**Day 3: 31 – July 2024 – Core Java**

**Exception Handling :** Exception is an object or memory it get created or generated when unexpected or abnormal things happen during the execution of a program.

**Java Program**

**javac java**

java compiler java interpreter

.class file generate

Which contains byte code.

Compile time error run time error

Syntax error or type error

Run time error

Error Exception

Both are pre defined classes part of lang package.

The error which generate at run time which we can’t handle it. JVM crash, software or hardware etc

The exception is type of run time error which we can handle it using some technique.

Exception

Checked exception un checked exception

IOException RuntimeException

FileNotFoundException

SQLException ArithmeticException

ArrayIndexOutOfBoundsException

Etc NumberFormatExcception

To handle both type of exception ie checked as well as unchecked java provided 5 keyword

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

try and catch block

try {

}catch(Exception e) {

}

Try with multiple catch block

try {

}catch() {

}catch() {

}catch() {

}

finally block : this block execute doesn’t matter exception generate or not.

Try : one line code or more than one line code keep in try block

Catch : exception handler block. If any exception generate then only this bock execute. No exception no catch block.

Try

Catch catch catch catch finally

Catch finally catch

finally

throw keyword use to generate the pre defined or user defined exception depending upon the conditions.

Syntax

throw new Exception();

Or

throw new ExceptionSubClass();

throws keyword: throws keyword is use to throw the exception to caller method. this keyword we use with method signature.

Multi threading :

Program : set of instruction to perform specific task.

Processor : processor is responsible to execute the code.

Process : code in execution or time taken to execute the code.

Thread : thread is small execution of a code within a process.

By default inside main method always default thread execute.

Thread t = Thread.currentThread();

Multi tasking

1. thread base
2. process base

In java we can create more than one thread

1. using extends Thread class
2. using implements Runnable interface

synchronization : it is use to block or lock or allow to use all resources for only one thread at time.

to achieve synchronization java provided synchronized keyword. this keyword we use with method or inside a method we can write more than one synchronized block.

sleep :it is use to pause the flow of the thread

wait : it is use to make the thread to wait or suspend with some condition

notify: it is use to callback waited thread or resume

notifyAll : it will resume of all waited thread.