

# ASSIGNMENT 1

## Q1 ans -

```
import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the length of Array ");
        int n = sc.nextInt();
        boolean flag = true;
        int[] arr = new int[n];
        for(int i = 0 ; i < arr.length ; i++)
        {
            arr[i] = sc.nextInt();
        }
        System.out.print("Enter the search value : ");
        int x = sc.nextInt();

        for(int i = 0 ; i < arr.length ; i++)
        {
            if(arr[i] == x)
            {
                System.out.println(i);
                flag = false;
            }
        }
        if(flag)
        {
            System.out.println("Element not found");
        }
    }
}
```

## Q2 ans-

```
import java.util.Scanner;

public class Main
{
    public static void main(String[] args)
    {
        int[] arr = {1,1,1,2,3,4,4,5,6,6,6,6};
        int target = 10;
        int i = 0;
        int j = arr.length-1;
        int value = 0;
        while (i <= j)
        {
            int mid = (i+j)/2;
            if(arr[mid] == target)
            {
                if(arr[mid] == arr[mid+1])
                {
                    value = mid+1;
                    break;
                }
                else if(arr[mid] == arr[mid-1])
                {
                    value = mid;
                    break;
                }
            }
            else if(arr[mid] < target)
            {
                i = mid+1;
            }
            else if(arr[mid] > target)
            {
                j = mid-1;
            }
        }
        if(value != 0)
        {
            System.out.println("The last occurrence index : "+value);
        }
        else
        {
            System.out.println("The last occurrence index : -1");
        }
    }
}
```

```
System.out.println("-1");  
}  
}  
}
```

### **Q3 ans-**

```
import java.util.Scanner;  
  
public class Main  
{  
    public static void main(String[] args)  
    {  
        int [] arr = {0,0,0,0,1,1,1,1,1,1};  
        int count = 0;  
        for(int i = 0; i< arr.length;i++)  
        {  
            if(arr[i] > 0)  
            {  
                count++;  
            }  
        }  
        System.out.println(count);  
  
    }  
}
```

### **Q4 ans -**

```
import java.util.Scanner;  
  
public class Main  
{  
    public static void main(String[] args)  
    {  
        Scanner sc = new Scanner(System.in);  
        int[] arr = {2, 5, 5, 5, 6, 6, 8, 9, 9, 9};  
        int count = 0;  
        System.out.print("Enter the target value to find : ");
```

```
int target = sc.nextInt();

for(int i = 0; i < arr.length; i++)
{
    if(arr[i] == target)
    {
        count++;
    }
}
System.out.println("The target value is " + target + " occurs " + count + " times");
}
```

### Q5 ans-

```
import java.util.Scanner;

public class Main
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the search value : ");
        int target = sc.nextInt();

        int[] arr = new int[target];
        long i = 0;
        long j = arr.length;
        boolean flag = false;
        long value = 0;

        while (i < j)
        {
            long mid = (i + j)/2;
            double sq = mid*mid;

            if(sq == target)
            {
                value = mid;
```

```
flag = true;
break;
} else if (sq < target)
{
i = mid+1;
j++;
}else if(sq > target)
{
j =mid+1;
i++;
}
}
if(flag == false)
{
System.out.println(flag);
}else
{
System.out.println(flag);
}

}
}
```

## ASSIGNMENT 2

### Q1 ans-

```
import java.util.Arrays;

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

```

int[] arr = {3,5,1,6,0};
System.out.print("Before Sorting : ");
System.out.println(Arrays.toString(arr));
int n = arr.length;
for(int i = 1; i < n; i++)
{
    for(int j = 0; j < n-i-1;j++)
    {
        if(arr[j] < arr[j+1])
        {
            int temp = arr[j];
            arr[j] = arr[j+1];
            arr[j+1] = temp;
        }
    }
}
System.out.print("After Sorting : ");
System.out.println(Arrays.toString(arr));
}

```

## Q2 ans-

```

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

public class Main
{
    public static void main(String[] args)
    {
        int[] arr = {3,5,1,6,0};
        System.out.print("Before Sorting : ");
        System.out.println(Arrays.toString(arr));
        int n = arr.length;
        for(int i = 0; i < n; i++)
        {
            int mid_idx = i;
            for(int j = i+1; j < n ; j++)
            {
                if(arr[j] > arr[mid_idx])

```

```

{
    mid_idx = j;
}
}
if(mid_idx!= i)
{
    int temp = arr[i];
    arr[i] = arr[mid_idx];
    arr[mid_idx] = temp;
}
}
System.out.print("After Sorting : ");
System.out.println(Arrays.toString(arr));
}
}

```

### Q3 ans-

```

import java.util.Arrays;

public class InsertionAssignment
{
    public static void main(String[] args)
    {
        int[] arr = {3,5,1,6,0};
        System.out.print("Before Sorting : ");
        System.out.println(Arrays.toString(arr));
        int n = arr.length;
        for(int i = 1; i < n; i++)
        {
            int j = i;

            while (j>0 && arr[j] > arr[j-1])
            {
                int temp = arr[j];
                arr[j] = arr[j-1];
                arr[j-1] = temp;
                j--;
            }
        }
    }
}

```

```
System.out.print("After Sorting : ");  
System.out.println(Arrays.toString(arr));  
}  
}
```

#### **Q4 ans-**

After the fourth pass, the array is sorted in decreasing order. Therefore, it would take 4 passes to sort the given array {3, 5, 1, 6, 0} in decreasing order using the Bubble Sort algorithm.

#### **Q5 ans-**

After the fifth iteration, the array is sorted in descending order. Therefore, it would take 5 iterations to sort the given array {3, 5, 1, 6, 0} in descending order using the Selection Sort algorithm.

## **ASSIGNMENT 3**

#### **Q1 ans-**

```
import java.util.Scanner;  
  
public class Main  
{  
    public static void main(String[] args)  
    {  
        Scanner sc = new Scanner(System.in);  
        System.out.print("Enter the target value: ");  
        int target = sc.nextInt();  
        String binary = "";  
        while (target > 0)
```



```

{
int remainder = target%2;
binary = remainder + binary;
target = target/2;
}
System.out.println(binary);

}
}

```

## Q2 ans-

```

import java.util.*;
public class Powerof2
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the target : ");
        int target = sc.nextInt();
        boolean flag = false;
        int power = 0;
        int temp = 0;
        while (temp < target)
        {
            temp = (int) Math.pow(2,power);
            power++;
            if(temp == target)
            {
                flag = true;
            }
        }

        if(flag)
        {
            System.out.println(flag);
        }else
        {

```

```
System.out.println(flag);  
}  
  
}  
}
```

### **Q3 ans -**

```
import java.util.Scanner;  
  
public class Main  
{  
    public static void main(String[] args)  
    {  
        Scanner sc = new Scanner(System.in);  
        System.out.print("Enter the target: ");  
        int target = sc.nextInt();  
        if(target % 2 == 0)  
        {  
            System.out.println("Even");  
        }  
        else  
        {  
            System.out.println("False");  
        }  
    }  
}
```

### **Q4 ans-**

```
import java.util.Scanner;  
  
public class setbits  
{  
    public static void main(String[] args)  
    {  
        Scanner sc = new Scanner(System.in);  
        System.out.print("ENter the target : ");  
        int target = sc.nextInt();  
        int divide = 0;  
        String remainder = "";
```

```

while (target > 0)
{
    divide = target % 2;
    remainder = divide + remainder;
    target = target / 2;
}

int ans = Integer.parseInt(remainder);
int temp = 0;
int count = 0;
while (ans > 0)
{
    temp = ans % 10;
    if(temp > 0)
    {
        count++;
    }
    ans = ans / 10;
}
System.out.println(count);
}

```

## Q5 ans-

```

public class Duplicates
{
    public static void main(String[] args)
    {
        int [] arr = {4, 3, 6, 2, 6, 4, 2, 3, 4, 3, 3};
        int n = arr.length;
        int count = 0;
        for(int i = 0; i < n ; i++)
        {
            if(arr[i] % 2 != 0)
            {
                count++;
            }
        }
        System.out.println("The odd occurrence in the element is : "+count);
    }
}

```

}

}