

## Assignment 05(Yash Yadav)

Q1]

```
class SumAvg{  
    public static void main(String[] args) {  
        int arr[] = new int [10];  
        int sum = 0;  
        int avg = 0;  
        for (int i = 0; i < arr.length; i++) {  
            arr[i] = (int)(Math.random() * 100);  
            System.out.println(" "+arr[i]);  
            sum += arr[i];  
        }  
        avg = sum / arr.length;  
        System.out.println("Sum of Array is :" +sum+ " Average of Array is :" +avg);  
    }  
}
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>java ArrSumAvg.java  
Array is:  
 45 63 15 24 12 64 15 88 23 90  
Sum of Array is :439 Average of Array is :43
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>
```

Q2]

```
1 class MinMax{  
2     public static void main(String[] args) {  
3         int arr[] = new int [10];  
4  
5         for (int i = 0;i<arr.length ;i++ ) {  
6             arr[i] = (int) (Math.random() * 25);  
7             System.out.print(" "+arr[i]);  
8         }  
9         int min = arr[0];  
10        int max = arr[0];  
11  
12        for (int i = 1;i<arr.length;i++) {  
13            if (arr[i]<min) {  
14                min = arr[i];  
15            }  
16            if (arr[i]>max) {  
17                max = arr[i];  
18            }  
19        }  
20        System.out.println(" min : "+min+" max :" +max);  
21    }  
22 }
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>java MinMax.java  
17 14 17 20 2 15 23 6 5 14 min : 2 max :23
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>
```

### Q3]

```
1 import java.util.*;
2 class ArrSearch{
3     public static void main(String[] args) {
4         Scanner sc = new Scanner(System.in);
5         int flag = 0;
6         int arr[] = new int [10];
7
8         for (int i=0;i<arr.length;i++) {
9             arr[i] = (int)(Math.random()*25);
10            System.out.print(" "+arr[i]);
11        }
12        System.out.println("\nEnter the Number you want to Search :");
13        int num = sc.nextInt();
14        for (int i= 0;i<arr.length;i++) {
15            if (arr[i]==num) {
16                System.out.println("Numbeer "+num+" Found At Position "+i);
17                flag++;
18                return;
19            }
20        }
21    }
22    if (flag==0) {
23        System.out.println("Number "+num+" Not Found in the Array");
24    }
25}
26}
27}
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>java ArrSearch.java
15 2 13 16 17 9 6 15 1 2
Enter the Number you want to Search :
9
Numbeer 9 Found At Position 5

D:\CDAC Hyderabad\JAVA\Assignment 05>java ArrSearch.java
6 19 11 8 22 15 14 10 9 9
Enter the Number you want to Search :
0
Number 0 Not Found in the Array

D:\CDAC Hyderabad\JAVA\Assignment 05>
```

Q4]

```
1 class ArrRev{  
2     public static void main(String[] args) {  
3         int arr[] = new int [10];  
4         for (int i=0;i<arr.length;i++) {  
5             arr[i] = (int)(Math.random()*25);  
6             System.out.print(" "+arr[i]);  
7         }  
8         System.out.println("\nReverse Array is: ");  
9         for (int i = 9;i>=0 ;i--) {  
10            System.out.print(" "+arr[i]);  
11        }  
12    }  
13 }
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>java ArrRev.java  
11 23 21 16 2 23 20 24 0 14  
Reverse Array is:  
14 0 24 20 23 2 16 21 23 11  
D:\CDAC Hyderabad\JAVA\Assignment 05>
```

Q5]

```
1 class ArrSqOdd{  
2     public static void main(String[] args) {  
3         int arr [] = new int [10];  
4         for (int i = 0;i<arr.length;i++) {  
5             arr[i] = (int)(Math.random()*25);  
6             System.out.print(" "+ arr[i]);  
7         }  
8         System.out.println("\nNew Array is");  
9         for (int i = 0 ;i<arr.length ;i++ ) {  
10            if (i%2!=0) {  
11                arr[i] = arr[i] * arr[i];  
12            }  
13            System.out.print(" "+arr[i]);  
14        }  
15    }  
16 }
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>java ArrSqOdd.java  
2 14 14 13 6 0 4 23 9 14  
New Array is  
2 196 14 169 6 0 4 529 9 196  
D:\CDAC Hyderabad\JAVA\Assignment 05>
```

## Q6]

```
1  class SumHalfs{
2      public static void main(String[] args) {
3          int arr [] = new int [10];
4          int halfsum1 = 0;
5          int halfsum2 = 0;
6
7          for (int i=0;i<arr.length;i++) {
8              arr[i] = (int)(Math.random()* 25);
9              System.out.println(" "+arr[i]);
10         }
11         int n = arr.length;
12         System.out.println(n);
13
14         for (int i=0;i<n/2 ;i++) {
15             halfsum1 += arr[i];
16         }
17         for (int i=n/2;i<n;i++) {
18             halfsum2 += arr[i];
19         }
20         System.out.println("Sum of First Half of Array is : "+halfsum1+"\n Sum of Second Half of Array is : "+halfsum2);
21
22     }
23 }
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>java SumHalfs.java
```

```
16
7
22
14
2
17
8
1
20
0
10
Sum of First Half of Array is : 61
Sum of Second Half of Array is : 46
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>
```

Q7]

```
1  class ArrNth{
2      public static void main(String[] args) {
3          int arr[] = new int [10];
4          System.out.println("Array is :");
5          for (int i=0;i<arr.length;i++) {
6              arr[i] = (int)(Math.random()*100);
7              System.out.print(" "+arr[i]);
8          }
9          System.out.println();
10         System.out.println("Acending Order: ");
11
12         for (int i = 0;i<arr.length;i++) { // {1,2,3,4,3,2,5}
13             int m = i;
14             for (int j = i;j<arr.length;j++ ) {
15                 if (arr[j]<arr[m]) {
16                     m = j;
17                 }
18             }
19             int temp = arr[m];
20             arr[m] = arr[i];
21             arr[i] = temp;
22         }
23         for (int i=0;i<arr.length;i++) {
24             System.out.print(" "+arr[i]);
25         }
26         System.out.println();
27         System.out.println("Decending Order: ");
28
29         for (int i = 0;i<arr.length;i++) { // {1,2,3,4,3,2,5}
30             int m = i;
31             for (int j = i;j<arr.length;j++ ) {
32                 if (arr[j]>arr[m]) {
33                     m = j;
34                 }
35             }
36             int temp = arr[m];
37             arr[m] = arr[i];
38             arr[i] = temp;
39         }
40         for (int i=0;i<arr.length;i++) {
41             System.out.print(" "+arr[i]);
42         }
43     }
44 }
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>java ArrNth.java
Array is :
97 89 61 50 21 9 22 98 86 96
Acending Order:
9 21 22 50 61 86 89 96 97 98
Decending Order:
98 97 96 89 86 61 50 22 21 9
D:\CDAC Hyderabad\JAVA\Assignment 05>
```

Q8]

```
1 import java.util.*;
2
3 class ArrPrint {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         int n;
7         System.out.print("Enter size: ");
8         n = sc.nextInt();
9         int a[] = new int[n];
10
11         System.out.println("Enter elements:");
12         for (int i = 0; i < n; i++) {
13             a[i] = sc.nextInt();
14         }
15
16         System.out.println("Array elements:");
17         for (int i = 0; i < n; i++) {
18             System.out.print(a[i] + " ");
19         }
20     }
21 }
22 }
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>java ArrPrint.java
Enter size: 5
Enter elements:
1
23
44
33
55
Array elements:
1 23 44 33 55
D:\CDAC Hyderabad\JAVA\Assignment 05>
```

Q9]

```
1 import java.util.*;
2
3 class MatAdd {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         int r, c;
7         System.out.print("Enter rows & cols: ");
8         r = sc.nextInt();
9         c = sc.nextInt();
10
11        int a[][] = new int[r][c];
12        int b[][] = new int[r][c];
13        int s[][] = new int[r][c];
14
15        System.out.println("Enter 1st matrix:");
16        for (int i = 0; i < r; i++)
17            for (int j = 0; j < c; j++)
18                a[i][j] = sc.nextInt();
19
20        System.out.println("Enter 2nd matrix:");
21        for (int i = 0; i < r; i++)
22            for (int j = 0; j < c; j++)
23                b[i][j] = sc.nextInt();
24
25        System.out.println("Sum:");
26        for (int i = 0; i < r; i++) {
27            for (int j = 0; j < c; j++) {
28                s[i][j] = a[i][j] + b[i][j];
29                System.out.print(s[i][j] + " ");
30            }
31            System.out.println();
32        }
33    }
34 }
35 }
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>java MatAdd.java
Enter rows & cols: 2
2
Enter 1st matrix:
1
2
3
4
Enter 2nd matrix:
4
3
2
1
Sum:
5 5
5 5
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>
```

Q10]

```
1 import java.util.*;
2
3 class MatMul {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         int r1, c1, r2, c2;
7         System.out.print("Enter rows & cols of 1st: ");
8         r1 = sc.nextInt();
9         c1 = sc.nextInt();
10        System.out.print("Enter rows & cols of 2nd: ");
11        r2 = sc.nextInt();
12        c2 = sc.nextInt();
13
14        if (c1 != r2) {
15            System.out.println("Not possible!");
16            return;
17        }
18
19        int a[][] = new int[r1][c1];
20        int b[][] = new int[r2][c2];
21        int m[][] = new int[r1][c2];
22
23        System.out.println("Enter 1st matrix:");
24        for (int i = 0; i < r1; i++)
25            for (int j = 0; j < c1; j++)
26                a[i][j] = sc.nextInt();
27
28        System.out.println("Enter 2nd matrix:");
29        for (int i = 0; i < r2; i++)
30            for (int j = 0; j < c2; j++)
31                b[i][j] = sc.nextInt();
32
33        for (int i = 0; i < r1; i++) {
34            for (int j = 0; j < c2; j++) {
35                m[i][j] = 0;
36                for (int k = 0; k < c1; k++) {
37                    m[i][j] += a[i][k] * b[k][j];
38                }
39                System.out.print(m[i][j] + " ");
40            }
41            System.out.println();
42        }
43    }
44}
45
```

```
D:\CDAC Hyderabad\JAVA\Assignment 05>java MatMul.java
Enter rows & cols of 1st: 2
3
Enter rows & cols of 2nd: 2
3
Not possible!

D:\CDAC Hyderabad\JAVA\Assignment 05>java MatAdd.java
Enter rows & cols: 2
2
Enter 1st matrix:
2
2
2
2
Enter 2nd matrix:
2
2
2
2
Sum:
4 4
4 4

D:\CDAC Hyderabad\JAVA\Assignment 05>
```