```java
package AdvJava.JavaHackathon;
import java.util.Scanner;
public class FactNonRec1 {
    //find factorial of a number(non recursive)
    public static int factorial(int n) {
        int fact = 1;
        for (int i = 1; i <= n; i++) {
            fact = fact * i;
        }
        return fact;
    }

    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        System.out.println("enter value of n");
        int n = scan.nextInt();
        int result = factorial(n);
        System.out.println("Result: " + result);
    }
}
```

INPUT/OUTPUT:

```
enter value of n
10
Result: 3628800

Process finished with exit code 0
```


```java
package AdvJava.JavaHackathon;

//Q2. Consider there is a 3 Boolean variable called a, b, c. Check if at least two out of three Boolean

import java.util.Scanner;

public class BooleanTest2 {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);
        System.out.println("Please enter any three boolean values: ");
        boolean a = sc.nextBoolean();
        boolean b =sc.nextBoolean();
        boolean c =sc.nextBoolean();

        if(((a==true)&&(b==true))||((a==true)&&(c==true))||((c==true)&&(b==true))){

            System.out.println("There are atleast two true values");
        }else{
            System.out.println("There are no two true values");
        }
    }
}
```

INPUT/OUTPUT:

```
Please enter any three boolean values:
true
true
false
There are atleast two true values

Process finished with exit code 0
```

```java
package AdvJava.JavaHackathon;
import java.util.Scanner;

public class FactRecursive3 {
    public static void main(String[] args) {

            Scanner scan = new Scanner(System.in);
            System.out.println("enter value of n");
            int n = scan.nextInt();
            int result = factorial(n);
            System.out.println("Result: " + result);

    }
    public static int factorial(int num){
                if(num<=1){
                    return 1;
                }
                while(num>1) {
                return num*factorial( num: num-1);
                }

          return num;
    }
}
```

INPUT/OUTPUT:

```
enter value of n
10
Result: 3628800

Process finished with exit code 0
```


```java
package AdvJava.JavaHackathon;
//Q4. Given an array of integers, sort the integer values.
import java.util.Arrays;
import java.util.Scanner;

public class SortArray4 {

    public static void main(String[] args) {

        int[] arrayOfInt = new int[10];

        Scanner sc = new Scanner(System.in);
        System.out.println("Please enter ten integer values: ");
        for(int i=0;i<10;i++){
            arrayOfInt[i]=sc.nextInt();
        }
        Arrays.sort(arrayOfInt);
        System.out.println("The Sorted array elements: ");
        for(int j:arrayOfInt){
            System.out.println(j);
        }

    }

}
```

INPUT/OUTPUT:

```
Please enter ten integer values:
7
3
6
1
5
8
3
6
2
1
The Sorted array elements:
1
1
2
3
3
5
6
6
7
8

Process finished with exit code 0
```

```java
package AdvJava.JavaHackathon;
import java.util.Scanner;
public class IsPalindromeInt5 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Please enter a integer: ");
        String n = sc.next();
        boolean result = isPalindrome(n);
        if(result==true){ System.out.println("The number "+n+" is palindrome"); }
        else{ System.out.println("The number "+n+" is not a palindrome"); }
    }
    public static boolean isPalindrome(String num){
        StringBuilder sb = new StringBuilder(num);
        sb.reverse();
        char[] ch = num.toCharArray();
        int count=0;
        for(int i=0;i<ch.length/2;i++){
            if(ch[i]==sb.charAt(i)){
                count++;
            }
        }
        if(count==(num.length()/2)){
            return true;
        }else{
          return false;
        }
    }
}
```

INPUT/OUTPUT:

```
Please enter a integer:
32223
The number 32223 is palindrome

Process finished with exit code 0
```

```java
package AdvJava.JavaHackathon;
import java.util.*;
public class UniqueAndDuplicates6 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Please enter the total number of integers");
        int num = sc.nextInt();
        int[] arrayOfInt = new int[num];
        System.out.println("Please enter "+num+" integer values: ");
        for(int i=0;i<num;i++){ arrayOfInt[i]=sc.nextInt(); }
        Integer[] intOb = new Integer[arrayOfInt.length];
        for(int i=0;i<intOb.length;i++) { intOb[i] =(Integer) arrayOfInt[i]; }
        Set<Integer> targetSet = new HashSet<Integer>();
        Collections.addAll(targetSet, intOb);
        Iterator<Integer> it = targetSet.iterator();
        while (it.hasNext()) {
            int count=0;
            int c=(int)it.next();
            for(int j=0;j<intOb.length;j++) {
                if(c==arrayOfInt[j]){
                    count++;
                }
            }
            if(count==1){ System.out.println("The element "+c+" is unique");
            }else { System.out.println(c + " appeared " + count + " times");}
        }
    }
}
```

INPUT/OUTPUT:

```
Please enter the total number of integers
 10
Please enter 10 integer values:
5
4
3
2
3
6
1
4
2
1
1 appeared 2 times
2 appeared 2 times
3 appeared 2 times
4 appeared 2 times
The element 5 is unique
The element 6 is unique

Process finished with exit code 0
```

```java
package AdvJava.JavaHackathon;
import java.util.Scanner;
public class SelectionSort7 {
    public static void main(String[] args) throws Exception {
        Scanner sc = new Scanner(System.in);
        System.out.println("Please enter the length of the series");
        int n = sc.nextInt();
        if (n == 0) { throw new Exception();}
        int[] array = new int[n];
        System.out.println("Please enter the elements ");
        for (int i = 0; i < n; i++) { array[i] = sc.nextInt(); }
        int temp=0;
        for(int j=0;j<n-1;j++) {
            for (int i = j + 1; i < n; i++) {
                if (array[j] > array[i]) {
                    temp = array[j];
                    array[j]=array[i];
                    array[i]=temp;
                }
            }
        }
        System.out.println("The elements after sorting are as follows: ");
        for(int p:array) { System.out.println(p);}
    }
}
```

INPUT/OUTPUT:

```
Please enter the elements
2
10
8
12
5
3
7
2
10
8
The elements after sorting are as follows:
2
2
3
5
7
8
8
10
10
12

Process finished with exit code 0
```

```java
import java.util.Scanner;
public class IsPalindromeIntAndString10 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Please enter a integer or string: ");
        String s = sc.next();
        boolean result = isPalindrome(s);
        if(result==true){ System.out.println("The input "+s+" is palindrome");}else{
            System.out.println("The input "+s+" is not a palindrome"); }
    }
    public static boolean isPalindrome(String input){
        StringBuilder sb = new StringBuilder(input);
        sb.reverse();
        char[] ch = input.toCharArray();
        int count=0;
        for(int i=0;i<ch.length/2;i++){
            if(ch[i]==sb.charAt(i)){ count++;}
        }
        if(count==(input.length()/2)){ return true; }else{ return false; }
    }
}
```

INPUT/OUTPUT:

```
Please enter a integer or string:
malayalam
The input malayalam is palindrome

Process finished with exit code 0
```

```
Please enter a integer or string:
2354532
The input 2354532 is palindrome

Process finished with exit code 0
```

```java
package AdvJava.JavaHackathon;
import java.util.Scanner;
public class StringReversal11 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Please enter a string: ");
        String s= sc.nextLine();
        int size = s.length();
        char ch;
        String p = "";
        for(int i=(size-1);i>=0;i--){
                ch=s.charAt(i);
                p=p+ch;
        }
        System.out.println("The value of reversed string is: "+p);
    }
}
```

INPUT/OUTPUT:

```
Please enter a string:
java hackathon
The value of reversed string is: nohtakcah avaj

Process finished with exit code 0
```

```java
package AdvJava.JavaHackathon;
import java.util.HashMap;
import java.util.Map;
import java.util.Scanner;
public class UniqueWords12 {
    public static void main(String[] args) {
        Scanner sc =new Scanner(System.in);
        System.out.println("please enter a sentence: ");
        String s = sc.nextLine();
        String[] words = s.split( regex: " ");
        Map<String,Integer> m= new HashMap<~>();

        for(String str:words){
            if(m.containsKey(str)){
                int counter=m.get(str);
                m.put(str,++counter);
            }else{ m.put(str,1);}
        }
        System.out.println("Distinct characters:");
        for(String word : m.keySet()) {
            if(m.get(word) == 1) { System.out.println(word);}
        }
    }
}
```

INPUT/OUTPUT:

```
Please enter a string:
java hackathon
The value of reversed string is: nohtakcah avaj

Process finished with exit code 0
```

```java
package AdvJava.JavaHackathon;
import java.util.*;
public class DuplicateChar13 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Please enter a string: ");
        String s = sc.next();
        char[] ch = s.toCharArray();
        Map<Character, Integer> map = new HashMap<>();
        for(char c : ch){
            if(map.containsKey(c)) {
                int counter = map.get(c);
                map.put(c, ++counter); } else { map.put(c, 1);}
        }
        System.out.println("Duplicate characters excluding white space :");
        for(char c : map.keySet()) {
            if(map.get(c) > 1 && !Character.isWhitespace(c)) { System.out.println(c); }
        }
    }
}
```

INPUT/OUTPUT:

```
Please enter a string:
hackathon
Duplicate characters excluding white space :
a
h

Process finished with exit code 0
```

```java
package AdvJava.JavaHackathon;
import java.util.*;
public class CharacterOccurence14 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Please enter a string: ");
        String s = sc.next();
       char[] ch = s.toCharArray();
       Character[] chOb = new Character[ch.length];
       for(int i=0;i<chOb.length;i++) { chOb[i] =(Character) ch[i]; }
        Set<Character> targetSet = new HashSet<Character>();
        Collections.addAll(targetSet, chOb);
        Iterator<Character> it = targetSet.iterator();
        while (it.hasNext()) {
            int count=0;
            char c=(char)it.next();
            for(int j=0;j<chOb.length;j++) {
                if(c==ch[j]){ count++; }
            }
            System.out.println(c+" appeared "+count+" times");
        }
    }
}
```

INPUT/OUTPUT:

```
Please enter a string:
hackathon
a appeared 2 times
c appeared 1 times
t appeared 1 times
h appeared 2 times
k appeared 1 times
n appeared 1 times
o appeared 1 times

Process finished with exit code 0
```

```java
package AdvJava.JavaHackathon;
import java.util.Scanner;
public class NumUpperlower15 {
    public static void main(String[] args) {
        Scanner sc =new Scanner(System.in);
        System.out.println("Please enter the input: ");
        String s=sc.nextLine();
        int upperCaseCount=0, lowerCaseCount=0, integerCount=0;
        for(int i=0;i<s.length();i++){
            if(Character.isUpperCase(s.charAt(i))){ upperCaseCount++; }
            else if(Character.isLowerCase(s.charAt(i))){lowerCaseCount++;}
            else if(Character.isDigit(s.charAt(i))){ integerCount++; }
        }
        System.out.println("upperCaseCount: "+ upperCaseCount);
        System.out.println("lowerCaseCount: "+ lowerCaseCount);
        System.out.println("integerCount: "+integerCount);
    }
}
```

INPUT/OUTPUT:

```
Please enter the input:
Java Code 2022 April14
upperCaseCount: 3
lowerCaseCount: 10
integerCount: 6

Process finished with exit code 0
```