

# **Java Assignment -4**

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## Java Assignment - 4

Q.1 WAP to demonstrate the use of Java Packages.

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

Output:-

To compile Package Program

javac -d Hello.java

To run Package Program

java Hello\$ Hello.
Hello Aditya

Q.2 WAP using Package to add two numbers.

```
package addition;
import java.util.Scanner;
public class Add
{
    public static void main(String args[])
    {
```

```
        Scanner in = new Scanner(System.in);
        int a,b,s;
```

```
        System.out.println("Enter a");
```

```
        a = in.nextInt();
```

```
        System.out.println("Enter b");
```

```
        b = in.nextInt();
```

```
        s = a + b;
```

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```
System.out.println("Sum is "+s);
```

g

Output:-

To compile

```
javac -d . Add.java
```

To run

```
java Addition.Add
```

Enter a

10

Enter b

20

Sub is 30

Q.3 WAP using Package to import one package from another package.

```
//import1.java  
package Pack1;  
public class import1  
{  
    public void msg()  
    {
```

```
        System.out.println("Hello from Pack1");
```

g

g

To compile

```
javac -d . import1.java
```

```
//import2.java  
package Pack2;  
import Pack1.*;  
public class import2  
{
```

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```
public static void main (String args)
{
    import I obj = new import();
    obj.msg();
}
```

To compile

```
javac -d . import2.java
```

To run

```
java pack2.import2
```

Hello from pack

Q.4 WAP to demonstrate the concept of Subpackage in Java.

```
// subpackage.java
package M1;
public class subpackage
{
    public void show1()
    {
        System.out.println("Welcome to subpackage");
    }
}
```

```
// subpackages.java
package M1.M2;
public class subpackage1
{
    public void show2()
    {
        System.out.println("Welcome to subpackage1");
    }
}
```

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```
11. subpackage2.java  
import m1.m2.*;  
class subpackage2  
{  
    public static void main(System.out.String args[])  
    {  
        System.out.println("subpackage");  
        m1.m2.subpackage1 p = new m1.m2.subpackage1();  
        p.show2();  
        m1.subpackage p1 = new m1.subpackage();  
        p1.show1();  
    }  
}
```

Step 1:-

Compile subpackage.java  
javac ~~m1~~-d subpackage.java

Step 2:-

Compile -d subpackage1.java

Step 3:-

Compile -d subpackage2.java

Step 4:-

java subpackage2

Output :-

subpackage

Welcome to subpackage1

Welcome to subpackage.

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Ques | Ans. | Ques.

Q5 :- Put two classes in one package.

1/A.java

```
Package A;
Public class A {
    Public void ACT() {
        System.out.println("Hello from Package A");
    }
}
```

To compile:-

javac -d A.java

1/B.java

```
Package A;
Public class B {
    Public void BC() {
        System.out.println("Hello from Package B");
    }
}
```

To compile :- javac -d B.java

1/C.java

```
import A.*;
Public class C {
    System.out.println("A");
    A.A obj = new A.AC();
    obj.msg();
}
```

```
A.B obj = new A.BC();
obj.msg();
```

g g

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Output :-

Hello from Package A

Hello from Package B

Q.6 WAP to demonstrate static import.

```
import static java.lang.System.*;
class StaticImportExample
{
    public static void main(String args[])
    {
        out.println("Hello");
        out.println("Java");
    }
}
```

Output :-

Hello

Java

Q.7 Interface in Package.

```
// packageinterface.java
package bikes;
interface Bikes
{
    public void tiger();
    public void Kawasaki();
}
```

To ~~compile~~ compile:-

javac -d. packageinterface.java

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```
11) Packageinterface1.java  
package bikes;  
public class packageinterface1 implements Bikes  
{  
    public void tiger()  
    {  
        System.out.println("Tiger is fast");  
    }  
    public void kawasaki()  
    {  
        System.out.println("Kawasaki is Aggressive");  
    }  
    public static void main (String args[] )  
    {  
        packageinterface1 obj = new packageinterface1();  
        obj.tiger();  
        obj.kawasaki();  
    }  
}
```

To compile and run:-

```
javac -d. packageinterface1.java  
java packageinterface1
```

Kawasaki

Tiger is fast

Kawasaki is Aggressive

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Q.8 WAP to show exception occurred.

Public class P1

{ Public static void main (String args) {

System.out.println ("First Line");

System.out.println ("Division :- " + 2/0);

System.out.println ("Last Line");

}

5

Output:-

First Line

Exception in thread "main" java.lang.ArithmaticException:- / by zero  
at P1.main(P1.java:5)

Q.9. WAP to handle divide by 0 Exception.

Public class P2

{ Public static void main (String args) {

try

System.out.println ("Division " + 5/0);

} catch (ArithmaticException e) {

System.out.println ("Exception " + e.getMessage());

finally

System.out.println ("In Finally");

System.out.println ("Normal Flow");

}

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Output :-

Exception / By zero  
In Finally  
Normal flow

Q 10. WAP to show multiple catch statements.

Public class ?

{

    Public static void main(String args)  
        {  
            By

        }

            System.out.println("Division "+ 10/0);

        }

    Catch (Arith Null Pointer Exception e)

        {  
            System.out.println("Exception "+ e.getMessage());

        }

    Catch (Arithmatic Exception e)

        {  
            System.out.println("Exception "+ e.getMessage());

    Finally

        {  
            System.out.println("In finally");

        }

        System.out.println("Normal Flow");

    }

Output :-

Exception / zero  
In Finally  
Normal flow

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Q.11 WAP to show use finally keyword.

public class Q4

    public static void main(String[] args)

        try

            String ss = "Gupta";  
            System.out.println("Aditya "+ss);

    finally

        System.out.println("In Finally Block");

Output:-

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In Finally Block

Q.12 WAP to throw your exception using generalized class

public class Q4

    public static void main(String[] args)

        try

            System.out.println("Division "+ 5/0);

    catch (Exception e)

        System.out.println("Exception "+ e.getMessage());

    finally

        System.out.println("In Finally Block");

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Output :-

Exception In  
Finally Block

Q.B:- WAP to throw an Arithmetic Exception when defined after exception.

import java.util.\*;

public class P6

{ public static void main (String args)

Scanner in = new Scanner (System.in);

int balance, withdrawal;

balance = in.nextInt();

withdrawal = in.nextInt();

if (balance < withdrawal)

throw new ArithmeticException ("Insufficient Balance");

balance = balance - withdrawal;

System.out.println ("Balance Amount :- " + balance);

Output :-

5000  
10000

Exception is thrown "main" java.lang.ArithmaticException : Insufficient Balance  
at P6.main(P6.java:11)

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Q19 Write using throw keyword to catch the exception.  
import. java.util.\*;  
public class P7

{  
    public static void main(String args){}

Scanner in = new Scanner(System.in);  
int balance, withdrawal;  
balance = in.nextInt();  
withdrawal = in.nextInt();  
long

{  
    if(balance < withdrawal)

        throw new ArithmeticException("Insufficient Balance");

    balance = balance - withdrawal;

    System.out.println("Balance Amount "+ balance);

}  
catch(ArithmeticException e)

    System.out.println("Exception:- "+ e.getMessage());

    System.out.println("Normal Flow");

    }

Output

Exception:- Insufficient Balance

Normal flow.

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Q. 8 - WAP to throw checked exception.

```
import java.io.*;
public class P8
{
    public static void main (String [args])
    {
        throw new IOException();
    }
}
Output:
Exception in thread "main"
```

Q. 16 WAP to throw checked Exception using throws keyword.

```
import java.io.*;
public class P8
{
    public static void main (String [args]) throws IOException
    {
        throw new IOException();
        System.out.println ("Last Line");
    }
}
Output:
unreachable statement
System.out.println ("Last Line");
```

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Q17. = WAP to compare two strings. Using == operator and equals() function.

## Public class p1

public static void main(String [args])

String ss = "Aditya";

String s2 = "Aditya";

```
String s3 = new String("Aditya");  
if (s3 == s2)
```

if ( $s_1 == s_2$ )

System.out.println("String s1 and s2 are equal because s1 and s2 both are pointing to same string literal"),  
 $s2.equals(s1)$

`if(s2.equals(s3))` both pointing to same string literal"),

System.out.println("String s2 and s3 are equal because they have same string literal stored in it");

6

6

Outflow

String s1 and s2 can equal because s1 and s2 both are pointing to same  
String literal

String  $s_2$  and  $s_3$  can equal because they have same string literal stored in it.

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Q18:- WAP to find an element at any index.

```
import java.util.*;  
public class P2  
{
```

```
    public static void main(String args)  
    {
```

```
        Scanner in = new Scanner(System.in);  
        String s1;
```

```
        s1 = in.nextLine();
```

```
        char key;
```

```
        key = in.nextLine().charAt(0);
```

```
        int len;
```

```
        len = s1.length();
```

```
        for (int i = len - 1; i >= 0; i--)
```

```
            if (s1.charAt(i) == key)
```

```
                System.out.println("Element found at index " + i);
```

Output

Aditya

y

Element found at index 4

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Q1 :- WAP to find first and last element of string.

import java.util.\*;  
public class Q3

{  
public static void main(String args)

{  
Scanner in = new Scanner(System.in);  
String ss;

ss = in.nextLine();

int len;

len = ss.length();

System.out.println("Char at index first is " + ss.charAt(0));

System.out.println("Char at index last is " + ss.charAt(len - 1));

}  
}

Output

Activity

Char at index first is A

Char at index last is a

Q2 :- WAP to find sum of odd index.

import java.util.\*;  
public class Q4

{  
public static void main(String args)

{  
Scanner in = new Scanner(System.in);  
String ss;

ss = in.nextLine();

for (int i = 0; i < ss.length(); i++)

{  
if (i % 2 == 0)

System.out.println("Char at odd index is " + ss.charAt(i));

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}  
}

Output:-

Aditya

char at odd index is a

char at odd index is t

char at odd index is a

Q2) WAP to find the frequency of the character in string.

```
import java.util.*;
```

```
public class P65
```

```
{
```

```
    public static void main(String args)
```

```
        Scanner in = new Scanner(System.in);
```

```
        String ss;
```

```
        ss = in.nextLine();
```

```
        int count = 0;
```

```
        char key;
```

```
        key = in.nextLine().charAt(0);
```

```
        for (int i = 0; i < ss.length(); i++)
```

```
{
```

```
            if (ss.charAt(i) == key)
```

```
                count++;
```

```
}
```

```
        System.out.println("Frequency of " + key + ":" + count);
```

```
}
```

Output:-

aditya

a

Frequency of a:- 2

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Q 22. Write a program to compare length of strings.

import java.util.\*;

public class PC

{  
    public static void main(String args)

        Scanner in = new Scanner(System.in);

        String s1, s2;

        s1 = in.nextLine();

        s2 = in.nextLine();

        if(s1.compareTo(s2) == 0)

            System.out.println("Strings are equal");

        else if(s1.compareTo(s2) < 0)

            System.out.println("s1 is smaller");

        else if(s1.compareTo(s2) > 0)

            System.out.println("s2 is greater");

}

g

Output =

Aditya

Aditya

Strings are equal.

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Q-23  $\underline{\underline{g}}$  WAP to concatenate multiple strings

Public class concat

{  
    Public static void main(String args)

        String s1 = "Aditya";

        String s2 = "Kumar";

        String s3 = "Gupta";

        String s4 = s1.concat(s2).concat(s3),

            System.out.println(s4);

}

Output:-

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Q-24  $\underline{\underline{g}}$  WAP to find the sequence of characters in a string literal.

Class contains

{  
    Public static void main(String args)

{  
        String s1 = "My Name is Aditya";

        System.out.println(~~s1~~.contains("Aditya"));

}  
}

Output:-

True

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Q-25 WAP to find consonant character in.

public class Consonant

{  
    public static void main (String [args])

{  
        String str = "Hello Aditya";

        boolean isConsonant = str.contains ("Aditya");

        System.out.println (str.contains ("Aditya"));

Output =

false

Q-26 WAP to check whether a string ends with an end character or not.

public class EndsWith

{  
    public static void main (String [args])

{  
        String ss = "Aditya";

        System.out.println (ss.endsWith ("a"));

Output =

true

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Q.27 :- WAP to check whether strings are equal irrespective of case.

Public class EqualIgnore

Public static void main (String args[])

{  
String s1 = "Aditya";

String s2 = " ADITYA";

System.out.println(s1.equalsIgnoreCase(s2));

System.out.println(s1.equalsIgnoreCase(s2));

Output:-

True

True.

Q.28 :- WAP to find the ASCII value of all the characters present in the string.

Public class GetByte

{  
Public static void main (String args[])

{  
String s1 = "ABCDEG";

byte [] b = s1.getBytes();

for (int i=0; i<b.length; i++)

System.out.println(b[i]);

Output:-  
65      69  
66      70  
67      71  
68

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Q. 2 :- WAP of java applet to design a plus calculator.

```
import java.applet.Applet;  
import java.awt.event.*;  
import java.awt.*;
```

At <applet code = "MyApplet1.java" width = 300 height = 300 > </applet > \*

Public class MyApplet1 extends Applet

```
{  
    Label l1, l2, l3;  
    TextField t1, t2;  
    Button button;  
    Public void init()  
{
```

```
        l1 = new Label("First Number");  
        l2 = new Label("Second Number");  
        l3 = new Label();  
        t1 = new TextField();  
        t2 = new TextField();  
        button = new Button("Add");  
        setLayout(null);  
        l1. setBounds(30, 50, 100, 20);  
        l2. setBounds(30, 100, 100, 20);  
        l3. setBounds(150, 50, 100, 20);  
        t1. setBounds(150, 100, 80, 20);  
        t2. setBounds(150, 150, 80, 20);  
        button. setBounds(100, 150, 80, 20);  
        l3. setBounds(30, 180, 100, 20);  
        add(t1);  
        add(l2);  
        add(l1);  
        add(l3);  
        add(button);  
        add(t2);  
        add(button);
```

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```
button.addActionListener(new MyHandler());
```

{

```
public class MyHandler implements ActionListener
```

{

```
public void actionPerformed(ActionEvent e)
```

{  
 int a,b,s;

a=Integer.parseInt(t1.getText());

b=Integer.parseInt(t2.getText());

s=a+b;

t3.setText("Sum Is "+s);

{

{  
}

Q. 3<sup>o</sup>- WAP in Java Applet to show name.

```
import java.applet.Applet;
```

```
import java.awt.*;
```

```
public class MyApplet extends Applet
```

{  
 public void paint(Graphics g){  
 g.drawString("Aditya Kumar Gupta", 100, 100);{  
 }

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