

```
Output:
====== Bank ======
 1. Create Account
 2. Deposit
 3. Withdraw
 4. View Account
 5. Transaction
 6. Exit
 Enter your Choice :
1
Enter Account Number: 123
Enter Account Holder Name: shiva
Enter Initial Balance: 50000
Adding account to the Bank

====== Bank ======
 1. Create Account
 2. Deposit
 3. Withdraw
 4. View Account
 5. Transaction
 6. Exit
 Enter your Choice :
1
Enter Account Number: 345
Enter Account Holder Name: balan
Enter Initial Balance: 45000
Adding account to the Bank

====== Bank ======
 1. Create Account
 2. Deposit
 3. Withdraw
 4. View Account
 5. Transaction
 6. Exit
 Enter your Choice :
5
Enter Sender Account Number: 123
Enter Receiver Account Number: 345
Enter amount to transfer: 3500
Transfer of Rs. 3500.0 Success
Updated Balance of Receiver: Rs. 48500.0

====== Bank ======
```

```
 1. Create Account
 2. Deposit
 3. Withdraw
 4. View Account
 5. Transaction
 6. Exit
 Enter your Choice :
5
Enter Sender Account Number: 123
Enter Receiver Account Number: 234
Receiver Account not found.
```



2. Library Management:

```
//library management

//lib-> isbn, book name, author
//transaction -> borrow, return
//borrow check for availability



import java.util.*;
```

```
public class Library {
    static class Book {
        public String isbn;
        public String booktitle;
        public String author;
        public boolean isBorrowed;

        public Book(String isbn, String booktitle, String
author) {
            this.isbn = isbn;
            this.booktitle = booktitle;
            this.author = author;
            this.isBorrowed = false;
        }

        public String getDetails() {
            return "Book Title: " + booktitle + " | Author: " +
author + " | ISBN: " + isbn + " | Status: " + (isBorrowed ?
"Borrowed" : "Available");
        }
    }

    static ArrayList<Book> books = new ArrayList<>();


    public static void addBook(String isbn, String title,
String author) {
        books.add(new Book(isbn, title, author));
        System.out.println("Book added successfully.");
    }


    public static void findBook(String isbn) {
        for (Book book : books) {
            if (book.isbn.equals(isbn)) {
                System.out.println(book.getDetails());
                return;
            }
        }
        System.out.println("Book not found.");
    }


    public static void borrowBook(String isbn) {
```

```
        for (Book book : books) {
            if (book.isbn.equals(isbn)) {
                if (!book.isBorrowed) {
                    book.isBorrowed = true;
                    System.out.println("Book borrowed: " +
book.booktitle);
                } else {
                    System.out.println("Book is already
borrowed.");
                }
                return;
            }
        }
        System.out.println("Book not found.");
    }


    public static void returnBook(String isbn) {
        for (Book book : books) {
            if (book.isbn.equals(isbn)) {
                if (book.isBorrowed) {
                    book.isBorrowed = false;
                    System.out.println("Book returned: " +
book.booktitle);
                } else {
                    System.out.println("Book was not
borrowed.");
                }
                return;
            }
        }
        System.out.println("Book not found.");
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int choice;

        do {
            System.out.println("\n===== Library Management
System ===== \n 1.Add Book \n2.Find Book \n3.Borrow Book
\n4.Return Book \n5.Display All Books\n6.Exit\nEnter Your
Choice : ");
            choice = sc.nextInt();
            sc.nextLine();
```

```
            switch (choice) {
                case 1:
                    System.out.print("Enter ISBN number: ");
                    String isbn = sc.nextLine();
                    System.out.print("Enter Book Title: ");
                    String booktitle = sc.nextLine();
                    System.out.print("Enter Book Author Name:
");
                    String author = sc.nextLine();
                    addBook(isbn, booktitle, author);
                    break;

                case 2:
                    System.out.print("Enter ISBN to find book:
");
                    String findisbn = sc.nextLine();
                    findBook(findisbn);
                    break;

                case 3:
                    System.out.print("Enter ISBN to borrow: ");
                    String borrowisbn = sc.nextLine();
                    borrowBook(borrowisbn);
                    break;

                case 4:
                    System.out.print("Enter ISBN to return: ");
                    String returnisbn = sc.nextLine();
                    returnBook(returnisbn);
                    break;

                case 5:
                    System.out.println("\nList of all books:");
                    for (Book b : books) {
                        System.out.println(b.getDetails());
                    }
                    break;

                case 6:
                    System.out.println("***Thanking You***");
                    break;

                default:
```

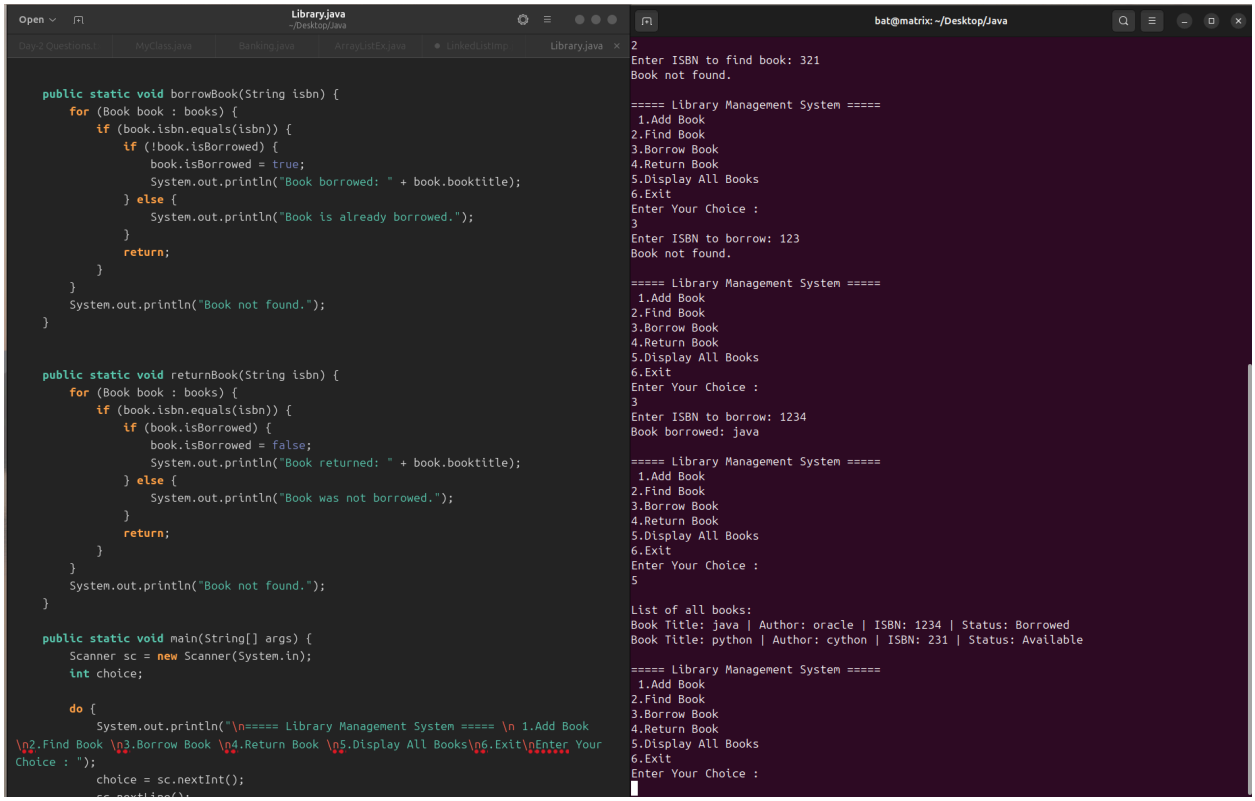
```
                    System.out.println("Enter Only Valid
Options...");
                }
            } while (choice != 6);

            sc.close();
        }
}
```

Output:

```
===== Library Management System =====
 1.Add Book
2.Find Book
3.Borrow Book
4.Return Book
5.Display All Books
6.Exit
Enter Your Choice :
1
Enter ISBN number: 1234
Enter Book Title: java
Enter Book Author Name: oracle
Book added successfully.

===== Library Management System =====
 1.Add Book
2.Find Book
3.Borrow Book
4.Return Book
5.Display All Books
6.Exit
Enter Your Choice :
1
Enter ISBN number: 231
Enter Book Title: python
Enter Book Author Name: cython
Book added successfully.

===== Library Management System =====
 1.Add Book
2.Find Book
3.Borrow Book
4.Return Book
5.Display All Books
```

```
6.Exit
Enter Your Choice :
2
Enter ISBN to find book: 321
Book not found.

===== Library Management System =====
 1.Add Book
2.Find Book
3.Borrow Book
4.Return Book
5.Display All Books
6.Exit
Enter Your Choice :
3
Enter ISBN to borrow: 123
Book not found.

===== Library Management System =====
 1.Add Book
2.Find Book
3.Borrow Book
4.Return Book
5.Display All Books
6.Exit
Enter Your Choice :
3
Enter ISBN to borrow: 1234
Book borrowed: java

===== Library Management System =====
 1.Add Book
2.Find Book
3.Borrow Book
4.Return Book
5.Display All Books
6.Exit
Enter Your Choice :
5

List of all books:
Book Title: java | Author: oracle | ISBN: 1234 | Status:
Borrowed
Book Title: python | Author: cython | ISBN: 231 | Status:
Available
```

```
===== Library Management System =====
 1.Add Book
2.Find Book
3.Borrow Book
4.Return Book
5.Display All Books
6.Exit
Enter Your Choice :
6
***Thanking You***
```



```java
    public static void borrowBook(String isbn) {
        for (Book book : books) {
            if (book.isbn.equals(isbn)) {
                if (!book.isBorrowed) {
                    book.isBorrowed = true;
                    System.out.println("Book borrowed: " + book.booktitle);
                } else {
                    System.out.println("Book is already borrowed.");
                }
                return;
            }
        }
        System.out.println("Book not found.");
    }


    public static void returnBook(String isbn) {
        for (Book book : books) {
            if (book.isbn.equals(isbn)) {
                if (book.isBorrowed) {
                    book.isBorrowed = false;
                    System.out.println("Book returned: " + book.booktitle);
                } else {
                    System.out.println("Book was not borrowed.");
                }
                return;
            }
        }
        System.out.println("Book not found.");
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int choice;

        do {
            System.out.println("\n===== Library Management System ===== \n 1.Add Book
\n2.Find Book \n3.Borrow Book \n4.Return Book \n5.Display All Books\n6.Exit\nEnter Your
Choice : ");
            choice = sc.nextInt();
```

```
2
Enter ISBN to find book: 321
Book not found.

===== Library Management System =====
 1.Add Book
2.Find Book
3.Borrow Book
4.Return Book
5.Display All Books
6.Exit
Enter Your Choice :
3
Enter ISBN to borrow: 123
Book not found.

===== Library Management System =====
 1.Add Book
2.Find Book
3.Borrow Book
4.Return Book
5.Display All Books
6.Exit
Enter Your Choice :
3
Enter ISBN to borrow: 1234
Book borrowed: java

===== Library Management System =====
 1.Add Book
2.Find Book
3.Borrow Book
4.Return Book
5.Display All Books
6.Exit
Enter Your Choice :
5

List of all books:
Book Title: java | Author: oracle | ISBN: 1234 | Status: Borrowed
Book Title: python | Author: cython | ISBN: 231 | Status: Available

===== Library Management System =====
 1.Add Book
2.Find Book
3.Borrow Book
4.Return Book
5.Display All Books
6.Exit
Enter Your Choice :
```