**THE UNIVERSITY OF DODOMA**

**COLLEGE OF INFORMATICS AND VIRTUAL EDUCATION**

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**CT 215: OBJECT ORIENTED PROGRAMMING IN JAVA**

**NAME: ANUARI IDDI ISSA**

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**COURSE: BSc-SE**

**ASSIGNMENT**

: **Exception** : is an event which occur during execution of program, that disrupts the normal flow of programs instructions

**Role of exception**: executing application reports it by throwing exception that contains information about the error.

**Exception hierarchy: is the** throwable class which is direct subclass of the object class.

**Checked exceptions**: is the type of exception that must be either caught or declared in the method in which it is throwing.

**Un-Checked exceptions:** is the something that has gone wrong with the program and is unrecoverable.

1. ***try----catch()***

package exception;

public class Exceptionee {

public static void main(String[] args) {

try{

int[] mynumber={5,3,23,32};

System.out.println(mynumber[5]);

}

catch(Exception e){

System.out.println("Something went wrong");

}

}

}

* ***try—catch()---finally***

package exception;

public class Exceptionee {

public static void main(String[] args) {

try{

int[] mynumber={5,3,23,32};

System.out.println(mynumber[5]);

}

catch(Exception e){

System.out.println("Something went wrong");

}

finally{

System.out.println("The try and catch is finished");

}

}

}

* ***try---finally***

package exception;

public class Exceptionee {

public static void main(String[] args) {

try{

int[] mynumber={5,3,23,32};

System.out.println(mynumber[2]);

}

finally{

System.out.println("The try and catch is finished");

}

}

}

* ***nested try and catch()***

package exception;

public class Exceptionee {

public static void main(String[] args) {

try{

int[] mynumber={5,3,23,32};

System.out.println(mynumber[1]);

try{

int[] arrray={5,33};

System.out.println(arrray[2]);

}

catch(Exception a){

System.out.println("Something is incorrect");

}

}

catch(Exception e){

System.out.println("Something went wrong");

}

}

}

1. ***throw***

package exception;

public class Exceptionee {

static void verifyNo(int num){

if(num>29){

throw new ArithmeticException("Access denied myfriend....");

}

else {

System.out.println("Access granted....");

}

}

public static void main(String[] args) {

verifyNo(45);

}

}

* ***throws***

package exception;

public class Exceptionee {

static void fun() throws IllegalAccessException{

System.out.println("Inside fun () . ");

throw new IllegalAccessException("demo");

}

public static void main(String[] args) {

try

{

fun();

}

catch(IllegalAccessException e)

{

System.out.println("caught in main.");

}

}

}



package exception;

public class Myexception extends Exception{

int a;

public Myexception(int b){

a=b;

}

public String toString(){

return "Exception Number="+a;

}

}

class Javaexception{

public static void main(String[] args){

try{

throw new Myexception(2);

}

catch(Myexception e){

System.out.println(e);

}

}

}

1. Rules for exception handling with respect method overriding

* If parent class method does not declare any exception
* If parent class method declares unchecked exception
* If parent class method declares checked exception
* If parent class method declares both checked and unchecked exceptions

* Parent class declares no exception

package exception;

public class Parent3 {

void testMethod3(){

System.out.println("All is Well!!!! with Parent");

}

}

class Child2 extends Parent3{

@Override

void testMethod3(){

System.out.println("All is Well!!!! with child");

}

public static void main(String[] args){

Parent3 p=new Child2();

p.testMethod3();

}

}

* Super class does not declare exception but subclass declare unchecked exception

package exception;

public class Parent{

void testMethod(){

System.out.println("All is Well!!!! with parent");

}

}

class Child extends Parent{

@Override

void testMethod() throws ArithmeticException{

System.out.println("All is Well!!!! with Child");

}

public static void main(String[] args){

Parent p=new Child();

p.testMethod();

}

}

* Super class does not declare exception but subclass declare a checked exception

package exception;

import java.io.IOException;

public class Parent2 {

void testMethod1(){

System.out.println("All is Well!!!! with parent");

}

}

class Child1 extends Parent2{

@Override

void testMethod1() throws IOException{

System.out.println("All is Well!!!! with child");

}

public static void main(String[] args){

Parent2 p=new Child1();

p.testMethod1();

}

}



package exception;

public class Propagation{

double division(int a,int b){

return (a/b);

}

double method1(int x,int y){

return division(x,y);

}

double method2(int m,int n){

return method1(m,n);

}

public static void main(String[] args){

Propagation prog=new Propagation();

try{

System.out.println("System.out.println(\"the Answer is: "+ prog.method2(143,0));

}

catch(Exception e){

System.out.println("No Operation performed");

}

}

}