

# Assignment – 3

## Practice Questions : 1

Q1) WAP to create basic calculator functions and call them

CODE :

```
Calculator.java × mainCalc.java
1  package Practice2;
2  import java.util.Scanner;
3
4  public class Calculator { 2 usages ▲ RevanMidha005
5  >   int add(int a, int b) { return a + b; }
8  >   int subtract(int a, int b) { return a - b; }
11 >   int multiply(int a, int b) { return a * b; }
14 >   int divide(int a, int b) { return a / b; }
17
18   void Calc(int a, int b) { 1 usage ▲ RevanMidha005
19       Scanner scn = new Scanner(System.in);
20
21       while (true) {
22           System.out.println("Enter your choice[1-5]: ");
23           System.out.println("1. Addition");
24           System.out.println("2. Subtraction");
25           System.out.println("3. Multiplication");
26           System.out.println("4. Division");
27           System.out.println("5. Exit");
28
29           int choice = scn.nextInt();
30           System.out.println();
31
32           if (choice == 1) {
33               System.out.println("Sum of numbers is: " + add(a, b));
34           }
35           else if (choice == 2) {
36               System.out.println("Subtraction of numbers is: " + subtract(a, b));
37           }
38           else if (choice == 3) {
39               System.out.println("Multiplication of numbers is: " + multiply(a, b));
40           }
41           else if (choice == 4) {
42               System.out.println("Division of numbers is: " + divide(a, b));
43           }
44           else if (choice == 5) {
45               System.out.println("Thanks for using my program!");
46               return;
47           }
48           else {
49               System.out.println("Invalid choice");
50           }
51           System.out.println();
52       }
53   }
54 }
55
56
```

Calculator.java

mainCalc.java ×

```
1 package Practice2;
2 import java.util.Scanner;
3
4 ▶ public class mainCalc {  ⚡ RevanMidha005
5 ▶     public static void main(String[] args) {  ⚡ RevanMidha005
6         Calculator obj = new Calculator();
7         Scanner scn = new Scanner(System.in);
8
9         System.out.println("Enter the first number: ");
10        int a = scn.nextInt();
11        System.out.println("Enter the second number: ");
12        ⚡ int b = scn.nextInt();
13        System.out.println();
14
15        obj.Calc(a, b);
16    }
17 }
18
```

## OUTPUT :

```
Enter the first number:
20
Enter the second number:
10

Enter your choice[1-5]:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
1

Sum of numbers is: 30

Enter your choice[1-5]:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
2

Subtraction of numbers is: 10

Enter your choice[1-5]:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
3

Multiplication of numbers is: 200
```

```
Enter your choice[1-5]:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
4

Division of numbers is: 2

Enter your choice[1-5]:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
5

Thanks for using my program!
```

**HANDWRITTEN :**

Ans) Calculator.java

```
package handler2;  
import java.util.Scanner;
```

```
public class Calculator {  
    int add(int a, int b) {  
        return a+b;
```

```
    }
```

```
    int subtract(int a, int b) {  
        return a-b;
```

```
    }
```

```
    int multiply(int a, int b) {  
        return a*b;
```

```
    }
```

```
    int divide(int a, int b) {  
        return a/b;
```

```
    }
```

```
void calc(int a, int b) {
```

```
    Scanner sc = new Scanner(System.in);
```

```

while (true) {
    System.out.println("Enter your choice [1-5]: ");
    System.out.println("1. Addition");
    System.out.println("2. Subtraction");
    System.out.println("3. Multiplication");
    System.out.println("4. Division");
    System.out.println("5. Exit");

    int choice = sc.nextInt();
    System.out.println();

    if (choice == 1) {
        System.out.println("Sum: " + add(a,b));
    }
    else if (choice == 2) {
        System.out.println("Sub: " + subtract(a,b));
    }
    else if (choice == 3) {
        System.out.println("Mult: " + multiply(a,b));
    }
    else if (choice == 5) {
        System.out.println("Thanks for using the calculator");
        return;
    }
    else {
        System.out.println("Invalid choice");
    }
    System.out.println();
}
}

```

mainCalc.java

package Practice2;  
import java.util.Scanner;

public class mainCalc {  
 public static void main (String[] args) {  
 Calculator obj = new Scanner(System.in);

System.out.println("Enter the first no: ");

int a = obj.nextInt();

System.out.println("Enter the second no: ");

int b = obj.nextInt();

System.out.println();

obj.calc(a,b);

}

}

Q2) WAP to accept two numbers from user and print sum of them.

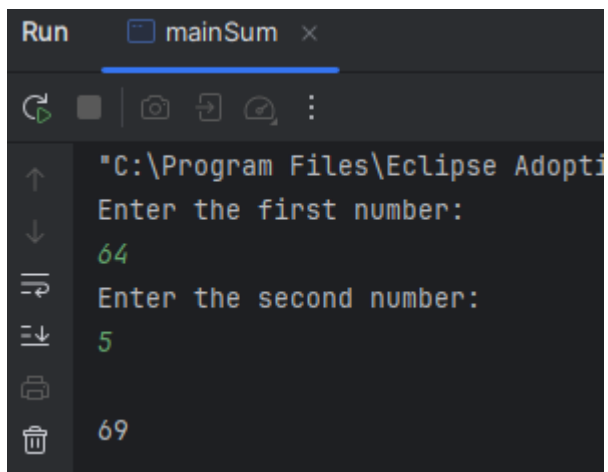
CODE :

```
Sum.java x mainSum.java
1 package Practice2;
2
3 public class Sum { 2 usages 1 RevanMidha005
4     void sum(int a, int b) { 1 usage 1 RevanMidha005
5         System.out.println(a + b);
6     }
7 }
8
```

```
Sum.java mainSum.java x
1 package Practice2;
2 import java.util.Scanner;
3
4 public class mainSum {
5     public static void main(String[] args) {
6         Scanner scn = new Scanner(System.in);
7
8         System.out.println("Enter the first number: ");
9         int a = scn.nextInt();
10        System.out.println("Enter the second number: ");
11        int b = scn.nextInt();
12        System.out.println();
13
14        Sum obj3 = new Sum();
15        obj3.sum(a, b);
16    }
17 }
18
```



## OUTPUT :



The screenshot shows the 'Run' console window in an Eclipse IDE. The window title is 'Run' with a sub-tab 'mainSum'. The console output is as follows:

```
"C:\Program Files\Eclipse Adopti
Enter the first number:
64
Enter the second number:
5
69
```

The numbers 64 and 5 are entered in green, indicating user input. The final output is 69.



HANDWRITTEN :

Ans) Sum.java

```
package Practice2;
```

```
public class Sum {  
    void Sum (int a, int b) {  
        System.out.println(a + b);  
    }  
}
```

mainSum.java

```
package Practice2;  
import java.util.Scanner;
```

```
public class mainSum {  
    public static void main (String[] args) {  
        Scanner sc = new Scanner(System.in);
```

```
        System.out.println("Enter the first number: ");  
        int a = sc.nextInt();  
        System.out.println("Enter the second number: ");  
        int b = sc.nextInt();  
        System.out.println();
```

```
        Sum obj = new Sum();  
        obj.sum(a, b);  
    }  
}
```

Spiral

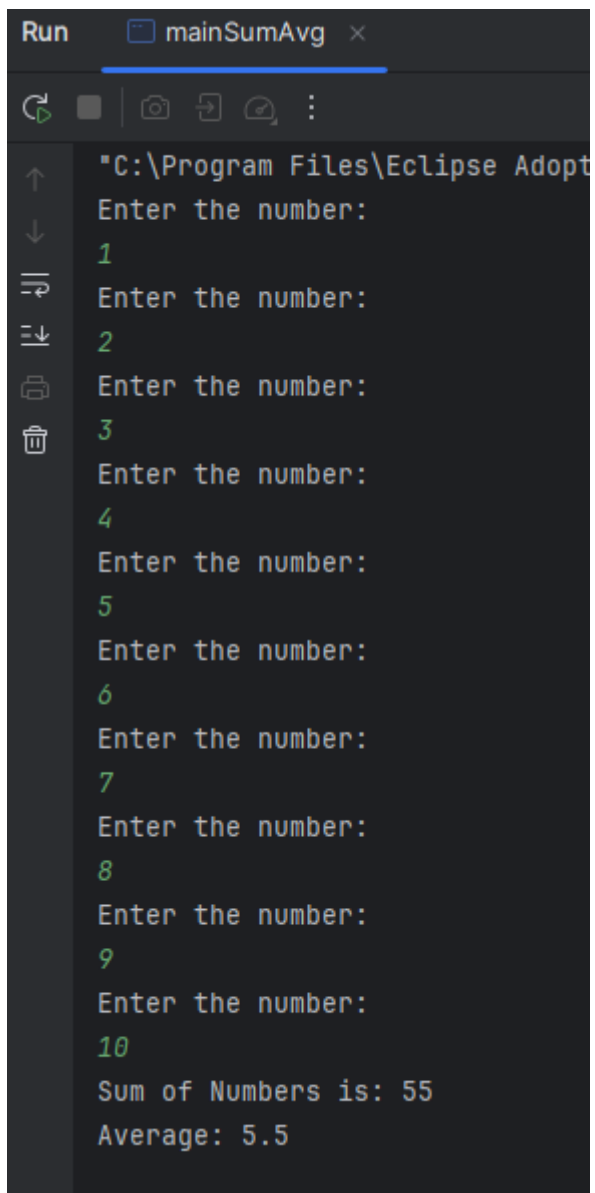
Q3) WAP to accept 10 numbers from user and print sum and average of it.

**CODE :**

```
SumAvg.java × mainSumAvg.java
1 package Practice2;
2
3 public class SumAvg { 2 usages ↑ RevanMidha005
4 @ void sumAvg(int []arr) { 1 usage ↑ RevanMidha005
5     int sum = 0;
6     for (int i : arr){
7         sum += i;
8     }
9     System.out.println("Sum of Numbers is: " + sum);
10    System.out.println("Average: " + (double)sum / (double)arr.length);
11 }
12 }
13
```

```
SumAvg.java mainSumAvg.java ×
1 package Practice2;
2 import java.util.Scanner;
3
4 ▶ public class mainSumAvg { ↑ RevanMidha005
5 ▶     public static void main(String[] args) { ↑ RevanMidha005
6         Scanner scn = new Scanner(System.in);
7         SumAvg obj = new SumAvg();
8         int []arr = new int[10];
9
10        for (int i = 0; i < 10; i++) {
11            System.out.println("Enter the number: ");
12            int n = scn.nextInt();
13            arr[i] = n;
14        }
15        obj.sumAvg(arr);
16    }
17 }
```

## OUTPUT :



The screenshot shows the 'Run' console window of an Eclipse IDE. The window title is 'Run' with a sub-tab 'mainSumAvg'. The console output shows the program prompting the user to 'Enter the number:' ten times, with inputs 1 through 10. The final output is 'Sum of Numbers is: 55' and 'Average: 5.5'. The left sidebar contains icons for navigation and development tools.

```
"C:\Program Files\Eclipse Adopt
Enter the number:
1
Enter the number:
2
Enter the number:
3
Enter the number:
4
Enter the number:
5
Enter the number:
6
Enter the number:
7
Enter the number:
8
Enter the number:
9
Enter the number:
10
Sum of Numbers is: 55
Average: 5.5
```

## HANDWRITTEN :

Ans) SumAvg.java

```
package Practice2;
```

```
public class SumAvg {
```

```
    void SumAvg (int [] arr) {
```

```
        int sum = 0;
```

```
        for (int i: arr) {
```

```
            sum += i;
```

```
        }
```

```
        System.out.println("Sum of no. " + sum);
```

```
        System.out.println("Avg: " + (double) sum / (double) arr.length);
```

```
    }
```

```
}
```

mainSumAvg.java

```
package Practice2;
```

```
import java.util.Scanner;
```

```
public class mainSumAvg {
```

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

```
        Scanner sc = new Scanner (System.in);
```

```
        SumAvg obj = new SumAvg();
```

```
        int [] arr = new int [10];
```

```
        for (int i = 0; i < 10; i++) {
```

```
            System.out.println("Enter the no: ");
```

```
            int n = sc.nextInt();
```

```
            arr[i] = n;
```

```
        }
```

```
        obj.SumAvg(arr);
```

```
}
```

Spiral

**Q4) WAP to print prime numbers between 1 and 100.**

**CODE :**

```
1 package Practice2;
2 import Practice1.Prime;
3
4 public class mainPrime {  ⚡ RevanMidha005
5     public static void main(String[] args) {  ⚡ RevanMidha005
6         Prime obj = new Prime();
7
8         for (int i = 1; i <= 100; i++) {
9             obj.isPrime(i);
10        }
11    }
12 }
13
```

## OUTPUT:

```
Run  mainPrime x
C:\Program Files\Eclipse A
1 Not Prime
2 Prime
3 Prime
4 Not Prime
5 Prime
6 Not Prime
7 Prime
8 Not Prime
9 Not Prime
10 Not Prime
11 Prime
12 Not Prime
13 Prime
14 Not Prime
15 Not Prime
16 Not Prime
17 Prime
18 Not Prime
19 Prime
20 Not Prime
21 Not Prime
22 Not Prime
23 Prime
24 Not Prime
25 Not Prime
26 Not Prime
27 Not Prime
28 Not Prime
29 Prime
30 Not Prime
31 Prime
32 Not Prime
33 Not Prime
34 Not Prime
35 Not Prime
36 Not Prime
37 Prime
38 Not Prime
39 Not Prime
40 Not Prime
61 Prime
62 Not Prime
63 Not Prime
64 Not Prime
65 Not Prime
66 Not Prime
67 Prime
68 Not Prime
69 Not Prime
70 Not Prime
71 Prime
72 Not Prime
73 Prime
74 Not Prime
75 Not Prime
76 Not Prime
77 Not Prime
78 Not Prime
79 Prime
80 Not Prime
81 Not Prime
82 Not Prime
83 Prime
84 Not Prime
85 Not Prime
86 Not Prime
87 Not Prime
88 Not Prime
89 Prime
90 Not Prime
91 Not Prime
92 Not Prime
93 Not Prime
94 Not Prime
95 Not Prime
96 Not Prime
97 Prime
98 Not Prime
99 Not Prime
100 Not Prime
```

**HANDWRITTEN :**

Ans) mainbme.java

import ~~Package~~ java.util.\*; mainbme.java

```
public class mainbme {  
    public static void main (String [] args) {  
        bme obj = new bme ();
```

```
        for (int i=1; i<=100; i++) {  
            obj.bme(i);  
        }  
    }  
}
```

```
4  
4
```