

## Java Assignment - 4

Q.1 WAP to demonstrate the use of Java ~~Pattern~~ Package.

```
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.

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

```
2) 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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Q5 :- Put two classes in one package.

1/A.java

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

To compile:-

javac -d A.java

1/B.java

```
Package A;
public class B {
    public void msg() {
        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.A();

obj.msg();

A.B obj = new A.B();

obj.msg();

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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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```
1) 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 :- " + 3/0);

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");

5

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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 (ArithmeticException 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 Q11

{ public static void main(String[] args)

{ try

{ System.out.println("Gupta");  
System.out.println("Aditya"+s);  
}

finally

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

Object:-

Aditya Gupta

In Finally Block

Q.12 WAP to throw your exception using generalized class

public class Q12

{ 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 Amoned :- " + balance);
```

Output :-

5000  
10000

Exception in thread "main"

at P6.main (P6.java:11)

java.lang.ArithmaticException: Insufficient Balance

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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, withdrawl;  
balance = in.nextInt();  
withdrawl = in.nextInt();  
long

{  
    if(balance < withdrawl)

        throw new ArithmeticException("Insufficient Balance");

    balance = balance - withdrawl;

    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 = "Adopted";

String s2 = "Aditya";

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

(-52)  
System

System.out.println("String s1 and s2 are equal because s1 and s2 both are pointing to same string literal"),  
 $s2.equals(s3)$

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

System and prints ("Strings s2 and s3 are equal because they have same string literal stored inside"),

6

6

Outflow

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

String s2 and s3 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;
```

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

```
    char key;
```

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

```
    int len;
```

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

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

```
{
```

```
    if (ss.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 character at 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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G

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 Q 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 Q 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 case sensitive character in.

public class CaseSensitive

{  
    public static void main (String [args])

{  
        String str = "Hello Aditya";

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

        System.out.println (isContains);

Output =

From  
false

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

public class EndWith

{  
    public static void main (String [args])

{  
        String ss = "Aditya";

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

Output =

false

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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(s3));

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  
66  
67  
68 | 69  
68 | 70  
68 | 71

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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(e.getSource().getLabel());

b= Integer.parseInt(e.getSource().getLabel());

s=a+b;

l3.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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