//Java EX 6- Exception Handling

//Programmed by AUMRUDH LAL KUMAR TJ

//PGM 1

imaumrudh@Aumrudh-PC:~/java/ex6/pgm1$ cat Test.java

import java.lang.\*;

/\*\*Tthis program demonstrate exception handled when number of arguments is less than five.

If less than five it throws exception else it prints product.

@author Aumrudh

@since 2020-01-30

\*/

class CheckArgument extends Exception{

public void display(){

System.out.println("Number of Arguments is less than 5");

}

}

public class Test{

public static void main(String args[]){

int ans=1;

int s=args.length; //getting number of inputs from command line using built in function

int a[]=new int[5];

try{ //try block

if(args.length<5){

//if less than 5 then throw exception

throw new CheckArgument();

}

else{

//else print product

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

a[i]=Integer.parseInt(args[i]);

ans\*=a[i];

}

}

System.out.println("Product : "+ans);

}

catch(CheckArgument e){

e.display();

}

}

}

imaumrudh@Aumrudh-PC:~/java/ex6/pgm1$ java Test 1 2 3 4 5

Product : 120

imaumrudh@Aumrudh-PC:~/java/ex6/pgm1$ java Test 1 2 3 4

Number of Arguments is less than 5

//pgm2

imaumrudh@Aumrudh-PC:~/java/ex6/pgm2$ cat Test.java

import java.lang.\*;

class RangeException extends Exception{

public void display(){

System.out.println("Marks out of range");

}

}

/\*\*This program demonstrate exception handled when marks in arguments is <0 and >100.

If invalid it throws exception else it print average and total.

@author Aumrudh

@since 2020-01-30

\*/

public class Test{

public static void main(String args[]){

int tot=0;

double avg=0.0;

String name=args[0];

int m[]=new int[6];

for(int i=1;i<args.length;i++){

m[i]=Integer.parseInt(args[i]);

}

//try block

try{

for(int i=1;i<=5;i++){

if(m[i]>100||m[i]<0){

throw new RangeException();

}

else{

tot+=m[i];

}

}

avg=tot/5;

System.out.println("Total is : "+tot);

System.out.println("Average is "+avg);

}

//exception catched and displayed

catch(RangeException e){

e.display();

}

}

}

imaumrudh@Aumrudh-PC:~/java/ex6/pgm2$ java Test lal 100 100 100 100 100

Total is : 500

Average is 100.0

imaumrudh@Aumrudh-PC:~/java/ex6/pgm2$ java Test lal 100 100 100 100 101

Marks out of range

//pgm3

imaumrudh@Aumrudh-PC:~/java/ex6/pgm3$ cat Test.java

import java.lang.\*;

import java.util.Scanner;

class InsufficientFundException extends Exception{

public void display(){

System.out.println("Insufficient balance");

}

}

class CheckingAccount{

//withdraw method using try and catch

public static void withdraw(int a,int bal){

//try block

try{

int diff=bal-a;

if(bal<1000||diff<1000){

throw new InsufficientFundException();

}

else{

bal=diff;

System.out.println("Can withdraw\nNew Balance : "+bal);

}

}

catch(InsufficientFundException e){

e.display();

}

}

}

class BankDemo{

//has constructor and balance as field and withdraw and deposit method.

private int balance;

public BankDemo(int balance){

this.balance=balance;

}

public void WD(int a){

CheckingAccount.withdraw(a,balance);

}

public void deposit(int amnt){

balance+=amnt;

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

}

}

public class Test{

public static void main(String args[]){

BankDemo obj=new BankDemo(1000);

while(true){

System.out.print("1-Deposit\n2-Withdraw\nEnter choice : ");

Scanner ip=new Scanner(System.in);

int ch=ip.nextInt();

if(ch==1){

System.out.print("Enter deposit amount : ");

int a=ip.nextInt();

obj.deposit(a);

}

if(ch==2){

System.out.print("Enter withdrawal amount : ");

int a=ip.nextInt();

obj.WD(a);

}

else{

//System.out.println("Wrong Choice");

}

}

}

}

imaumrudh@Aumrudh-PC:~/java/ex6/pgm3$ java Test

1-Deposit

2-Withdraw

Enter choice : 1

Enter deposit amount : 2000

Balance : 3000

1-Deposit

2-Withdraw

Enter choice : 2

Enter withdrawal amount : 5000

Insufficient balance

1-Deposit

2-Withdraw

Enter choice : 2

Enter withdrawal amount : 1000

Can withdraw

New Balance : 2000

imaumrudh@Aumrudh-PC:~/java/ex6/pgm4$ cat Test.java

import java.lang.\*;

import java.util.\*;

import java.lang.reflect.\*;

class A{

/\*\*This program demonstrate exception handled for various exceptions.

@author Aumrudh

@since 2020-01-30

\*/

private int num;

public void v(int a){

try{

if(a<0){

throw new IllegalArgumentException("Number less than 0");

}

else

num=a;

}

catch(IllegalArgumentException e){

System.out.println("Number less than 0");

}

}

public int getNum(){

return this.num;

}

}

public class Test{

public void show(){

System.out.print("Hi");

}

public static void main(String args[]){

Scanner ip=new Scanner(System.in);

A Aobj=new A();

while(true){

System.out.print("1-Divide by Zero\n2-InputMisMatch\n3-Illegalaccess\n4-NOsuchMethod\n");

System.out.print("5-IllegalArgumentException\nEnter your choice : ");

int ch=ip.nextInt();

if(ch==1){

System.out.print("Enter two Number : ");

int a=ip.nextInt();

int b=ip.nextInt();

try{

int c=a/b;

System.out.println("Anwer : "+c);

}

catch(ArithmeticException e){

System.out.println("Handled divide by zero exception ");

}

}

if(ch==2){

try{

System.out.print("Enter a number : ");

int a=ip.nextInt();

throw new InputMismatchException();

}

catch(InputMismatchException e){

System.out.println("Input Miss match");

}

}

if (ch==3){

try{

Class c=Aobj.getClass();

Field f=c.getDeclaredField("num");

System.out.print(f.get(Aobj));

}

catch(IllegalAccessException e){

System.out.println("IllegalAccess to private method");

}

catch(NoSuchFieldException e){

System.out.println("No such field exist");

}

}

if(ch==4){

try{

System.out.println("Accesing method not present");

System.out.print(A.class.getMethod("Abc"));

}

catch(NoSuchMethodException e){

System.out.println("No such method ");

}

}

if(ch==5){

//try{

System.out.print("Enter a Number : ");

int p=ip.nextInt();

Aobj.v(p);

// if(p<0){

// throw new IllegalArgumentException("Number less than 0");

// }

//}

//catch(IllegalArgumentException e){

// System.out.println(e);

//}

}

else{

System.out.print("Wrong choice ");

break;

}

}

}

}

imaumrudh@Aumrudh-PC:~/java/ex6/pgm4$ java Test

1-Divide by Zero

2-InputMisMatch

3-Illegalaccess

4-NOsuchMethod

5-IllegalArgumentException

Enter your choice : 1

Enter two Number : 1 0

Handled divide by zero exception

Exception is: java.lang.ArithmeticException: / by zero

1-Divide by Zero

2-InputMisMatch

3-Illegalaccess

4-NOsuchMethod

5-IllegalArgumentException

Enter your choice : 2

Enter a number : hi

Input Miss match

Exception is: java.util.InputMismatchException

1-Divide by Zero

2-InputMisMatch

3-Illegalaccess

4-NOsuchMethod

5-IllegalArgumentException

Enter your choice : 3

IllegalAccess to private method

1-Divide by Zero

2-InputMisMatch

3-Illegalaccess

4-NOsuchMethod

5-IllegalArgumentException

Enter your choice : 4

Accesing method not present

No such method

Exception is: java.lang.NoSuchMethodException:

1-Divide by Zero

2-InputMisMatch

3-Illegalaccess

4-NOsuchMethod

5-IllegalArgumentException

Enter your choice : 5

Enter a Number : -6

Number less than 0

Exception is: java.lang.IllegalArgumentException