31. Write a program in java to enter the number through command line argument if first and second number is not entered it will generate the exception. Also divide the first number with second number and generate the arithmetic exception

PROGRAM

import java.io.\*;

class ArgumentException extends Exception

{

}

class NumberException extends Exception

{

}

class Arithmain

{

public static void main(String args[])

{

int n1,n2,sum;

try

{

if(args.length==2)

{

n1=Integer.parseInt(args[0]);

n2=Integer.parseInt(args[1]);

if(n2==0 || n1<n2)

{

throw new NumberException();

}

else

{

sum=n1/n2;

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

}

}

else

{

throw new ArgumentException();

}

}

catch(NumberException e)

{

System.out.println("please enter valid input number");

}

catch(ArgumentException e)

{

System.out.println("please enter input through commandline");

}

}}

32. Write a program in java if number is less than 10 and greater than 50 it generates the exception out of range. Else it displays the square of number.

import java.io.\*;

class RangeException extends Exception

{

int n1,res;

RangeException(String s)

{

super(s);

}

void check() throws IOException

{

try

{

BufferedReader ob=new BufferedReader(new InputStreamReader(System.in));

System.out.println("enter a number");

n1=Integer.parseInt(ob.readLine());

if(n1<10 || n1>50)

{

throw new RangeException("enter number within the range of 10 and 50");

}

else

{

res=n1\*n1;

System.out.println("Square is:"+" "+res);

}

}

catch(RangeException e)

{

System.out.println(e);

}

}

}

class Rangemain

{

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

{

RangeException r=new RangeException(" ");

r.check();

}}

33. Write a java program that implements a multi-thread application that has three threads. First thread generates random integer every 1 second and if the value is even, second thread computes the square of the number and prints. If the value is odd, the third thread will print the value of cube of the number.

import java.util.\*;

class Even extends Thread

{

int n;

Even(int n)

{

this.n=n;

}

public void run()

{

System.out.println("Square of "+" "+n+" "+"is"+" "+n\*n);

}

}

class Odd extends Thread

{

int n;

Odd(int n)

{

this.n=n;

}

public void run()

{

System.out.println("Cube of"+" "+n+" "+"is"+" "+n\*n\*n);

}

}

class Randomnumber extends Thread

{

int n;

int t,i;

public void run()

{

Scanner ob=new Scanner(System.in);

System.out.println("enter number of times you want to play");

t=ob.nextInt();

Random r=new Random();

try

{

for(i=0;i<t;i++)

{

n=r.nextInt(30);

System.out.println("random number is"+" "+n);

if(n%2==0)

{

Even e=new Even(n);

e.start();

}

else

{

Odd o=new Odd(n);

o.start();

}

Thread.sleep(1000);

}

}

catch(InterruptedException e)

{

}

}

}

class Randmain

{

public static void main(String args[])

{

Randomnumber r=new Randomnumber();

r.start();

}

}

34. Write a java program to implement runnable thread.(display uppercase letters and lowercase letters)

import java.io.\*;

class Upper implements Runnable

{

char ch;

public void run()

{

for(ch= 'A' ; ch <= 'Z' ; ch++)

{

System.out.println(ch);

try

{

Thread.sleep(1000);

}

catch(InterruptedException e)

{

}

}}}

class Lower implements Runnable

{

char ch;

public void run()

{

for(ch= 'a' ; ch <= 'z' ; ch++)

{

System.out.println(ch);

try

{

Thread.sleep(500);

}

catch(InterruptedException e)

{

}}}}

class Alphamain

{

public static void main(String args[])

{

Upper u=new Upper();

Lower l=new Lower();

Thread t1=new Thread(u);

Thread t2=new Thread(l);

t1.start();

t2.start();

}

}

35. Write a program to find the multiplication of 5 and 10 using thread concepts.

import java.io.\*;

class Five extends Thread

{

int i;

public void run()

{

for(i=1;i<=10;i++)

{

System.out.println("5"+"\*"+i+" ="+" "+5\*i);

}

try

{

Thread.sleep(1000);

}

catch(InterruptedException e)

{

System.out.println(e);

}

}

}

class Ten extends Thread

{

int i;

public void run()

{

for(i=1;i<=10;i++)

{

System.out.println("10"+"\*"+i+" ="+" "+5\*i);

}

try

{

Thread.sleep(1000);

}

catch(InterruptedException e)

{

System.out.println(e);

}

}

}

class Multimain

{

public static void main(String args[])

{

Five f=new Five();

Ten t=new Ten();

f.start();

t.start();

}

}