Assignment – 3

Practice Questions : 1

Q1) WAP to create basic calculator functions and call them

CODE :

Calculator.java × mainCalc.java

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

public class Calculator {  2 usages  RevanMidha005
    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) {  1 usage  RevanMidha005
        Scanner scn = 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 = scn.nextInt();
            System.out.println();

            if (choice == 1) {
                System.out.println("Sum of numbers is: " + add(a, b));
            }
            else if (choice == 2) {
                System.out.println("Subtraction of numbers is: " + subtract(a, b));
            }
            else if (choice == 3) {
                System.out.println("Multiplication of numbers is: " + multiply(a, b));
            }
            else if (choice == 4) {
                System.out.println("Division of numbers is: " + divide(a, b));
            }
            else if (choice == 5) {
                System.out.println("Thanks for using my program!");
                return;
            }
            else {
                System.out.println("Invalid choice");
            }
            System.out.println();
        }

    }
}
```

Calculator.java mainCalc.java

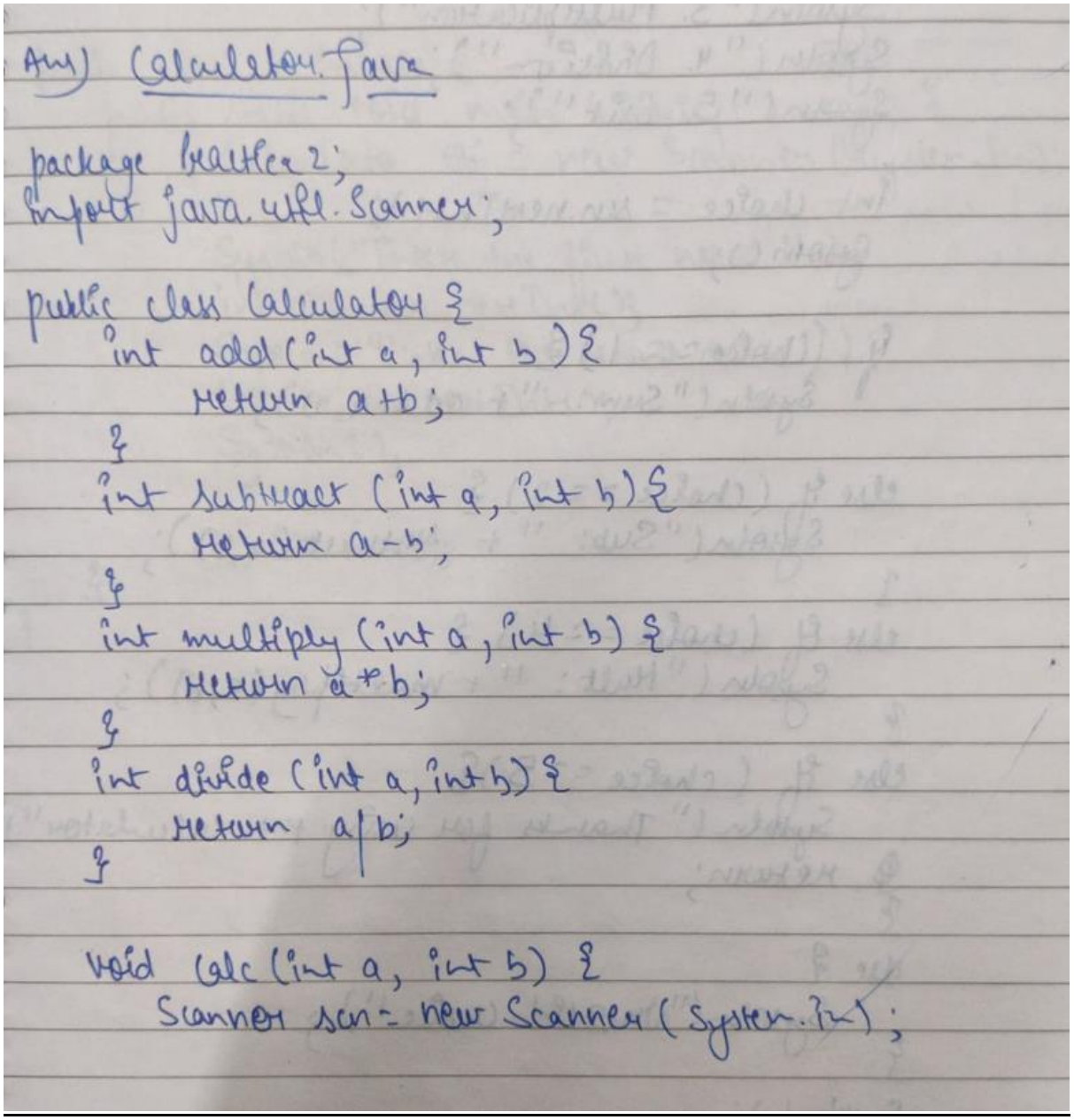
```java
package Practice2;
import java.util.Scanner;

public class mainCalc {  RevanMidha005
    public static void main(String[] args) {  RevanMidha005
        Calculator obj = new Calculator();
        Scanner scn = new Scanner(System.in);

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

        obj.Calc(a, b);
    }
}
```

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 Practice2;
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 scn = new Scanner (System.in);
```

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

    int choice = sn.nextInt();
    Sysoln();

    if (choice == 1) {
        Sysoln("Sum: " + add(a,b));

    else if (choice == 2) {
        Sysoln("Sub: " + subtract(a,b));
    }
    else if (choice == 4) {
        Sysoln("Mult: " + multiply(a,b));
    }
    else if (choice == 5){
        Sysoln("Thanks for using the calculator");
        return;
    }
    else {
        Sysoln("Invalid choice");
    }
    Sysoln();
    }
}
```

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 = sc.nextInt();
        System.out.println("Enter the second no: ");
        int b = sc.nextInt();
        System.out.println();

        Obj.Calc(a,b);
    }
}
```

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

CODE :

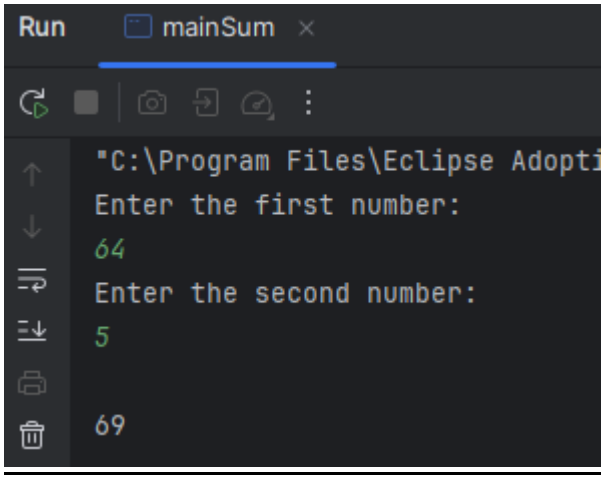
Sum.java

```java
package Practice2;

public class Sum {  2 usages  RevanMidha005
    void sum(int a, int b) {  1 usage  RevanMidha005
        System.out.println(a + b);
    }
}

```

mainSum.java

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

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

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

        Sum obj3 = new Sum();
        obj3.sum(a, b);
    }
}

```

OUTPUT :


Run
mainSum
"C:\Program Files\Eclipse Adopti
Enter the first number:
64
Enter the second number:
5
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 scn = new Scanner(System.in);

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

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

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

CODE :

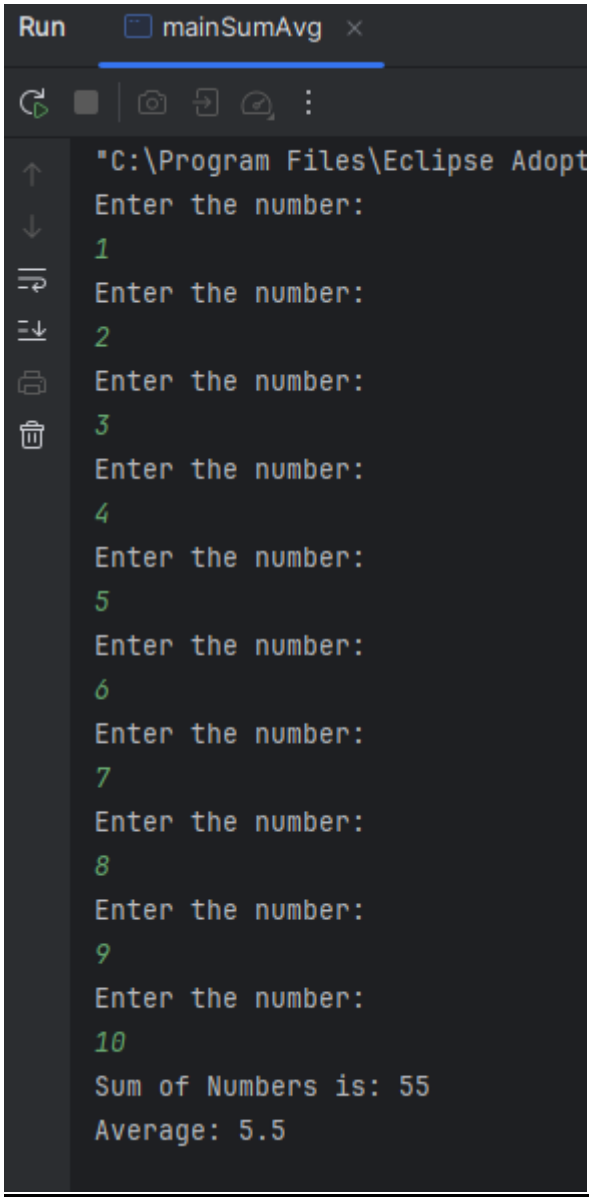
SumAvg.java

```java
package Practice2;

public class SumAvg {  2 usages  RevanMidha005
    void sumAvg(int []arr) {  1 usage  RevanMidha005
        int sum = 0;
        for (int i : arr){
            sum += i;
        }
        System.out.println("Sum of Numbers is: " + sum);
        System.out.println("Average: " + (double)sum / (double)arr.length);
    }
}
```

mainSumAvg.java

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

public class mainSumAvg {  RevanMidha005
    public static void main(String[] args) {  RevanMidha005
        Scanner scn = 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 number: ");
            int n = scn.nextInt();
            arr[i] = n;
        }
        obj.sumAvg(arr);
    }
}
```

OUTPUT :


Run
mainSumAvg
"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

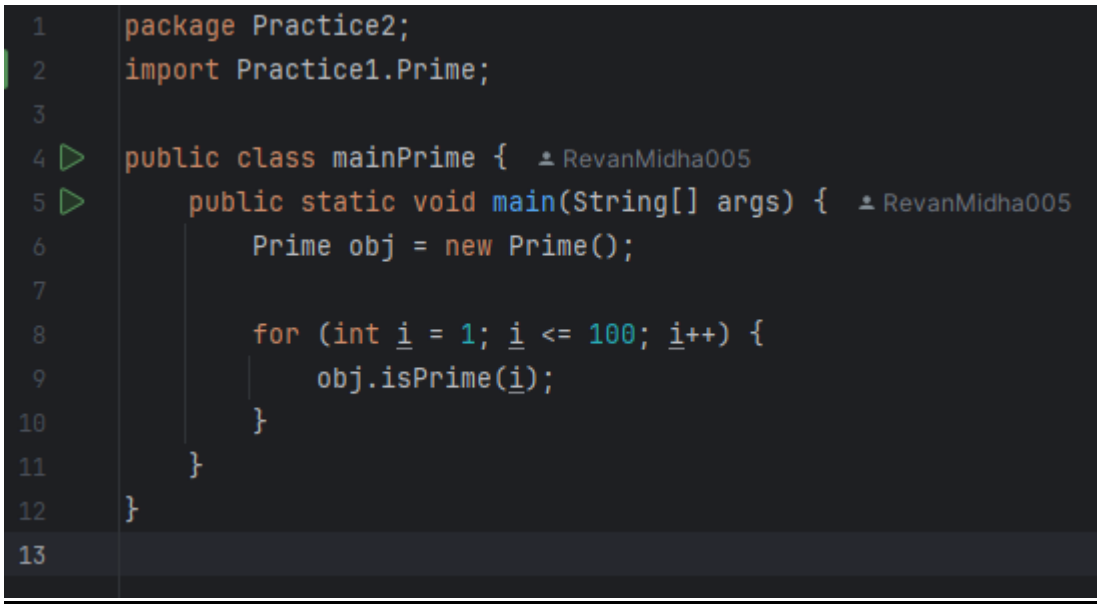
```
package Practice2;

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);
    }
}
```

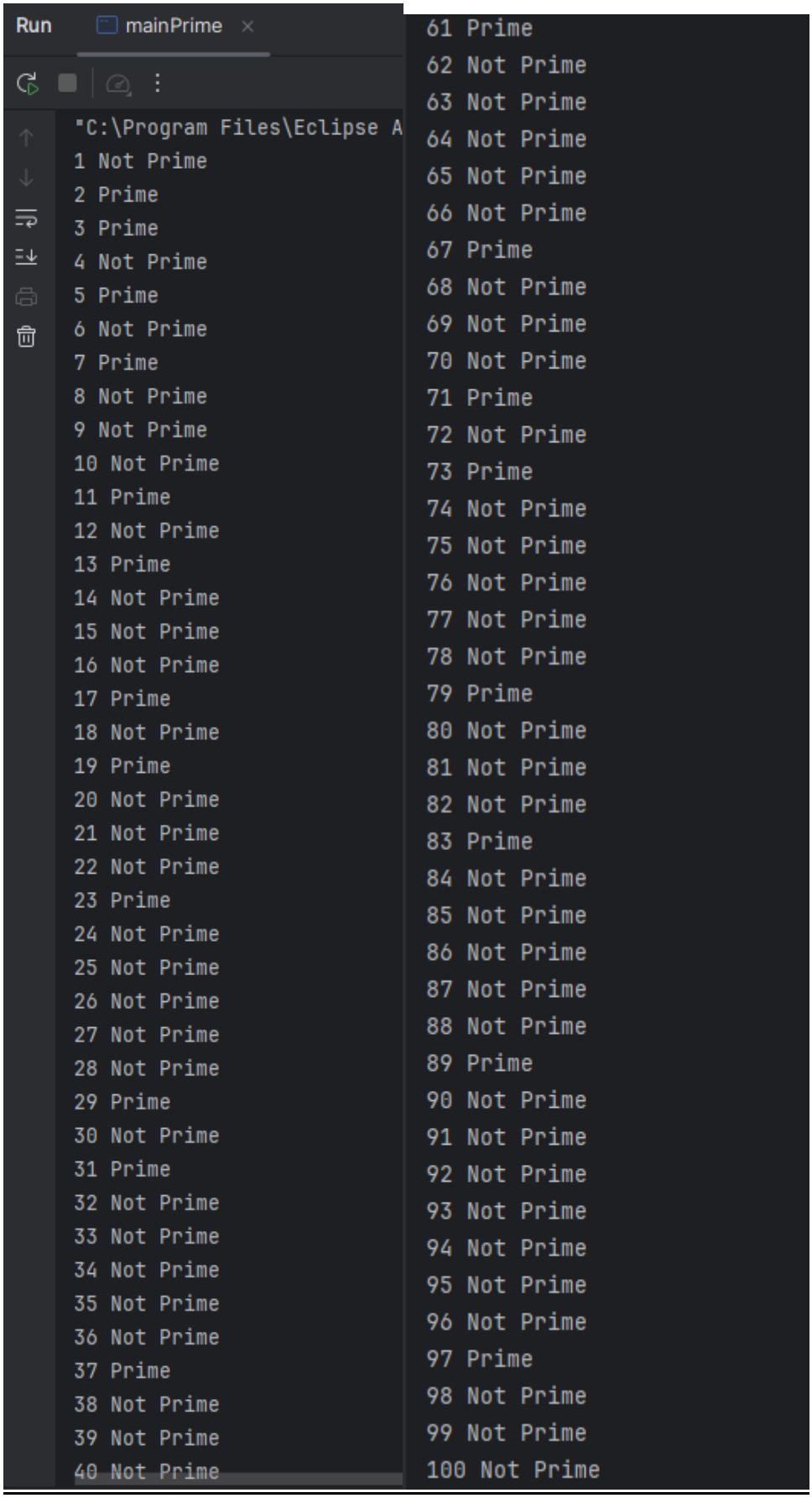
Q4) WAP to print prime numbers between 1 and 100.

CODE :



```java
package Practice2;
import Practice1.Prime;

public class mainPrime {  RevanMidha005
    public static void main(String[] args) {  RevanMidha005
        Prime obj = new Prime();

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

OUTPUT:


Run
mainPrime
"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
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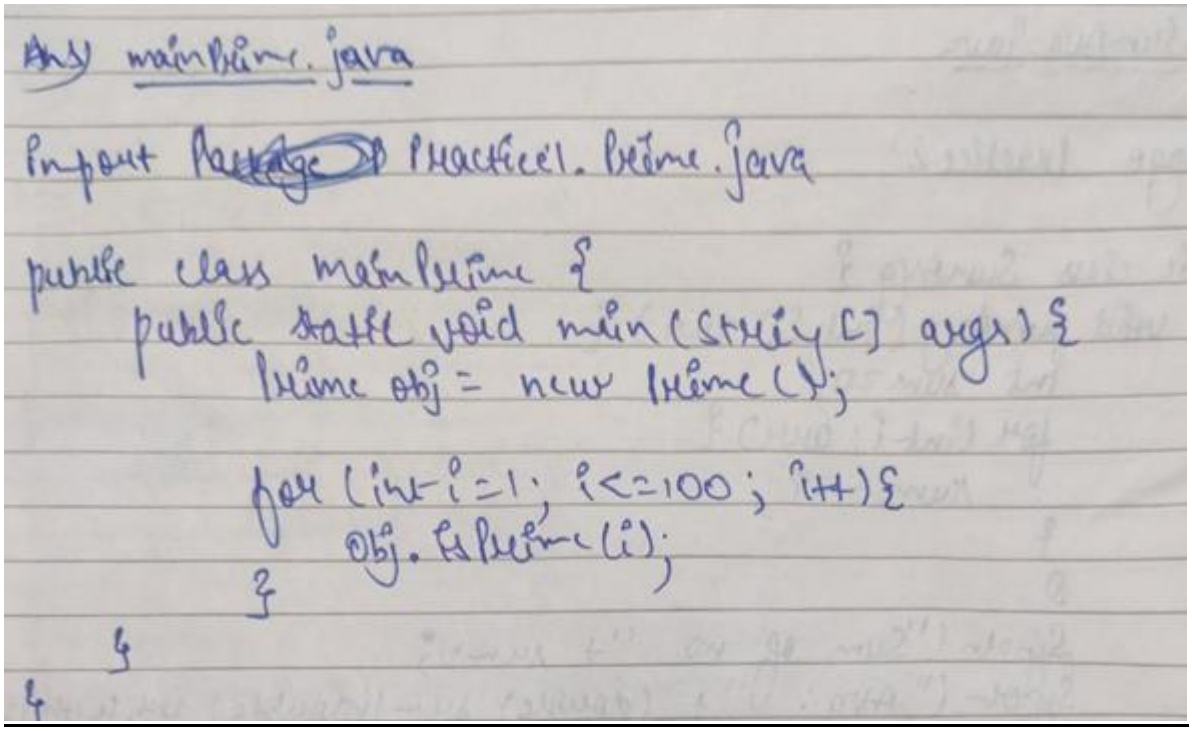
94 Not Prime
95 Not Prime
96 Not Prime
97 Prime
98 Not Prime
99 Not Prime
100 Not Prime

HANDWRITTEN :



Any mainPrime.java

```
import Practical.Prime.java

public class mainPrime {
    public static void main(String[] args) {
        Prime obj = new Prime();

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