ASSIGNMENT-6.4

2303A51595
B-10

TASK – 1

Prompt :

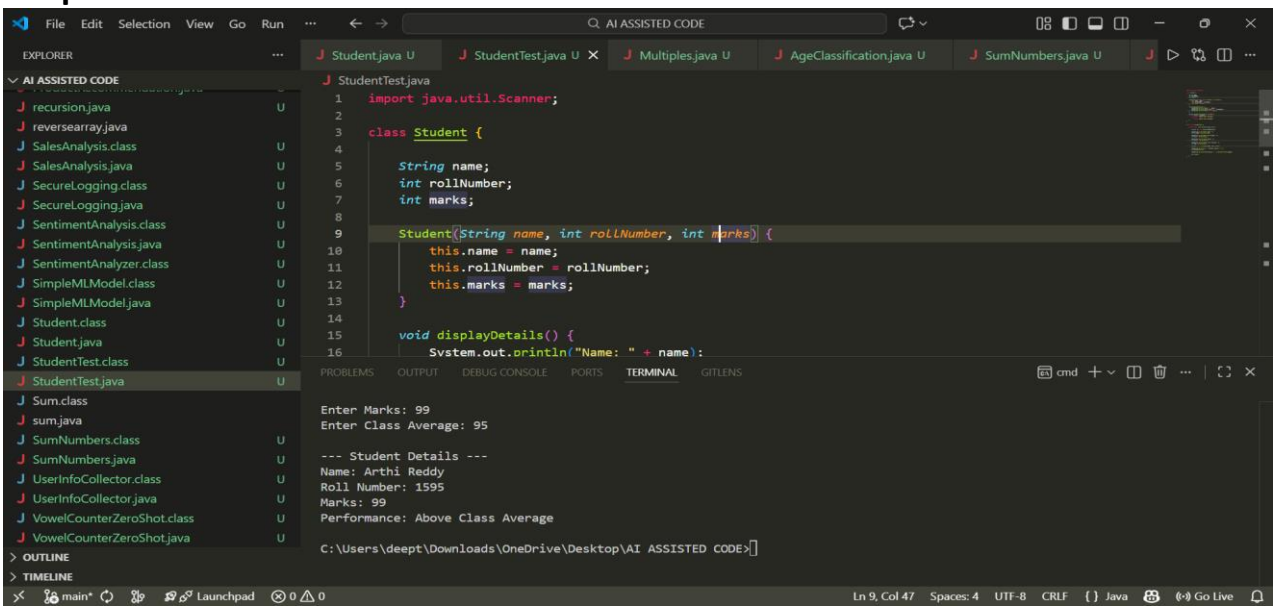
Write a Java program to accept day-wise product sales using Scanner and calculate daily totals and overall monthly sales.
Display a summary report and allow the user to repeat the process for another month using loops.

Code :

```
import java.util.Scanner;

class Student {
   String name;
   int rollNumber;
   int marks;
   Student(String name, int rollNumber, int marks) {
      this.name = name;
      this.rollNumber = rollNumber;
      this.marks = marks;
   }

   void displayDetails() {
      System.out.println("Name: " + name);
      System.out.println("Roll Number: " + rollNumber);
      System.out.println("Marks: " + marks);
   }

   String checkPerformance(int average) {
      if (marks > average)
         return "Above Class Average";
      else
         return "Below Class Average";
   }
}
public class StudentTest {
```

```
    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter Name: ");
        String name = sc.nextLine();

        System.out.print("Enter Roll Number: ");
        int roll = sc.nextInt();

        System.out.print("Enter Marks: ");
        int marks = sc.nextInt();

        System.out.print("Enter Class Average: ");
        int avg = sc.nextInt();

        Student s = new Student(name, roll, marks);

        System.out.println("\n--- Student Details ---");
        s.displayDetails();

        System.out.println("Performance: " + s.checkPerformance(avg));

        sc.close();
    }
```

Output :



Analysis :
This program takes product sales details for each day and calculates daily and monthly totals using loops.
It shows the final sales summary and allows the user to repeat the process for the next month.

TASK-2

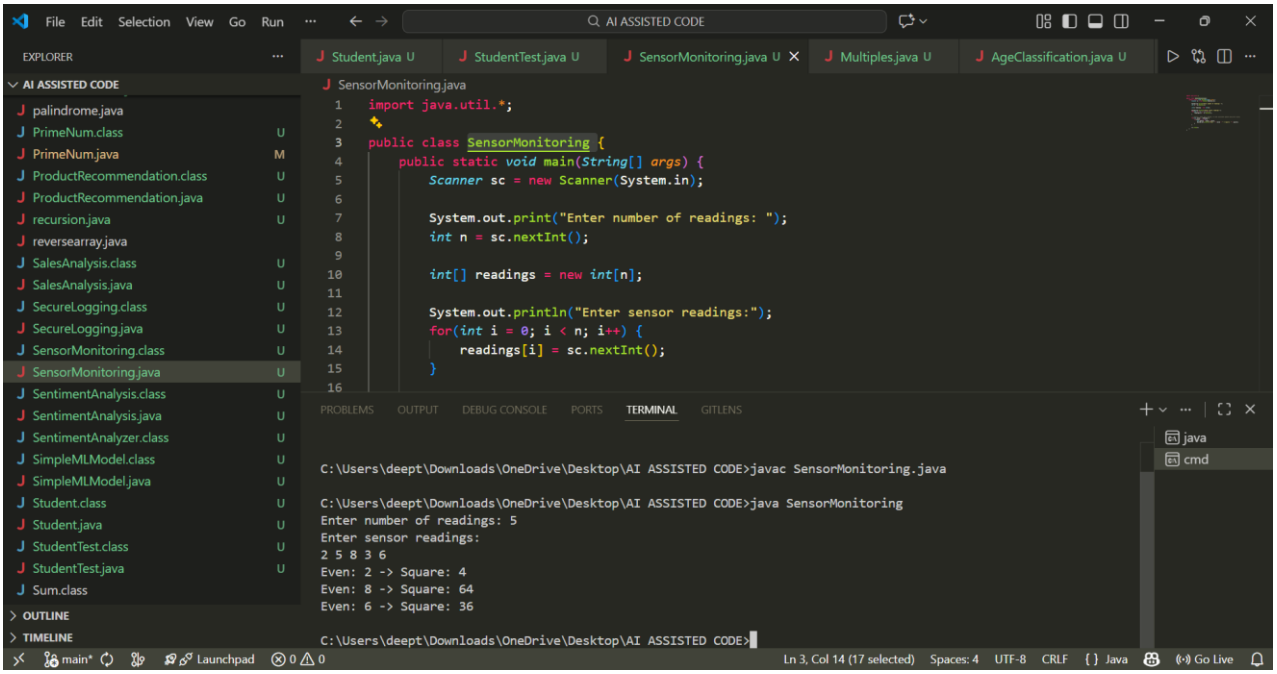
Prompt :

Write a Java program to loop through sensor readings, identify even numbers, calculate their square, and print the result clearly.

Code :

```
import java.util.*;

public class SensorMonitoring {

   public static void main(String[] args) {

      Scanner sc = new Scanner(System.in);

      System.out.print("Enter number of readings: ");

      int n = sc.nextInt();

      int[] readings = new int[n];

      System.out.println("Enter sensor readings:");

      for(int i = 0; i < n; i++) {

         readings[i] = sc.nextInt;

      // Copilot: check each reading, if even calculate square and print nicely

      for(int value : readings) {

         ifvalue % 2 == 0) {

            int square = value * value;

         System.out.println("Even: " + value + " -> Square: " + square)

      sc.close();

   }

}
```

Output :



Analysis :

The loop checks each reading using % 2 == 0 to find even numbers. If even, it calculates the square and prints the result clearly.

TASK-3

Prompt :

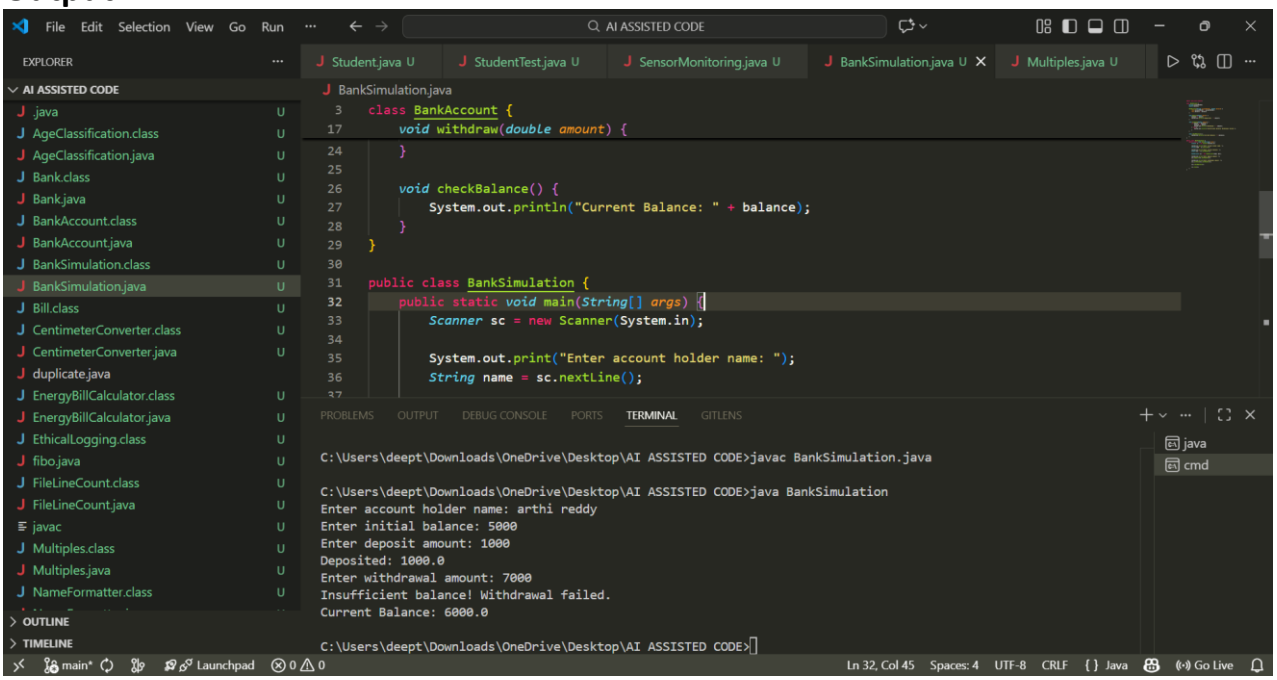
Write a Java class BankAccount with accountHolder and balance. Add methods for deposit, withdraw (with insufficient balance check), and display balance using if-else conditions.

Code :

```
import java.util.Scanner;
class BankAccount {
   String accountHolder;
   double balance;
   BankAccount(String accountHolder, double balance) {
      this.accountHolder = accountHolder;
      this.balance = balance;
   }
   void deposit(double amount) {
      balance += amount;
```

```
        System.out.println("Deposited: " + amount);
    }
    void withdraw(double amount) {
        if (amount <= balance) {
            balance -= amount;
            System.out.println("Withdrawn: " + amount);
        } else {
            System.out.println("Insufficient balance! Withdrawal failed.");
}
public class BankSimulation {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter account holder name: ");
        String name = sc.nextLine();
        System.out.print("Enter initial balance: ");
       duble bal = sc.nextDouble();
        BankAccount acc = new BankAccount(name, bal);
        System.out.print("Enter deposit amount: ");
        acc.deposit(sc.nextDouble());
        System.out.print("Enter withdrawal amount: ");
        acc.withdraw(sc.nextDouble());
        acc.checkBalance();
        sc.close();
    }
}
```

Output :



Analysis :
The class stores account details and updates balance using deposit and withdraw methods. If withdrawal is more than balance, an if-else check prevents it and shows a friendly message.

Task-4

Prompt :

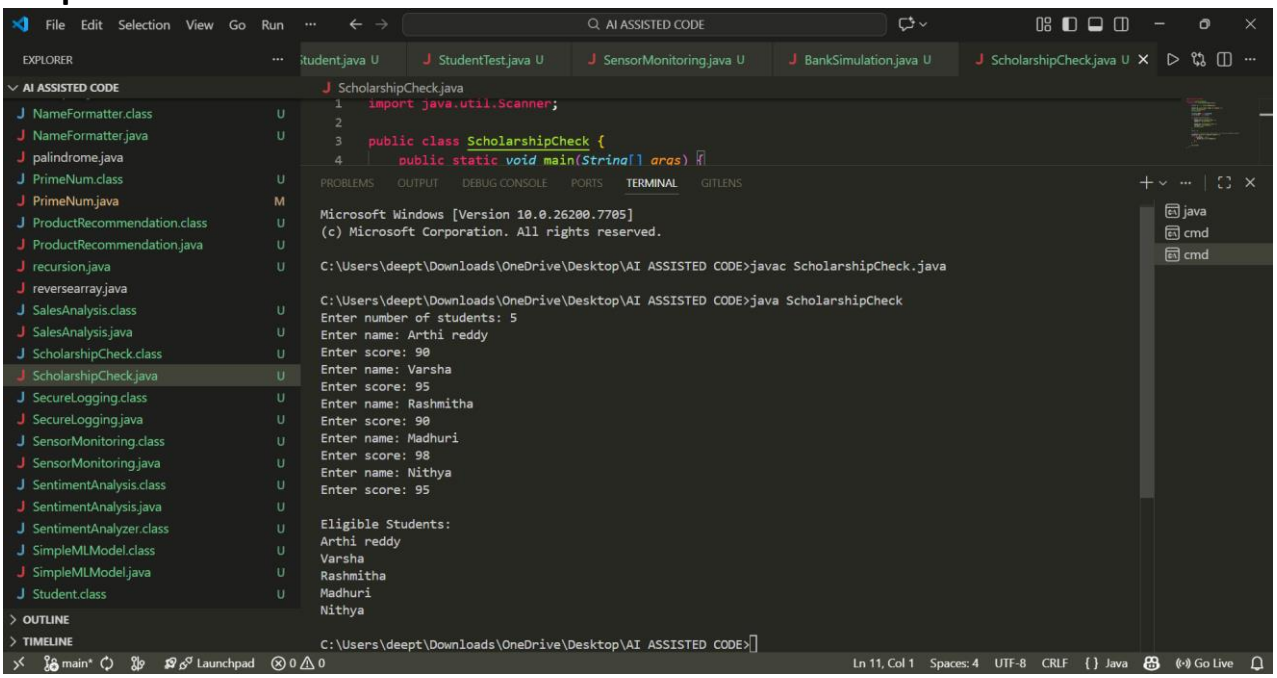
Write a Java program that stores student names and scores, use a while loop to check each student, and print names of students scoring more than 75.

Code :

```
import java.util.Scanner;

public class ScholarshipCheck {
   public static void main(String[] args) {

      Scanner sc = new Scanner(System.in);

      System.out.print("Enter number of students: ");
      int n = sc.nextInt();
      sc.nextLine();

      String[] names = new String[n];
      int[] scores = new int[n];

      // initialize student data
      for (int i = 0; i < n; i++) {
         System.out.print("Enter name: ");
         names[i] = sc.nextLine();

         System.out.print("Enter score: ");
         scores[i] = sc.nextInt();
         sc.nextLine();
      }

      int i = 0;
      System.out.println("\nEligible Students:");
      while (i < n) {
```

```
            if (scores[i] > 75) {
                System.out.println(names[i]);
            }
            i++;
        }
        sc.close();
    }
}
```

Output :



Analysis :

The while loop checks each student one by one using an index.
If score is greater than 75, the student name is printed as eligible.

TASK-5

Prompt :

Write a Java class ShoppingCart with an item list. Add methods to add items, remove items, calculate total bill using loops, and apply discount if total exceeds a limit.

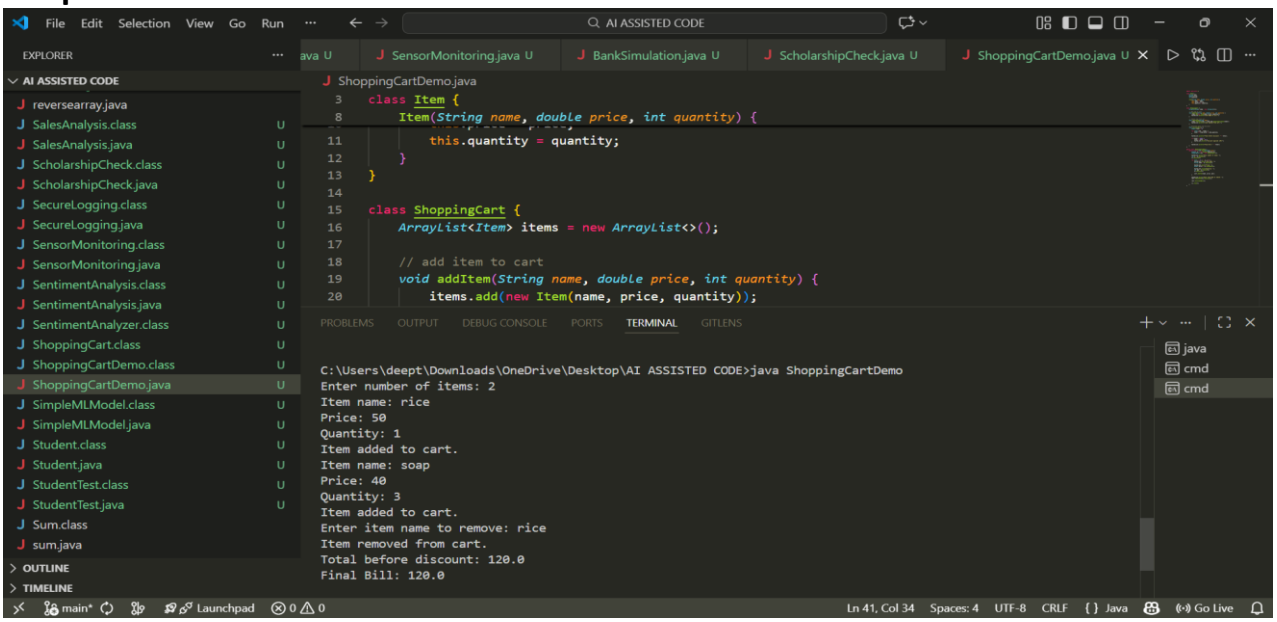
Code :

```
import java.util.*;
class Item {
    String name;
    double price;
```

```
    int quantity;

    Item(String name, double price, int quantity) {
        this.name = name;
        this.price = price;
        this.quantity = quantity;
    }
}
class ShoppingCart {
    ArrayList<Item> items = new ArrayList<>();

    // add item to cart
    void addItem(String name, double price, int quantity) {
        items.add(new Item(name, price, quantity));
        System.out.println("Item added to cart.");
    }
    // remove item from cart
    void removeItem(String name) {
        items.removeIf(item -> item.name.equalsIgnoreCase(name));
        System.out.println("Item removed from cart.");
    }
    // calculate total with discount
    void calculateBill() {
        double total = 0;

        for (Item item : items) {
            total += item.price * item.quantity;
        }

        System.out.println("Total before discount: " + total);

        if (total > 1000) {
            total = total * 0.9; // 10% discount
            System.out.println("Discount applied (10%)");
        }
        System.out.println("Final Bill: " + total);
    }
}
public class ShoppingCartDemo {
    public static void main(String[] args) {
```

```
        Scanner sc = new Scanner(System.in);
        ShoppingCart cart = new ShoppingCart();
        System.out.print("Enter number of items: ");
        int n = sc.nextInt();
        sc.nextLine();

        for (int i = 0; i < n; i++) {
            System.out.print("Item name: ");
            String name = sc.nextLine();

            System.out.print("Price: ");
            double price = sc.nextDouble();

            cart.addItem(name, price, qty);
        }

        System.out.print("Enter item name to remove: ");
        cart.removeItem(sc.nextLine());
        cart.calculateBill();
        sc.close();
    }
}
```

Output :



Analysis :

Items are stored in an ArrayList and processed using loops to calculate the total.
If the bill exceeds the limit, an if-condition applies a discount automatically.