Program 1

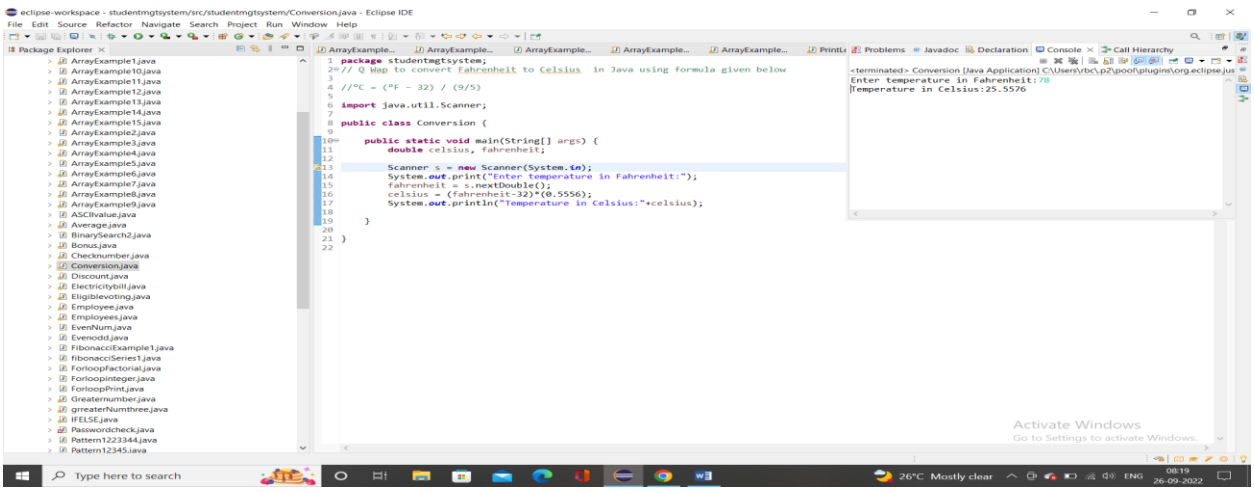
Q Wap to convert Fahrenheit to Celsius in Java using formula given below

°C = (°F – 32) / (9/5)

```
package studentmgtsystem;
// Q Wap to convert Fahrenheit to Celsius  in Java using formula given below

//°C = (°F – 32) / (9/5)

import java.util.Scanner;

public class Conversion {

	public static void main(String[] args) {
		double celsius, fahrenheit;

		Scanner s = new Scanner(System.in);
	  System.out.print("Enter temperature in Fahrenheit:");
	  fahrenheit = s.nextDouble();
	  celsius = (fahrenheit-32)*(0.5556);
	  System.out.println("Temperature in Celsius:"+celsius);

	}

}
```

Result

```
Enter temperature in Fahrenheit:78
Temperature in Celsius:25.5576
```



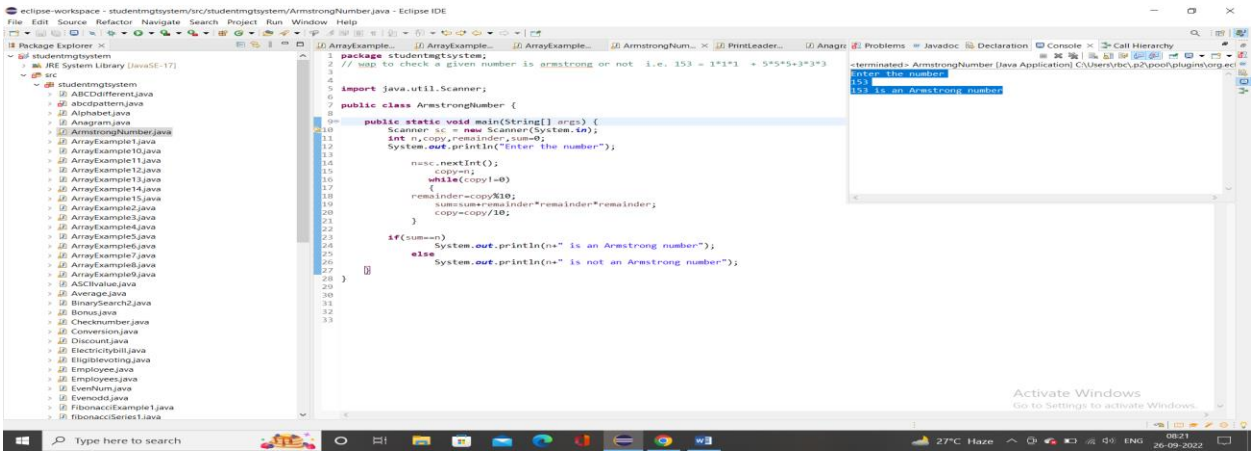
Program 2

Q 2 wap to check a given number is armstrong or not i.e. 153 = 1*1*1 + 5*5*5+3*3*3

```
package studentmgtsystem;
// wap to check a given number is armstrong or not  i.e. 153 = 1*1*1  + 5*5*5+3*3*3


import java.util.Scanner;

public class ArmstrongNumber {

	public static void main(String[] args) {
		Scanner sc = new Scanner(System.in);
		int n,copy,remainder,sum=0;
		System.out.println("Enter the number");

		n=sc.nextInt();
		copy=n;
		  while(copy!=0)
		 {
			remainder=copy%10;
				sum=sum+remainder*remainder*remainder;
			  copy=copy/10;
		}

		if(sum==n)
			System.out.println(n+" is an Armstrong number");
		else
			 System.out.println(n+" is not an Armstrong number");
	}
}
```

Result

```
Enter the number
153
153 is an Armstrong number
```

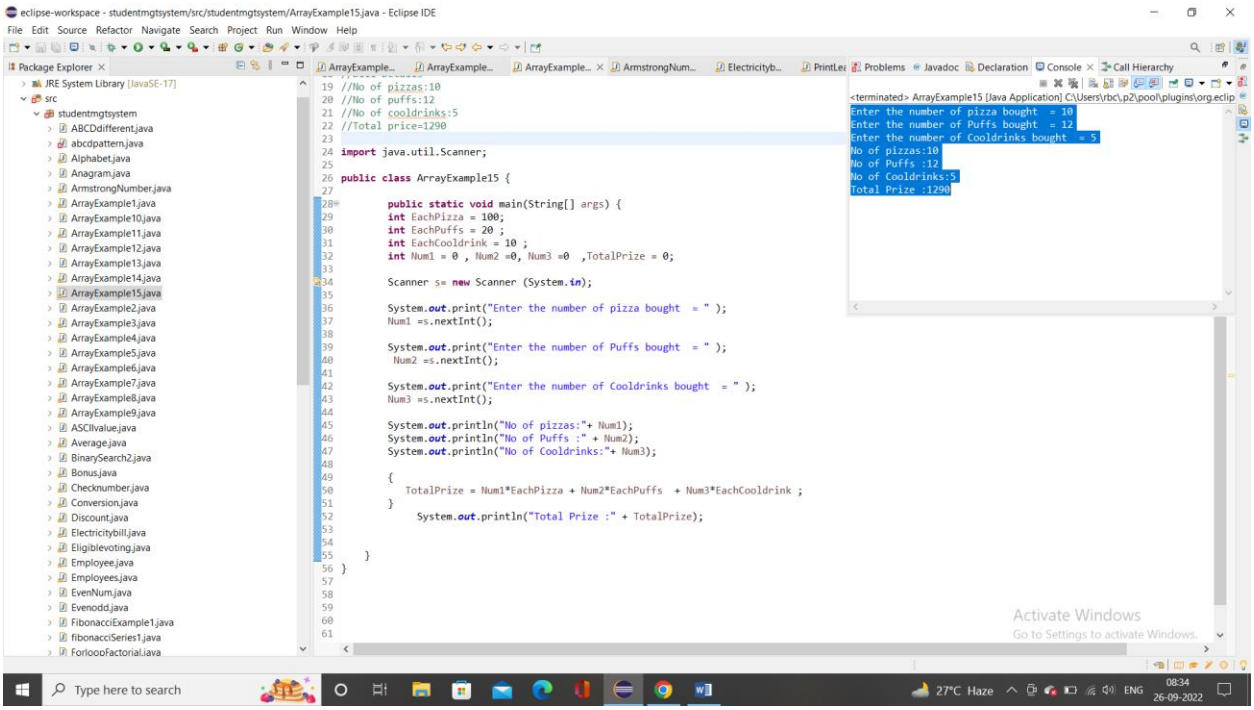


Program 3

```
package studentmgtsystem;

// Rajan  went to a movie with his friends in a multiplex theatre and during  break
time he bought pizzas, puffs and cool drinks. Consider   the following prices :

//Rs.100/pizza
//Rs.20/puffs
//Rs.10/cooldrink
//Generate a bill for What Rajan  has bought.


//Sample Input 1:

//Enter the no of pizzas bought:10
//Enter the no of puffs bought:12
//Enter the no of cool drinks bought:5

//Sample Output 1:

//Bill Details
//No of pizzas:10
//No of puffs:12
//No of cooldrinks:5
//Total price=1290
-------------------------------------------------------------------------
import java.util.Scanner;

public class ArrayExample15
          {public static void main(String[] args) {
             int EachPizza = 100;
             int EachPuffs = 20 ;
             int EachCooldrink = 10 ;
             int Num1 = 0 , Num2 =0, Num3 =0  ,TotalPrize = 0;

             Scanner s= new Scanner (System.in);

             System.out.print("Enter the number of pizza bought  = " );
             Num1 =s.nextInt();

             System.out.print("Enter the number of Puffs bought  = " );
              Num2 =s.nextInt();

             System.out.print("Enter the number of Cooldrinks bought  = " );
             Num3 =s.nextInt();

             System.out.println("No of pizzas:"+ Num1);
             System.out.println("No of Puffs :" + Num2);
             System.out.println("No of Cooldrinks:"+ Num3);

             {
                TotalPrize = Num1*EachPizza + Num2*EachPuffs  + Num3*EachCooldrink ;
             }
                  System.out.println("Total Prize :" + TotalPrize);  }}
```

Result :

```
Enter the number of pizza bought  = 10
Enter the number of Puffs bought  = 12
Enter the number of Cooldrinks bought  = 5
No of pizzas:10
No of Puffs :12
No of Cooldrinks:5
Total Prize :1290
```



Program 4

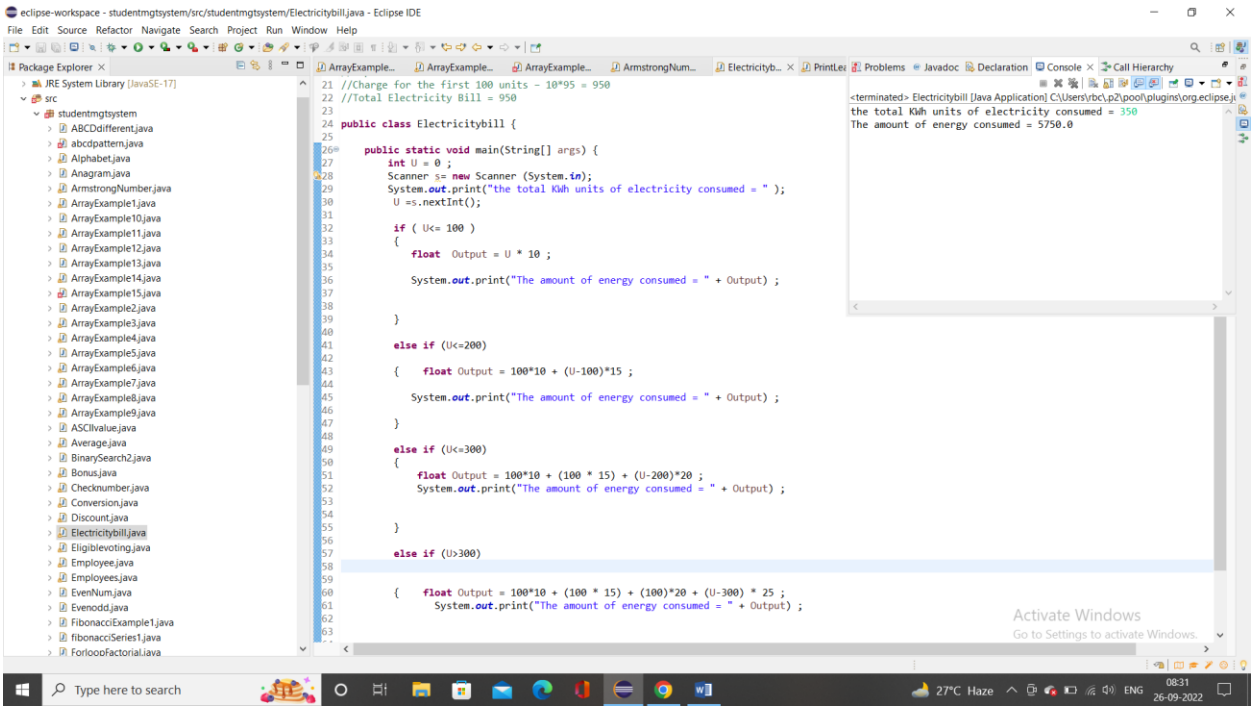
```
package studentmgtsystem;
// Given an integer U denoting the amount of KWh units of electricity consumed, the
task is to calculate the electricity bill with the help of the below charges:

import java.util.Scanner;

// 1 to 100 units – Rs. 10/unit
// 100 to 200 units – Rs. 15/unit
//200 to 300 units – Rs. 20/unit
// above 300 units – Rs. 25/unit
//Examples:
 //Input: U = 250
//Output: 3500
//Explanation:
//Charge for the first 100 units – 10*100 = 1000
//Charge for the 100 to 200 units – 15*100 = 1500
//Charge for the 200 to 250 units – 20*50 = 1000
//Total Electricity Bill = 1000 + 1500 + 1000 = 3500
//Input: U = 95
//Output: 950
//Explanation:
//Charge for the first 100 units – 10*95 = 950
//Total Electricity Bill = 950

public class Electricitybill {

	public static void main(String[] args) {
		int U = 0 ;
		Scanner s= new Scanner (System.in);
		System.out.print("the total KWh units of electricity consumed = " );
		 U =s.nextInt();

		 if ( U<= 100 )
		 {
			 float  Output = U * 10 ;

			 System.out.print("The amount of energy consumed = " + Output) ;


		 }

		 else if (U<=200)

		 {    float Output = 100*10 + (U-100)*15 ;

		    System.out.print("The amount of energy consumed = " + Output) ;

		 }

		 else if (U<=300)
		 {
			  float Output = 100*10 + (100 * 15) + (U-200)*20 ;
			  System.out.print("The amount of energy consumed = " + Output) ;
```

```
            }

            else if (U>300)


            {     float Output = 100*10 + (100 * 15) + (100)*20 + (U-300) * 25 ;
                    System.out.print("The amount of energy consumed = " + Output) ;



        }

    }

}
```

Result

the total KWh units of electricity consumed = 350

The amount of energy consumed = 5750.0



Program 5

Write a java program that define a sorted array of size N and an integer K, find the position at which K is

present in the array using binary search.

Example 1:

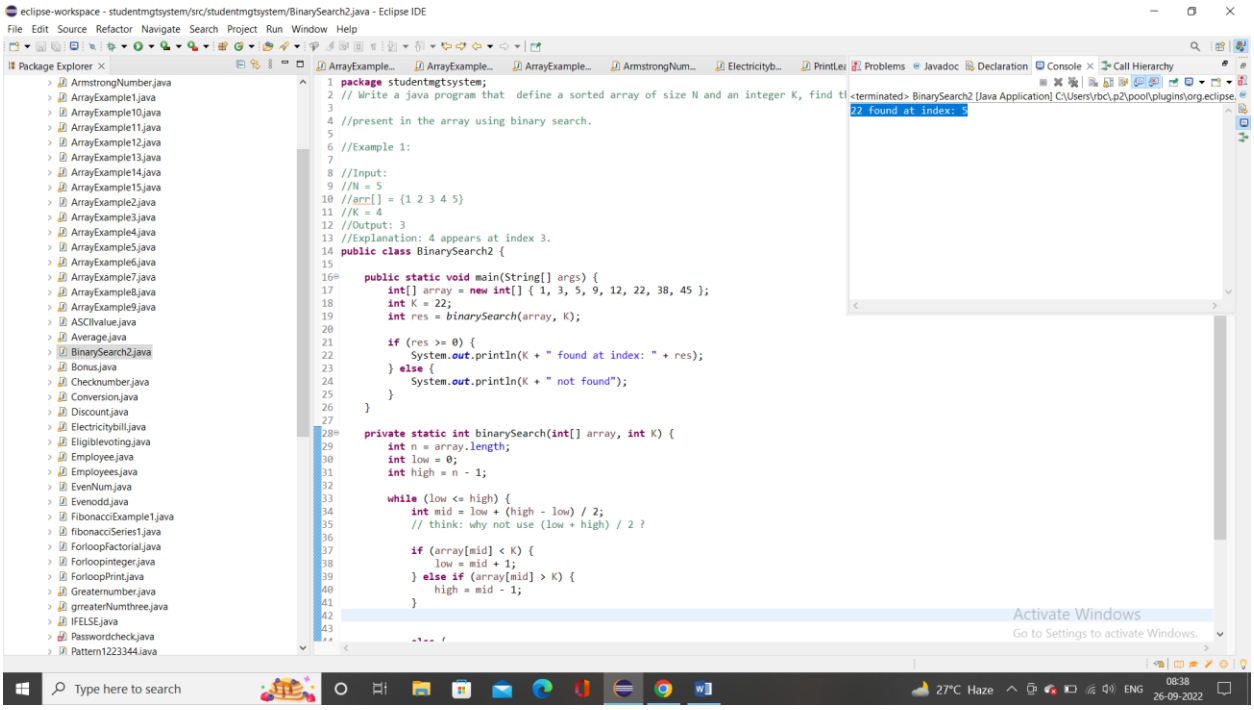
Input:
N = 5
arr[] = {1 2 3 4 5}
K = 4
Output: 3
Explanation: 4 appears at index 3.

```
package studentmgtsystem;
// Write a java program that  define a sorted array of size N and an integer K, find
the position at which K is

//present in the array using binary search.

//Example 1:

//Input:
//N = 5
//arr[] = {1 2 3 4 5}
//K = 4
//Output: 3
//Explanation: 4 appears at index 3.
public class BinarySearch2 {

	public static void main(String[] args) {
		int[] array = new int[] { 1, 3, 5, 9, 12, 22, 38, 45 };
	    int K = 22;
	    int res = binarySearch(array, K);

	    if (res >= 0) {
	        System.out.println(K + " found at index: " + res);
	    } else {
	        System.out.println(K + " not found");
	    }
	}

	private static int binarySearch(int[] array, int K) {
	    int n = array.length;
	    int low = 0;
	    int high = n - 1;

	    while (low <= high) {
	        int mid = low + (high - low) / 2;
	        // think: why not use (low + high) / 2 ?
```

```
            if (array[mid] < K) {
                low = mid + 1;
            } else if (array[mid] > K) {
                high = mid - 1;
            }


            else {
                // found K
                return mid;
            }
        }

        return -1;
    }
}
```

Result

22 found at index: 5



Program 6

write a java program and define an array, print all the elements which are leaders. A Leader is an element that is greater than all of the elements on its right side in the array.

Examples:

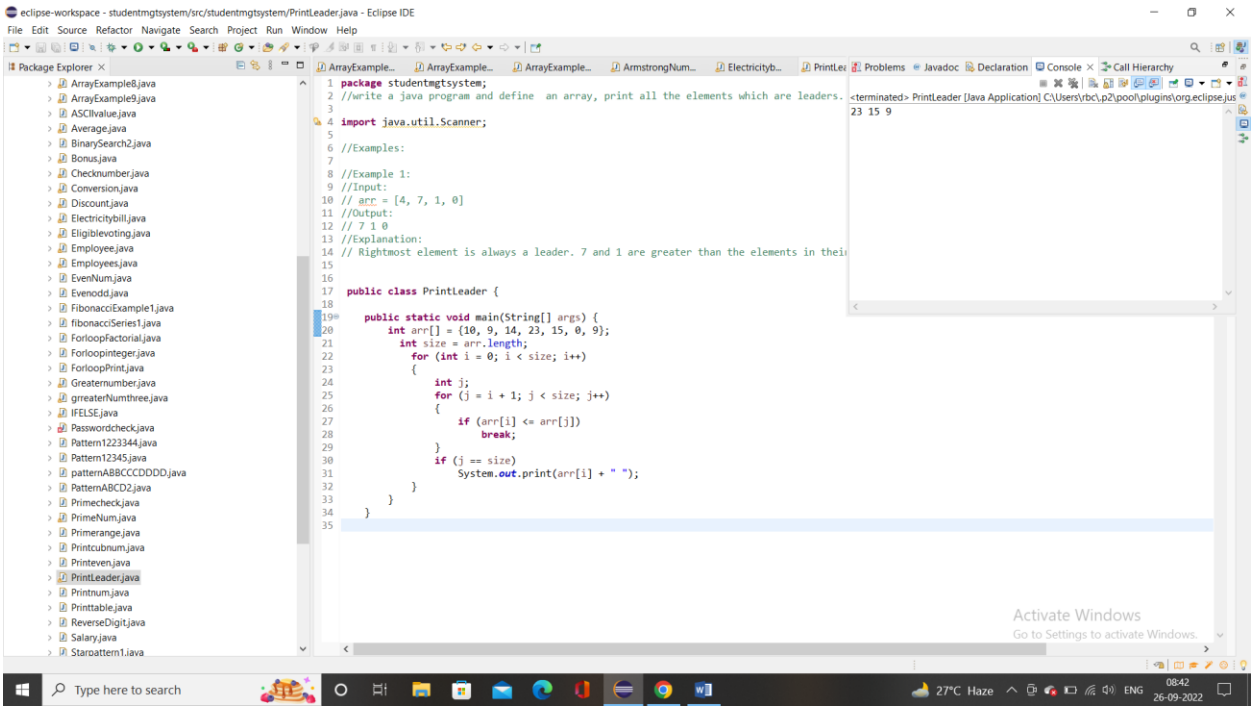
Example 1:
Input:
arr = [4, 7, 1, 0]
Output:
7 1 0
Explanation:
Rightmost element is always a leader. 7 and 1 are greater than the elements in their right side.

```
package studentmgtsystem;
//write a java program and define  an array, print all the elements which are
leaders. A Leader is an element that is greater than all of the elements on its right
side in the array.

import java.util.Scanner;

//Examples:

//Example 1:
//Input:
// arr = [4, 7, 1, 0]
//Output:
// 7 1 0
//Explanation:
// Rightmost element is always a leader. 7 and 1 are greater than the elements in
their right side.


 public class PrintLeader {

      public static void main(String[] args) {
            int arr[] = {10, 9, 14, 23, 15, 0, 9};
           int size = arr.length;
             for (int i = 0; i < size; i++)
             {
                 int j;
                 for (j = i + 1; j < size; j++)
                 {
                     if (arr[i] <= arr[j])
                         break;
                 }
                 if (j == size)
                     System.out.print(arr[i] + " ");
             }
         }
```

```
        }
```

Result –

23 , 15 , 9



Program 7

Given two strings a and b consisting of lowercase characters. The task is to check whether two given strings are an anagram of each other or not. An anagram of a string is another string that contains the same characters, only the order of characters can be different. For example, abc and bca are an anagram of each other.

Example 1:

Input:a = cdacnoida, b = ciddacnoa
Output: YES
Explanation: Both the string have same characters with same frequency. So, both are anagrams.

```java
package studentmgtsystem;
//Given two strings a and b consisting of lowercase characters. The task is to check
whether two given strings are an anagram of each other or not. An anagram of a string
is another string that contains the same characters, only the order of characters can
be different. For example,  abc  and  bca  are an anagram of each other.

//Example 1:

//Input:a = cdacnoida, b = ciddacnoa
//Output: YES
//Explanation: Both the string have same characters with
 //       same frequency. So, both are anagrams.



import java.util.Arrays;

public class Anagram {

	public static void main(String[] args) {
		String str1 = "Silent";
	    String str2 = "Listen";

	    str1 = str1.toLowerCase();
	    str2 = str2.toLowerCase();

	    // check if length is same
	    if(str1.length() == str2.length()) {

	      // convert strings to char array
	      char[] charArray1 = str1.toCharArray();
	      char[] charArray2 = str2.toCharArray();

	      // sort the char array
	      Arrays.sort(charArray1);
	      Arrays.sort(charArray2);

	      // if sorted char arrays are same
	      // then the string is anagram
	      boolean result = Arrays.equals(charArray1, charArray2);

	      if(result) {
	        System.out.println(str1 + " and " + str2 + " are anagram.");
	      }
	      else {
	        System.out.println(str1 + " and " + str2 + " are not anagram.");
	      }
	    }

	  }
}
```

Result

silent and listen are anagram.