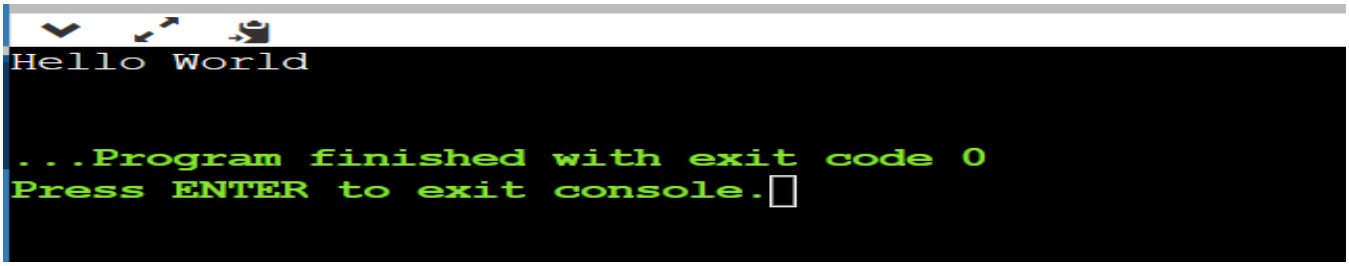
Experiment – 2

Aim : 2.1 Write a program to print “Hello World”.

Program :

```
public class Main
{
    public static void main(String[] args) {
        System.out.println("Hello World");
    }
}
```

Output :



Aim : :2.2 Write a program to print addition of two integers.

Program :

```
public class Main
{
    public static void main(String[] args) {
       int a = 5;
       int b =15;
       int add= a + b;
            System.out.println("addition : " + add);
    }
}
```

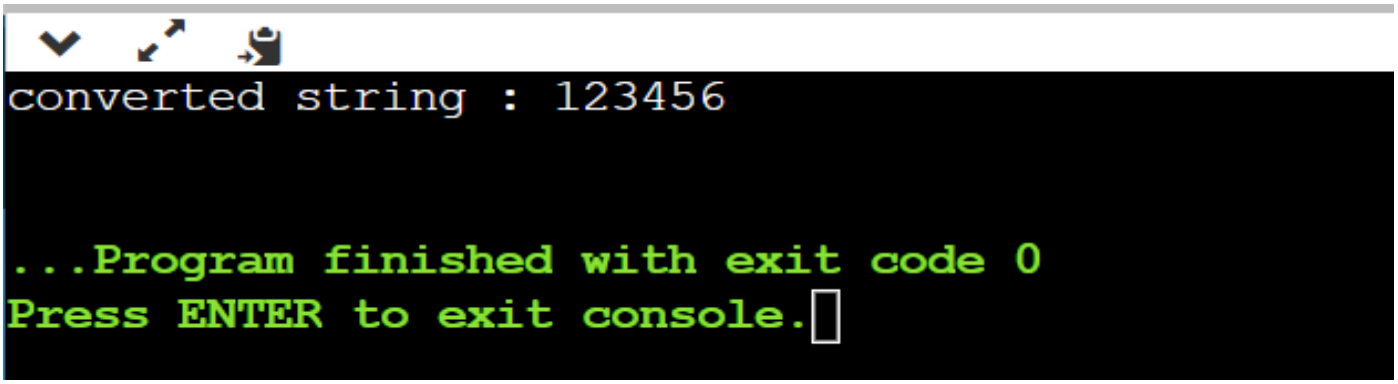
Output :

Aim : 2.3 Write a program to convert a numeric string into int.

Program :

```
public class Main
{
        public static void main(String[] args) {
          String NumericString="123456";
          int converted=Integer.parseInt(NumericString);
    System.out.println("converted string : "+converted);
        }
}
```

Output :



Aim : 2.4 Write a program to print addition of two integers input from command line

Program :

```
public class Main
{
        public static void main(String[] args) {
          int a= Integer.parseInt(args[0]);
           int b=  Integer.parseInt(args[1]);
           int c=a+b;
           System.out.println("Addition : "+ c);
        }
}
```

Output :

```
Microsoft Windows [Version 10.0.22621.2134]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Ajmal\OneDrive\Desktop\Munna>javac Main.java

C:\Users\Ajmal\OneDrive\Desktop\Munna>java Main 15 5
Addition : 20

C:\Users\Ajmal\OneDrive\Desktop\Munna>
```

Aim : 2.5 Write a program to take two integers from the command line, subtract the smaller number from the greater and print the result.

Program :

```
public class Main
{
        public static void main(String[] args) {
          int c;
           System.out.println("Enter 2 numbers : ");
    int a= Integer.parseInt(args[0]);
           int b=  Integer.parseInt(args[1]);
           if(a<b){
              c=b-a }
           else{c=a-b;}
           System.out.println("Subtraction : "+ c);
        }
}
```

Output :

```
Microsoft Windows [Version 10.0.22621.2134]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Ajmal\OneDrive\Desktop\Munna>javac Main.java

C:\Users\Ajmal\OneDrive\Desktop\Munna>java Main 20 5
Enter 2 numbers :
Subtraction : 15
```

Aim : 2.6 Write a program to take n integers from command line and print their sum of product (product of first number and last number added to product of second number and second last number and so on)

Program :

```
public class Main
{
public static void main(String[] args) {
   System.out.println("Enter the size of array : ");
   int n = Integer.parseInt(args[0]);
   int a[] = new int[n];
   System.out.println("Enter Array Elements : ");
   for(int i=0; i<n; i++)
   {
      a[i]=Integer.parseInt(args[i+1]);
   }
   int j=n-1,sum=0,i=0;
   while(i<j)
   {
      sum= sum + a[i] * a[j];
      i++;
      j--;
   if(i==j)
   {
      sum=sum+a[i];
   }
   }
   System.out.println("Sum of Product : "+sum);
        }
}
```

Output :

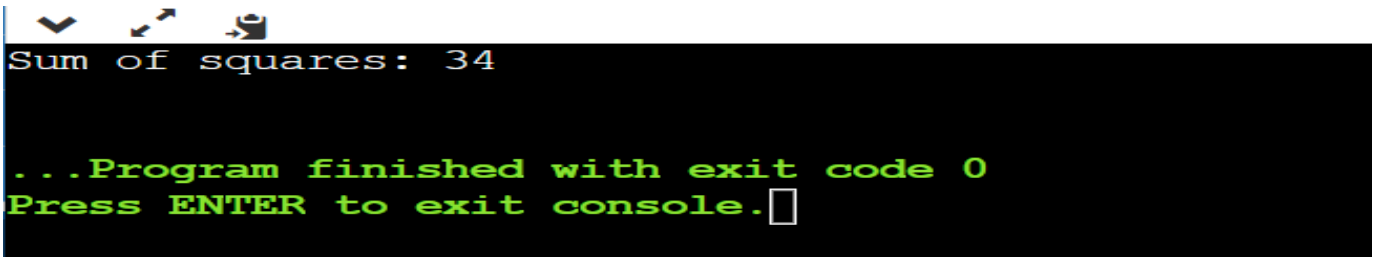
```
Microsoft Windows [Version 10.0.22621.2134]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Ajmal\OneDrive\Desktop\Munna>javac Main.java

C:\Users\Ajmal\OneDrive\Desktop\Munna>java Main 5 1 2 3 4 5
Enter the size of array :
Enter Array Elements :
Sum of Product : 16
```

Aim : 2.7 Consider any two integers. Write a program to print sum of their squares

Program :

```
public class Main {
   public static void main(String[] args) {
      int num1 = 5;
      int num2 = 3;
      int sumOfSquares = (num1 * num1) + (num2 * num2);
      System.out.println("Sum of squares: " + sumOfSquares);
   }
}
```

Output :



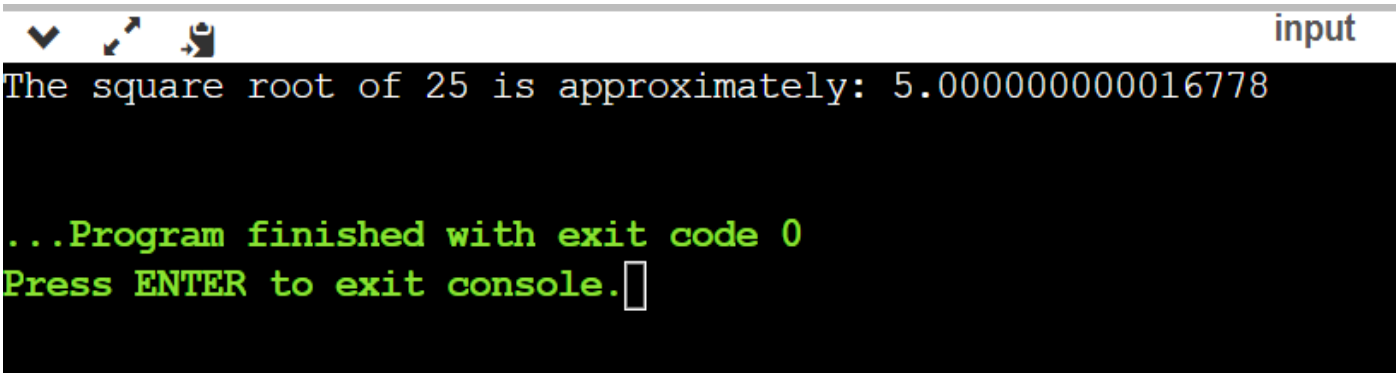
Aim :2.8 Write a program to find square root of a given positive integer using Heron's method to find square root.

Program :

```
public class Main{
   public static void main(String[] args) {
      int number = 25;
      double guess = number / 2.0;
      double epsilon = 1e-6;
```

```
        while (Math.abs(guess * guess - number) > epsilon) {
            guess = 0.5 * (guess + number / guess);
        }
        System.out.println("The square root of " + number + " is approximately: " +
    guess);
      } }
```

Output :



Aim : 2.9 Write a program to sort and print the names of students taken from command line in alphabetical order

Program :

```
import java.util.Arrays;
public class Main
{
        public static void main(String[] args) {

                String arr[]=new String[5];
                for (int i=0;i<5 ;i++ ){
                    arr[i]=args[i];
                }
    Arrays.sort(arr);
     for (int i=0;i<5 ;i++ ){
                    System.out.println(arr[i]); }
        }
}
```

Output :

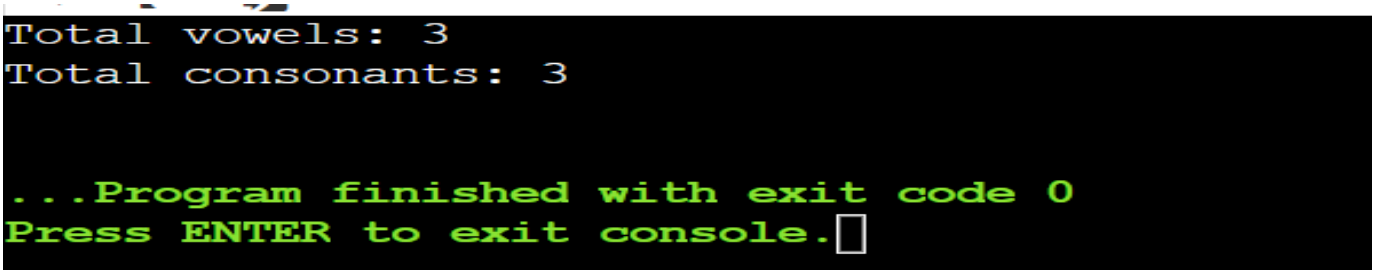
```
C:\Users\Ajmal\OneDrive\Desktop\Munna>javac Main.java

C:\Users\Ajmal\OneDrive\Desktop\Munna>java Main Faizan chunna munna guddu nargis
Faizan
chunna
guddu
munna
nargis
```

Aim : 2.10 Write a program to print total numbers of vowels and consonants in a given string

Program :

```
public class Main {
    public static void main(String[] args) {
        String input = "faizan";
        int vowelCount = 0;
        int consonantCount = 0;
        input = input.toLowerCase();
        for (int i = 0; i < input.length(); i++) {
            char c = input.charAt(i);
            if (c >= 'a' && c <= 'z') {
                if (c == 'a' || c == 'e' || c == 'i' || c == 'o' || c == 'u') {
                    vowelCount++;
                } else {
                    consonantCount++;
                }
            }
        }
        System.out.println("Total vowels: " + vowelCount);
        System.out.println("Total consonants: " + consonantCount);
    }}
```

Output :



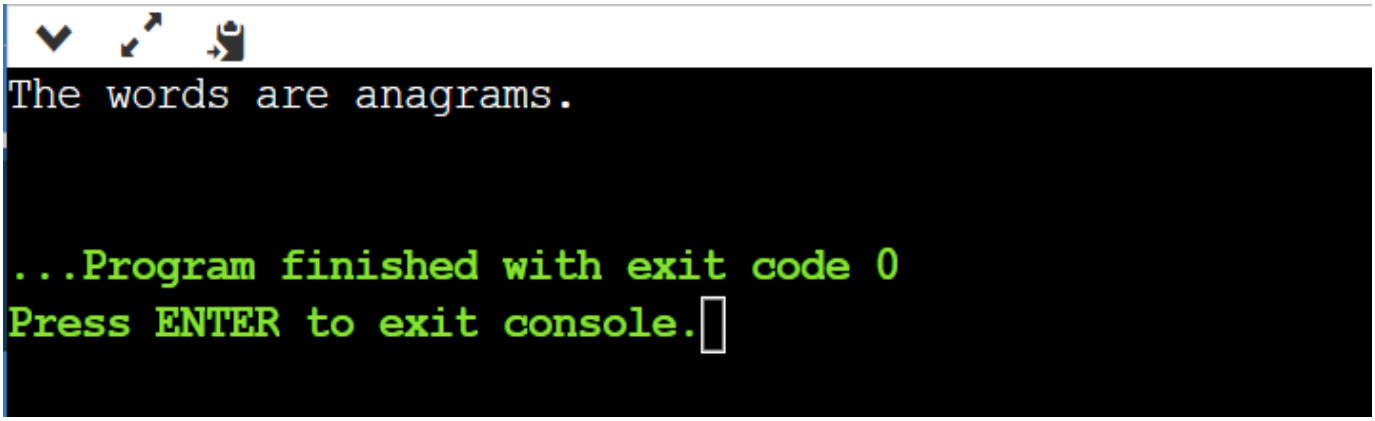
Aim : 2.11 Given two English words, write a program to check if the first word is anagram of the second word.

Program :

```
import java.util.Arrays;
public class Main {
   public static boolean areAnagrams(String word1, String word2) {
      word1 = word1.replaceAll(" ", "").toLowerCase();
      word2 = word2.replaceAll(" ", "").toLowerCase();
      if (word1.length() != word2.length()) {
         return false;
      }
      char[] charArray1 = word1.toCharArray();
      char[] charArray2 = word2.toCharArray();
      Arrays.sort(charArray1);
      Arrays.sort(charArray2);
      return Arrays.equals(charArray1, charArray2);
   }
   public static void main(String[] args) {
      String word1 = "TOM MARVOLO RIDDLE";
      String word2 = "I AM LORD VOLDEMORT";

      if (areAnagrams(word1, word2)) {
         System.out.println("The words are anagrams.");
      } else {
```

```
            System.out.println("The words are not anagrams.");}
        }}
```

Output :

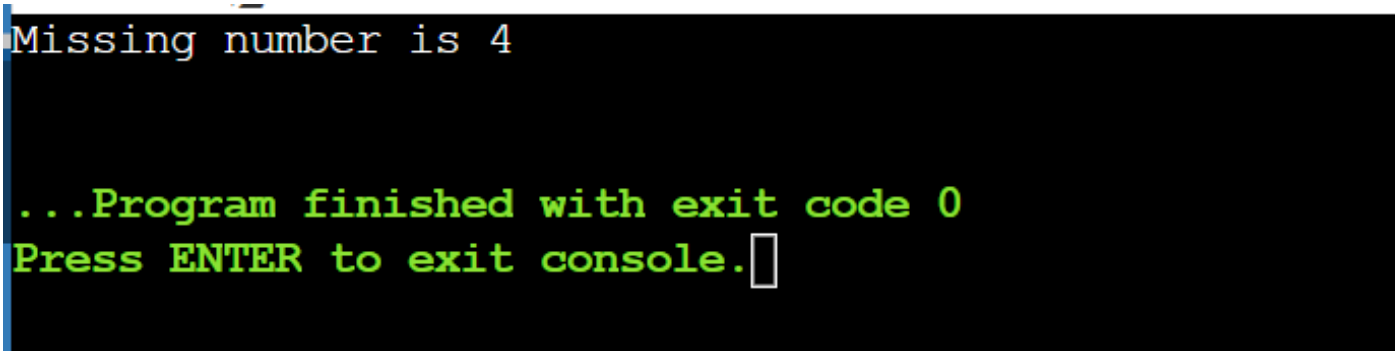


Aim : 2.12 Write a program to print a missing number in a sorted integer array.

Program :

```
public class Main {
    public static void main(String[] args) {
        int a[]={1,2,3,5,6};
        int miss=a[0];
        for(int i=0;i<5;i++){
            if(a[i]!=miss){
                break;
            }
            miss++;
        }
        System.out.println("Missing number is "+miss);
    }}
```

Output :

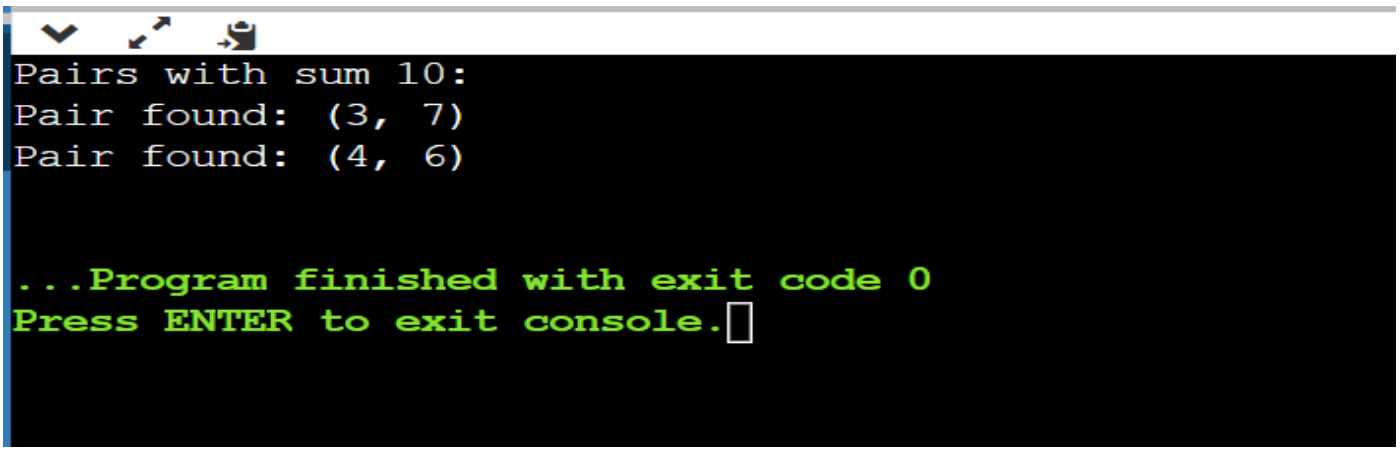


Aim : 2.13 Write a program to find all the pairs of numbers on an integer array whose sum is equal to a given number

Program :

```
public class Main {
    public static void findPairs(int arr[], int targetSum) {
        int n = arr.length;

        for (int i = 0; i < n; i++) {
            for (int j = i + 1; j < n; j++) {
                if (arr[i] + arr[j] == targetSum) {
                    System.out.println("Pair found: (" + arr[i] + ", " + arr[j] + ")");
                }
            }
        }
    }
    public static void main(String[] args) {
        int arr[] = {1, 2, 3, 4, 5, 6, 7};
        int target = 10;
        System.out.println("Pairs with sum " + target + ":");
        findPairs(arr, target);
    }}
```

Output :



Experiment – 1

Aim :How to install intellij.

Download the installer:

https://www.jetbrains.com/idea/download/

Run the installer and follow the wizard steps.

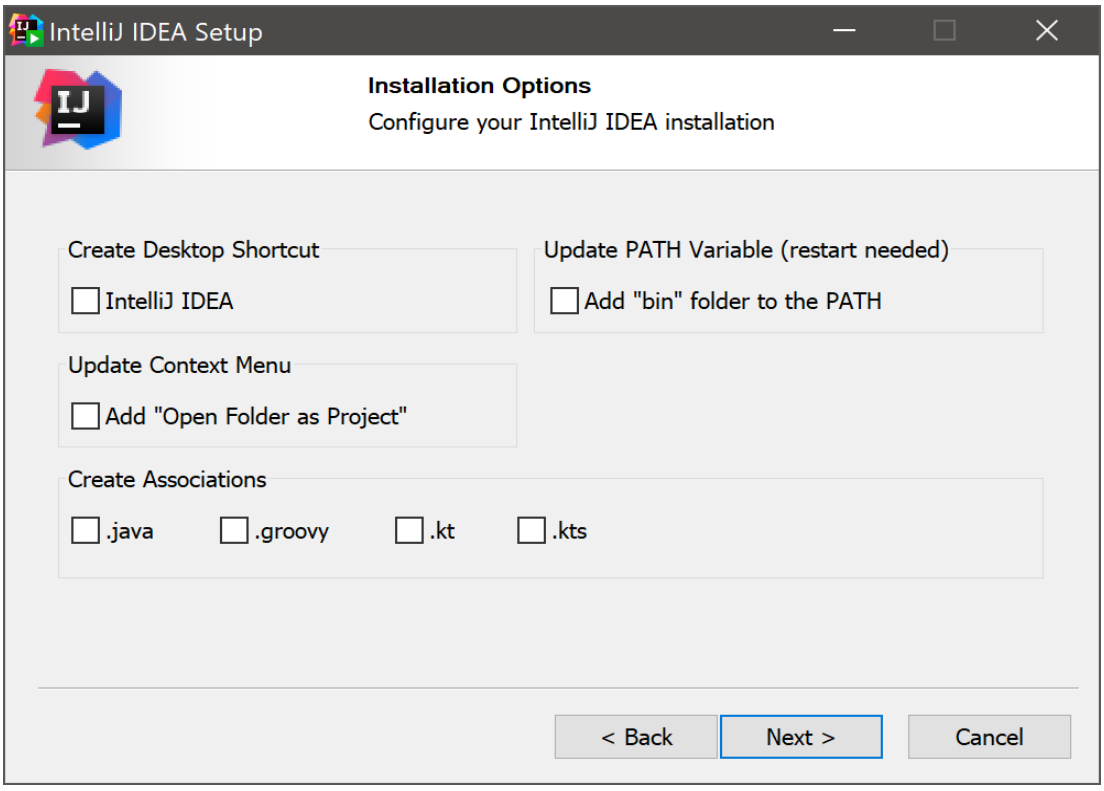
i.On the Installation Options step, you can configure the following:

ii.Create a desktop shortcut for launching IntelliJ IDEA.

iii.Add the directory with IntelliJ IDEA command-line launchers to the PATH environment variable to be able to run them from any working directory in the Command Prompt.

iv.Add the Open Folder as Project action to the system context menu (when you right-click a folder).

v.Associate specific file extensions with IntelliJ IDEA to open them with a double click.



To run IntelliJ IDEA, find it in the Windows Start menu or use the desktop shortcut. You can also run the launcher batch script or executable in the installation directory under bin.

Aim : Create a Java class Person containing two variables name and yearOfBirth of appropriate data types, take inputs from the command line argument, a method to display the name and age of the person.

Program :

```
public class Person {
    public String name;
    public int yearOfBirth;
    public Person(String name, int yearOfBirth) {
        this.name = name;
        this.yearOfBirth = yearOfBirth;
    }
    public void displayAge() {
        int age = 2023 - yearOfBirth;
        System.out.println("Name: " + name);
        System.out.println("Age: " + age + " years");
    }
    public static void main(String[] args) {
        String name = args[0];
        int yearOfBirth = Integer.parseInt(args[1]);
        Person person = new Person(name, yearOfBirth);
        person.displayAge();}}
```

Output :

```
C:\Users\Ajmal\OneDrive\Desktop\Munna>javac Main.java

C:\Users\Ajmal\OneDrive\Desktop\Munna>java Main Faizan 2006
Name: Faizan
Age: 17 years

C:\Users\Ajmal\OneDrive\Desktop\Munna>
```