

Question 1

Write a program to display a menu with an option add, subtract, multiply and division by implementing classes. Do the appropriate action on selection. Use separate method for calculation.

```
import java.util.Scanner;

class Calculator {
    int x, y;
    void getData(int a, int b) {
        x = a;
        y = b;
    }

    int sum() {
        return (x + y);
    }

    int difference() {
        return (x - y);
    }

    int product() {
        return (x * y);
    }

    int quotient() {
        return (x / y);
    }
}

public class CalcTwo0 {
    public static void main(String args[]) {
        int n1, n2, ch;
        Scanner ob = new Scanner(System.in);

        Calculator c = new Calculator();

        try {
            System.out.print("Enter the first number: ");
            n1 = ob.nextInt();
            System.out.print("Enter the second number: ");
            n2 = ob.nextInt();

            c.getData(n1, n2);

            do {
                System.out.println("Menu For Operation\n1. Add\n2. Subtract\n3. Multiply\n4. Divide\n5. Exit\nEnter your choice: ");
                ch = ob.nextInt();

                switch (ch) {
                    case 1: System.out.println("The sum is: " + c.sum());
                        break;

                    case 2: System.out.println("The difference is: " + c.difference());
                        break;

                    case 3: System.out.println("The product is: " + c.product());
                        break;

                    case 4: System.out.println("The quotient is: " + c.quotient());
                        break;

                    case 5: System.exit(0);
                }
            } while (ch != 5);
        } catch (Exception e) {
            System.out.println("Invalid input");
        }
    }
}
```

```

        default: System.out.println("Invalid Choice.");
    }
    } while (ch <= 5);
} catch (Exception e) {}
}
}

```

OR {There is only slight difference between the code below and the code above}

```

import java.util.*;

class CalcOperations {
    private int n1, n2;

    CalcOperations(int a, int b) {
        n1 = a;
        n2 = b;
    }

    public int sum() {
        return (n1 + n2);
    }

    public int difference() {
        return (n1 - n2);
    }

    public int product() {
        return (n1 * n2);
    }

    public int quotient() {
        return (n1 / n2);
    }
}

public class Calculator {
    public static void main(String args[]) {
        Scanner ob = new Scanner(System.in);
        int a, b, ch;

        System.out.print("Enter first number: ");
        a = ob.nextInt();

        System.out.print("Enter second number: ");
        b = ob.nextInt();

        CalcOperations co = new CalcOperations(a, b);

        try {
            while (true) {
                System.out.println("Menu Operation:\n1. Add\n2. Subtract\n3. Multiply\n4. Divide\n5. Exit\nEnter your choice: ");
                ch = ob.nextInt();

                switch (ch) {
                    case 1: System.out.println("The sum = " + co.sum());
                        break;

                    case 2: System.out.println("The difference = " + co.difference());
                        break;

                    case 3: System.out.println("The product = " + co.product());
                        break;

                    case 4: System.out.println("The quotient = " + co.quotient());
                        break;

                    case 5: System.exit(0);
                }
            }
        }
    }
}

```

```

        default: System.out.println("Invalid choice. Try again");
    }
}
} catch (Exception e) {}

ob.close();
}
}

```

Output:

```

Enter first number: 55
Enter second number: 2
Menu Operation:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter your choice:
1
The sum = 57
Menu Operation:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter your choice:
2
The difference = 53
Menu Operation:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter your choice:
3
The product = 110
Menu Operation:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter your choice:
4
The quotient = 27
Menu Operation:
1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit
Enter your choice:
5

```