## Part B

1. User defined package

**package** userdefined.pack;

**public** **class** Square\_cube {

**public** **int** Cube(**int** r) {

**return** r\*r\*r;

}

**public** **int** Square(**int** r) {

**return** r\*r;

}

}

**package** userdefined.pack1;

**import** java.util.Scanner;

**import** userdefined.pack.Square\_cube;

**class** Calculate {

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner (System.***in***);

System.***out***.println("Enter the value");

**int** val = sc.nextInt();

Square\_cube sq = **new** Square\_cube();

**int** c = sq.Cube(val);

**int** p = sq.Square(val);

System.***out***.println("Cube"+c);

System.***out***.println("Square"+p);

}

}

1. Abstract class and method

**package** JP;

**abstract** **class** Figure {

**double** dim1;

**double** dim2;

Figure(**double** a, **double** b) {

dim1 = a;

dim2 = b;

}

**abstract** **double** area();

}

**class** Rectangle **extends** Figure {

Rectangle(**double** a, **double** b) {

**super**(a, b);

}

**double** area() {

System.***out***.println("Inside Area for Rectangle.");

**return** dim1\* dim2;

}

}

**class** Triangle **extends** Figure {

Triangle(**double** a, **double** b) {

**super**(a, b);

}

**double** area() {

System.***out***.println("Inside Area for Triangle.");

**return** dim1\* dim2/2;

}

}

**public** **class** AbstractAreas {

**public** **static** **void** main(String[] args) {

Rectangle r = **new** Rectangle(9, 5);

Triangle t = **new** Triangle(10, 8);

Figure figref;

figref = r;

System.***out***.println("Area is " + figref.area());

figref = t;

System.***out***.println("Area is " + figref.area());

}

}

1. Array Group

**package** JP;

**import** java.io.\*;

**class** Employee {

**int** id;

String name;

Employee (**int** i, String n)

{

id=i;

name = n;

}

**void** displayData()

{

System.***out***.println(id+"\t"+name);

}

}

**public** **class** ArrayGroup {

**public** **static** **void** main(String args[]) **throws** IOException {

BufferedReader br = **new** BufferedReader (**new**

InputStreamReader(System.***in***));

Employee arr[] = **new** Employee [5];

**for** (**int** i=0; i<5; i++)

{

System.***out***.print("Enter id: ");

**int** id = Integer.*parseInt*(br.readLine());

System.***out***.print("Enter name: ");

String name = br.readLine();

arr[i] = **new** Employee (id,name);

}

System.***out***.println("\nThe employee data is: ");

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

arr[i].displayData();

}

}

1. MyException

**package** JP;

**import** java.util.\*;

**class** AmountLessThanRequiredException **extends** Exception {

String msg;

AmountLessThanRequiredException(String msg) {

**super**(msg);

}

}

**public** **class** MyException {

**public** **static** **void** main(String[] args) {

System.***out***.println("Enter the amount");

Scanner sc=**new** Scanner(System.***in***);

**int** withdrawAmount = sc.nextInt();

**try** {

**if**(withdrawAmount<=0) {

**throw** **new** AmountLessThanRequiredException("Entered amount less than minimum withdrawal limit");

}

System.***out***.println("WithDrawn amount is "+withdrawAmount);

}

**catch**(AmountLessThanRequiredException ex) {

System.***out***.println("Userdefined exception");

System.***out***.println(ex.getMessage());

}

}

}

17)Thread

**package** JP;

**class** Thread1 **extends** Thread

{

**public** **void** run()

{

**while**(**true**)

{

System.***out***.println("Good morning");

**try**

{

Thread.*sleep*(1000);

}

**catch**(InterruptedException e)

{

}

}

}

}

**class** Thread2 **extends** Thread

{

**public** **void** run()

{

**while**(**true**)

{

System.***out***.println("Hello");

**try**

{

Thread.*sleep*(2000);

}

**catch**(InterruptedException e)

{

}

}

}

}

**class** Thread3 **extends** Thread

{

**public** **void** run()

{

**while**(**true**)

{

System.***out***.println("Welcome");

**try**

{

Thread.*sleep*(3000);

}

**catch**(InterruptedException e)

{

}

}

}

}

**public** **class** ThreadPgm {

**public** **static** **void** main(String[] args) {

Thread1 t1 =**new** Thread1();

Thread2 t2=**new** Thread2();

Thread3 t3=**new** Thread3();

System.***out***.println();

t1.start();

t2.start();

t3.start();

}

}

1. File input / output

**package** JP;

**import** java.io.File;

**import** java.io.FileInputStream;

**import** java.io.FileOutputStream;

**import** java.io.IOException;

**public** **class** FileInputSt {

**public** **static** **void** main(String[] args) **throws** IOException {

File file=**new** File("C:\\users\\HP\\Desktop\\input.txt");

**boolean** result= file.createNewFile();

System.***out***.println("File created ");

String data= "Writing Sample data to input text file.";

**try**

{

FileOutputStream output = **new** FileOutputStream("C:\\Users\\HP\\Desktop\\input1.txt");

**byte**[] array = data.getBytes();

System.***out***.println("Writing data");

output.write(array);

output.close();

System.***out***.println("Written success");

System.***out***.println("------");

}

**catch**(Exception e) {

e.getStackTrace();

}

**try**

{

FileInputStream input = **new** FileInputStream("C:\\Users\\HP\\Desktop\\input1.txt");

System.***out***.println("Reading the Data from the file input: ");

System.***out***.println("Contents of file");

System.***out***.println("--------");

**int** i = input.read();

**while**(i!=-1){

System.***out***.print((**char**)i);

i=input.read();

}

input.close();

}

**catch** (Exception e)

{

e.getStackTrace();

}

}

}

20)Applet

**package** JP;

**import** java.applet.\*;

**import** java.awt.Graphics;

**import** java.awt.\*;

**public** **class** AppletLife1 **extends** Applet {

**public** **void** init() {

setBackground(Color.BLUE);

System.***out***.println("init() is invoked");

}

**public** **void** start() {

System.***out***.println("Start() is invoked");

}

**public** **void** paint(Graphics g) {

System.***out***.println("Paint() is invoked");

}

**public** **void** stop() {

System.***out***.println("Stop() is invoked");

}

**public** **void** destroy() {

System.***out***.println("Destroy() is invoked");

}

}

<!DOCTYPE html>

<html>

<head>

<title>Applet Example</title>

</head>

<body>

<applet code="AppletLife1.class" width="300" height="200">

Applet demo <code>applet</code> tag.

</applet>

</body>

</html>