

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         if (flag==0) {
22             System.out.println("Number "+num+" Not Found in the Array");
23         }
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>
```