

**(Established under the Presidency University Act, 2013 of the Karnataka Act 41 of 2013)**

**Course Code : CSE1006 Course Title : Problem solving using java**

**Program 1)**

// demo of how to create package

// save the below program as Packdemo.java

package Ahmed;

public class Packdemo {

public void show() {

System.out.println("Welcome to Presidency University");

}}

//If you are not using any Eclipse IDE, follow the syntax given below:

// compile the above program using the command

// javac –d **.** Packdemo.java

// -d means destination to place generated class files “.” means current working directory.

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**Program 2)**

// demo of how to import the package

// save the below program as Pack1.java, compilation procedure is as usual

import Ahmed.Packdemo;

import java.lang.Scanner;

class Pack1

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

Packdemo obj=new Packdemo();

obj.show();

}

}

// Compile: javac Pack1.java

// Run : java Pack1

// Activity for students: you can practice few problems on packages.

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**Program 3)**

// demo of division by zero error using exception handling

class Exception1 {

public static void main(String args[]) {

try{

int result=26/0;

System.out.println("result is " +result);

}

catch(ArithmeticException e)

{

System.out.println("in side of catch block : "+e);

}

System.out.println("end of main, normal flow of the program ");

}

}

**output:**

in side of catch block : java.lang.ArithmeticException: / by zero

end of main, normal flow of the program

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**Program 4)**

// demo of array boundary violation error

class Exception2

{

public static void main(String args[])

{

int marks[]= {11,22,33,44,55};

try {

System.out.println("element is " +marks[6]); // accessing 6th index element, error

}

catch(ArrayIndexOutOfBoundsException e)

{

System.out.println("in side of catch block : "+e);

}

System.out.println("end of main");

}

}

**Output:**

in side of catch block : java.lang.ArrayIndexOutOfBoundsException: Index 6 out of bounds for length 5

end of main

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**Program 5)**

// demo of multiple catch blocks

class Exception3

{

public static void main(String args[])

{

int marks[]= {11,22,33,44,55};

try {

int result=26/0;

System.out.println("result is " +result);

System.out.println("element is " +marks[6]);

}

catch(ArithmeticException e)

{

System.out.println("in side of catch block : "+e);

// or you can use printStackTrace() method also

// e.printStackTrace();

}

catch(ArrayIndexOutOfBoundsException e)

{

System.out.println("in side of catch block : "+e);

}

System.out.println("end of main");

}

}

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Activity : in the above program write the try block as follows, execute the program and check the output.

try {

System.out.println("element is " +marks[6]);

int result=26/0;

System.out.println("result is " +result);

}

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**Finally Block in Java | Finally Keyword in Java :**

A “finally” in Java is a keyword used to create a block of code that follows a try or catch block. A finally block contains all the crucial codes such as closing connections, stream, etc. that is always executed whether an exception occurs within a try block or not.

When finally block is attached with a [try-catch block](https://www.scientecheasy.com/2020/09/java-try-catch-block.html/), it is always executed whether the catch block has handled the exception thrown by try block or not.

Note:

Some important rules of using finally block or clause are:

1. A finally block is optional but at least one of the catch or finally block must exist with a try.

2. It must be defined at the end of last catch block. If finally block is defined before a catch block, the program will not compile successfully.

**Program 6)**

// demo of finally block

class Exception4

{

public static void main(String args[])

{

int marks[]= {11,22,33,44,55};

try {

int result=26/0;

System.out.println("result is " +result);

System.out.println("element is " +marks[6]);

}

catch(ArithmeticException e)

{

System.out.println("in side of catch block : "+e);

}

finally {

System.out.println("in side of finally block ");

}

System.out.println("end of main");

}

}

**Output:**

in side of catch block : java.lang.ArithmeticException: / by zero

in side of finally block

end of main

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