**Course 2 - Backend and Database Development**

**Day 8: 19 Dec 2024**

**Exception Handling**

Exception is a pre-defined class part of lang package.

Exception is an object or memory which get created when unexpected or abnormal condition occurs during the exception of a program. To handle the generated exception using some technique is known as exception handling.

Java Program

Compile Run

javac Demo.java java Demo

java compiler java interpreter

compiler convert whole code in another format ie byte code.

Interpreter check the code line by line.

Compile time error run time error

Syntax error

Run time error

Error Exception

Error and Exception both are pre defined classes in java part of lang package.

Error : The Error which generated at run time which we can’t handle it. JVM (Java Virtual Machine) crash, software or hardware issue.

Exception : it is type of run time error which we can handle it. Divided by zero or array index out of bonds.

Exception :

Checked exception un checked exception

RunTimeException

SQLException ArithmeticException

IOException ArrayIndexOutOfBoundsException

FileNotFoundException NumberFormatException

All checked exception are directly or indirectly extends Exception class.

All unchecked exception are sub class of RunTimeException class.

To handle both type of exception java provided totally 5 keywords.

1. try
2. catch
3. finally
4. throw
5. throws

try and catch block

syntax

try {

try block

}catch(Exception e){

Catch block

}

Try with multiple catch block

If any exception generate we want to perform generic task like display error message and when any exception generate we want do some coding then we can write try with single catch block.

But depending upon type of exception if we want to perform different task then we need to use try with multiple catch block.

finally block

Finally is a type of block which get executed 100% sure if any exception generate or not.

Try block : one line or multi line which generate we need to keep in try block.

Catch block : this block execute only if any exception generate. No exception no catch block.

Finally is a type of block which get execute doesn’t matter exception generate or not.

Finally block use to close the resources.

try {

// open the file

// read and write operation

}catch(Exception e) {

}finally {

// close the file

}

throw :

throw keyword is use to generate or raise pre-defined or user defined (custom exception) base upon conditions.

Syntax

throw new Exception();

throw new Exception(“Message”);

throw new ExceptionSubClass();

throw new ExceptionSubClass(“message”);

if we want to create user defined class then we need to create Class and that class must be extends Exception class.

by default every sub class constructor call super class constructor with help of super() parameter. super() parameter always call super class empty constructor.

throws :

throws keyword we can use with method signature. Which is use to throw to exception to called methods.

public void display() throws Exception, ExceptionSubClass{

Coding….

}

Checked exception we need to handle mandatory using try-catch or throws. Un checked exception we can avoid.

Checked exception check twice compile time as well as run time.

Un checked exception check only run time not compile time.