

Name: Aditya Deepak Parkar (Automation SA2506029)

Java Assignment

Question 1) Write a Java program to reverse a string with and without reverse() function.

Code:- Using reverse()

```
ReverseAString.java ×
1 //Question 1: Write a Java program to reverse a string with and without reverse() function.
2
3 package Assignment;
4
5 public class ReverseAString {
6
7     public static void main(String[] args) {
8
9         String str = "aditya";
10
11         // --> Using reverse()
12
13         StringBuilder s = new StringBuilder(str);
14
15         System.out.println("Actual string: " + s);
16         System.out.println("Reverse string: " + s.reverse());
17
18
19     }
20
21 }
22 }
```

Output:-

```
Problems @ Javadoc Declaration Console ×
<terminated> ReverseAString [Java Application] C:\Users\ragep\
Actual string: aditya
Reverse string: aytida
```

Code:- Without using reverse()

```
ReverseAString.java ×
1 //Question 1: Write a Java program to reverse a string with and without reverse() function.
2
3 package Assignment;
4
5 public class ReverseAString {
6
7     public static void main(String[] args) {
8
9         String str = "aditya";
10
11         // --> Using reverse()
12
13         /*StringBuilder s = new StringBuilder(str);
14
15         System.out.println("Actual string: " + s);
16         System.out.println("Reverse string: " + s.reverse()); */
17
18         // --> Without using reverse()
19
20         for (int i = 5; i >= 0; i--) {
21             System.out.print(str.charAt(i));
22         }
23
24     }
25
26 }
27
```

Output:-

```
Problems @ Javadoc Declaration Console ×
<terminated> ReverseAString [Java Application] C:\Users\ragep\
aytida
```

Question 2) Write a Java Program to find prime numbers between 1 to 100.

Code:-

```
ReverseAString.java PrimeNumbers.java ×
1 // Question 2: Write a Java Program to find prime numbers between 1 to 100.
2
3 package Assignment;
4
5 public class PrimeNumbers {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         System.out.println("Prime numbers between 1 and 100:");
10
11         for (int number = 2; number <= 100; number++) {
12             if (isPrime(number)) {
13                 System.out.println(number + " ");
14             }
15         }
16     }
17
18     //Method to check if the number is a prime number
19     public static boolean isPrime(int num) {
20         if (num <= 1)
21             return false;
22         for (int i = 2; i <= Math.sqrt(num); i++) {
23             if (num % i == 0)
24                 return false;
25         }
26         return true;
27     }
28 }
29
30 }
31
```

Output:-

```
Problems @ Javadoc Declaration Console ×
<terminated> PrimeNumbers [Java Application] C:\Users\ragep
Prime numbers between 1 and 100:
2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73
79
83
89
97
```

Question 3) Write a Java Program to handle given unchecked exception

a) ArrayIndexOutOfBoundsException

b) NullPointerException

Code:- a) ArrayIndexOutOfBoundsException

```
ReverseAString.java  PrimeNumbers.java  HandleException.java ×
1 // Question 3: Write a Java Program to handle given unchecked exception
2 //      a) ArrayIndexOutOfBoundsException b) NullPointerException
3
4 package Assignment;
5
6 public class HandleException {
7
8     public static void main(String[] args) {
9
10         // a) ArrayIndexOutOfBoundsException
11         int a[] = {1,2,3,4,5,6};
12
13         try {
14             System.out.println("Accessing index 8: " + a[8]);
15         } catch (ArrayIndexOutOfBoundsException e) {
16             System.out.println("Exception caught: " + e);
17             System.out.println("make sure the index is within the valid range (0 to " + (a.length - 1) + ").");
18         }
19         System.out.println("Program continues after exception handling.");
20     }
21 }
22
23 }
```

Output:-

```
Problems  @ Javadoc  Declaration  Console ×  Eclipse IDE for Java Developers 2025-09 Release
<terminated> HandleException [Java Application] C:\Users\ragep\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64
Exception caught: java.lang.ArrayIndexOutOfBoundsException: Index 8 out of bounds for length 6
make sure the index is within the valid range (0 to 5).
Program continues after exception handling.
```

Code:- b) NullPointerException

```
ReverseAString.java  PrimeNumbers.java  HandleException.java ×
1 // Question 3: Write a Java Program to handle given unchecked exception
2 //           a) ArrayIndexOutOfBoundsException b) NullPointerException
3
4 package Assignment;
5
6 public class HandleException {
7
8     public static void main(String[] args) {
9
10        /* a) ArrayIndexOutOfBoundsException
11
12        // b) NullPointerException
13        String str = null;
14
15        try {
16            int length = str.length();
17            System.out.println("Length of the string is: " + length);
18        } catch (NullPointerException e) {
19            System.out.println("Caught a NullPointerException");
20            System.out.println("Error: " + e.getMessage());
21        }
22
23        System.out.println("Program continues after exception handling.");
24    }
25
26 }
```

Output:-

```
Problems  @ Javadoc  Declaration  Console ×  Eclipse IDE for Java Developers 2025-09 Release
<terminated> HandleException [Java Application] C:\Users\ragep\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64
Caught a NullPointerException
Error: Cannot invoke "String.length()" because "str" is null
Program continues after exception handling.
```

Question 4) Write a Java Program to sort the ArrayList in Ascending order.

Code:-

```
ReverseAString.java PrimeNumbers.java HandleException.java SortArrayList.java X
1 // Question 4: Write a Java Program to sort the ArrayList in Ascending order
2
3 package Assignment;
4
5 import java.util.ArrayList;
6 import java.util.Collections;
7
8 public class SortArrayList {
9
10
11     public static void main(String[] args) {
12
13         ArrayList<Integer> numbers = new ArrayList<>();
14
15         numbers.add(41);
16         numbers.add(17);
17         numbers.add(5);
18         numbers.add(25);
19         numbers.add(4);
20         numbers.add(9);
21
22         System.out.println("Original ArrayList: " + numbers);
23
24         // Sorting the ArrayList in ascending order
25         Collections.sort(numbers);
26
27         System.out.println("Sorted ArrayList (Ascending): " + numbers);
28
29     }
30
31 }
```

Output:-

```
Problems @ Javadoc Declaration Console X Eclipse
<terminated> SortArrayList [Java Application] C:\Users\ragep\p2\pool\plu
Original ArrayList: [41, 17, 5, 25, 4, 9]
Sorted ArrayList (Ascending): [4, 5, 9, 17, 25, 41]
```

Question 5) Write a Java Program to implement multiple inheritance.

Code:- Java does not support Multiple Inheritance using classes.

```
ReverseAString.java × PrimeNumbers.java HandleException.java SortArrayList.java test.java ×
1 // Question 5: Write a Java Program to implement multiple inheritance
2
3 // Java DOES NOT support Multiple Inheritance using classes.
4
5 package Assignment;
6
7 import java.io.*;
8
9 // First Parent class
10 class Parent1 {
11     void fun() {
12         System.out.println("Parent1");
13     }
14 }
15
16 //Second Parent class
17 class Parent2 {
18     void fun() {
19         System.out.println("Parent2");
20     }
21 }
22
23 //Inheriting properties of Parent1 and Parent2
24 class test extends Parent1, Parent2 {
25
26     public static void main(String[] args) {
27
28         // creating instance of test
29         test t = new test();
30         t.fun();
31
32     }
33
34 }
35
```