Sandeep Sir: Assignment 6

1.Declare a single-dimensional array of 5 integers inside the main method. Traverse the array to print the default values. Then accept records from the user and print the updated values of the array.

```
package com.assignment.question1;

import java.util.Arrays;
import java.util.Scanner;

public class Question1 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        // TODO Auto-generated method stub
        int[] arr = new int[5];

        for(int ele: arr) {
            System.out.print(ele+" ");
        }

        for(int i=0; i<5; i++) {
            arr[i] = sc.nextInt();
        }

        System.out.println(Arrays.toString(arr));
    }
}
```

```
<terminated> Question1 (1) [J
0 0 0 0 0
1 2 3 4 5
[1, 2, 3, 4, 5]
```

2. Declare a single-dimensional array of 5 integers inside the main method. Define a method named acceptRecord to get input from the terminal into the array and another method named printRecord to print the state of the array to the terminal.

```
package com.assignment.question2;

import java.util.Scanner;

public class Question2 {
    public static int[] acceptRecord(Scanner sc, int[] ar
r) {
        System.out.println("Enter Values");
        for(int i=0; i<arr.length; i++) {
            arr[i] = sc.nextInt();
        }
        return arr;
    }

    public static String printRecord(int[] arr) {
        String str = "";

        for(int i: arr) {
            str = str + i + " ";
        }

        return str;
    }

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

```
        // TODO Auto-generated method stub
        Scanner sc = new Scanner(System.in);

        int[] arr = new int[6];

        Question2.acceptRecord(sc, arr);
        System.out.println(Question2.printRecord(arr));

    }
}
```

```
<terminated> Question2 (1) [Java App
Enter Values
1 2 3 4 5
6
1 2 3 4 5 6
```

3. Write a program to find the maximum and minimum values in a single-dimensional array of integers.

```
package com.assignment.question3;

public class Question3 {

    public static void main(String... args) {
    int[] arr = new int[] {2,3,100,9,15};

    int min = arr[0];
    int max = arr[0];

    for (int i=0; i<arr.length; i++) {
        min = (arr[i]<min) ? arr[i] : min;
        max = (arr[i]>max) ? arr[i] : max;
```

```
    }

    System.out.println("Min : " + min + " Max: " + max);
    }
}
```

```
<terminated> Question3 (2) [Java A
Min : 2 Max: 100
```

4. Write a program to remove duplicate elements from a single-dimensional array of integers.

```
package com.assignment.question4;

import java.util.Arrays;

public class Question4 {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        int[] arr = new int[] {10,30,20,10,30,20};

        int[] temp = new int[arr.length];

        int count = 0;
        for(int i = 0; i<arr.length; i++ ) {
            boolean flag = false;
            for (int j = i+1; j<arr.length; j++) {
                if (arr[i] == arr[j]) {
                    flag = true;
                    break;
                }
            }
            if(flag==false) {
```

```
                temp[count] = arr[i];
                count++;
            }
        }

        System.out.println(Arrays.toString(temp));
    }
}
```

```
<terminated> Question4 (2) [Java A
[10, 30, 20, 0, 0, 0]
```

5. Write a program to find the intersection of two single-dimensional arrays.

```
package com.assignment.question5;

import java.util.Arrays;

public class Question5 {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        int[] arr1 = new int[]{2,3,5,7,11,13,17};
        int[] arr2 = new int[]{1,3,5,7,9,10,20,30,40};

        int length = arr1.length > arr2.length ? arr2.leng
th : arr1.length;

        int[] arr3 = new int[length];

        int count = 0;

        for(int i=0; i<arr1.length; i++) {
            for(int j=0; j<arr2.length; j++) {
```

```
                if (arr2[j] == arr1[i]) {
                    arr3[count] = arr1[i];
                    count++;
                    break;
                }
            }
        }

        System.out.println(Arrays.toString(arr3));
    }
}
```

```
<terminated> Question5 (2) [Java Appli
[3, 5, 7, 0, 0, 0, 0]
```

6. Write a program to find the missing number in an array of integers ranging from 1 to N.

```
package com.assignment.question6;

public class Question6 {
    public static void main(String... args) {
    int[]arr = new int[] {1,2,3,5,6,7,8,9};
    int num=-1;
    for(int i=1; i<=arr.length; i++) {
        if(arr[i-1] != i) {
            num = i;
            break;
        }
    }
    System.out.println("Missing Number is: "+ num);
```

```
 }
}
```

```
<terminated> Question6 [Java Applica
Missing Number is: 4
```

7. Declare a single-dimensional array as a field inside a class and instantiate it inside the class constructor. Define methods named acceptRecord and printRecord within the class and test their functionality.

```
package com.assignment.question7;

import java.util.Arrays;
import java.util.Scanner;

class ArrayClass{
    private int[] arr;
    private int len;

    ArrayClass(){
        this(5);
    }

    ArrayClass(int len){
        this.len = len;
        this.arr = new int[len];
    }

    public void acceptRecord(Scanner sc) {
        for(int i=0; i<this.len; i++) {
            System.out.print("Enter value "+ (i+1)+ " ");
            this.arr[i] = sc.nextInt();
        }
```

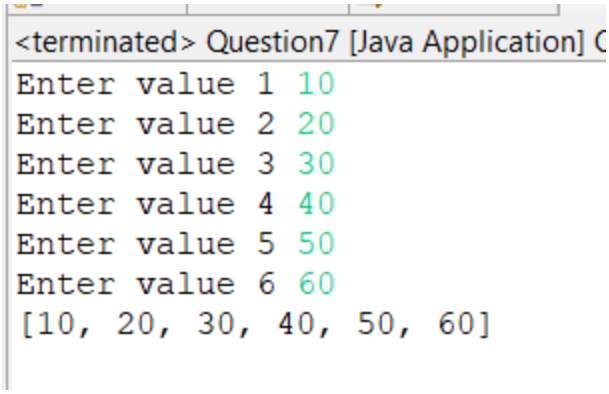
```
    }

    public int[] printRecord() {
        return this.arr;
    }
}

public class Question7 {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        Scanner sc = new Scanner(System.in);
        ArrayClass arr = new ArrayClass(6);

        arr.acceptRecord(sc);
        System.out.println(Arrays.toString(arr.printRecord
()));
    }
}
```



8. Modify the previous assignment to use getter and setter methods instead of acceptRecord and printRecord.

```
package com.assignment.question8;
```

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

class ArrayClass{
    private int[] arr;
    private int len;

    ArrayClass(){
        this(5);
    }

    ArrayClass(int len){
        this.len = len;
        this.arr = new int[len];
    }

    public int[] getArr() {
        return this.arr;
    }

    public void setArr(int... arr) {
        for(int i=0; i<this.arr.length; i++) {
            this.arr[i] = arr[i];
        }
    }


}

public class Question8 {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        Scanner sc = new Scanner(System.in);
        ArrayClass arr = new ArrayClass(6);
```

```
        arr.setArr(10,20,30,40,50,60);
        System.out.println(Arrays.toString(arr.getArr()));
    }

}
```

```
<terminated> Question8 [Java Application]
[10, 20, 30, 40, 50, 60]
```

9. You need to implement a system to manage airplane seat assignments. The airplane has seats arranged in rows and columns. Implement functionalities to:
   - Initialize the seating arrangement with a given number of rows and columns.
   - Book a seat to mark it as occupied.
   - Cancel a booking to mark a seat as available.
   - Check seat availability to determine if a specific seat is available.
   - Display the current seating chart.

```
package com.assignment.question9;

import java.util.Arrays;

class SeatBooking{
    private int[][] seats;

    SeatBooking(){
        this(3,3);
    }

    SeatBooking(int rows, int cols){
        seats = new int[rows][cols];
    }

    public String checkSeats(int row, int col) {
```

```
        if(this.seats[row-1][col-1]==0) {
            return "Seat is Available";
        }else {
            return "Seat is not Available";
        }
    }

    public String getSeats() {
        return Arrays.deepToString(this.seats);
    }

    public void bookSeats(int row, int col) {
        this.seats[row-1][col-1] = 1;
    }

    public void cancelSeats(int row, int col) {
        this.seats[row-1][col-1] = 0;
    }

}

public class Question9 {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        SeatBooking s1 = new SeatBooking();

        System.out.println(s1.getSeats());
        s1.bookSeats(1, 3);
        System.out.println(s1.checkSeats(1, 3));
        System.out.println(s1.getSeats());
        s1.cancelSeats(1, 3);
        System.out.println(s1.checkSeats(1, 3));
        System.out.println(s1.getSeats());
```

```
    }
}
```

```
<terminated> Question9 [Java Application] C:\Users\re
[[0, 0, 0], [0, 0, 0], [0, 0, 0]]
Seat is not Available
[[0, 0, 1], [0, 0, 0], [0, 0, 0]]
Seat is Available
[[0, 0, 0], [0, 0, 0], [0, 0, 0]]
```