**Day 2**

Access specifiers : Java provided totally 4 types of access specifiers which help to expose the visibility or accessibility of class, variable, method as well as constructor within a same package as well as other package

private : we can use with variable (instance as well as static), method (static as well as non-static), constructor but not with local variable and class.

scope : within a same class.

default (nothing) :we can use with all.

Scope : within a same package

protected : we can use with variable (instance as well as static), method (static as well as non-static), constructor but not with local variable and class.

scope : within a same package other package if sub class.

public : we can use with variable (instance as well as static), method (static as well as non-static), constructor as well as class but not with local variable.

scope : same package as well as other package.

package : is a collection of classes and interfaces. Package is like a folder or directory. When we need to more than one class with same but different purpose.

2 types

1. User defined package

**education**

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Attendance Attendance

1. Pre defined package

Interface Vs abstract class

1. Interface contains only final variable but abstract class can container normal as well as final variable.
2. Interface contains only abstract method but abstract class can container normal as well as abstract method.
3. Interfaces doesn’t contains default constructor. But abstract class can container default constructor as well as we can write parameter constructor.
4. Normal class can implements more than one interface (multiple inheritance). Normal class can extends only one abstract class.
5. Using interface we can achieve 100% abstraction but using **abstract class we can achieve partial abstraction**.
6. Interface is use to provide the specification. Abstract class can provide partial implementation.

**Exception Handling :**

Exception is an object which occurs when unexpected or abnormal condition occurs during the execution of a program.

java

compile the program run the program

javac Demo.java java Demo

compiler interpreter

compile time error run time error

syntax error or type error

Run time error

Error Exception

Error and Exception both are pre define class part of lang package. by default every java program imported lang package.

Error: Error is a type of error. Which generated at run time which we can’t handle it. JVM crash or hardware/software issue .

Exception : exception is a type error which generate at run time which w can handle it.

Exception

Checked exception Unchecked exception

RuntimeException

IOException ArrayIndexOutOfBoundsException

FileNotFoundException NumberFormatException

SQLException ArithmeticException

Etc NullPointerException

To handle both checked and unchecked exception java provided 5 keywords

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

**unchecked exception**

try and catch block

try {

try block

}catch(Exception e) {

catch block

}

Try with multiple catch block

try {

}catch(ArithmeticException e){

}catch(ArrayOutOfBoundsException e) {

}catch(NumberFormatExeption e){

}

Finally block:

Try block: the code may 1 line code or multi line code which generate exception we need to keep in try block.

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

Finally block : finally is a type of block which will execute 100% sure if any exception generate or not.

try

catch catch catch catch finally

catch finally catch

catch finally

file handling or jdbc code

try {

open the file

**read or write operation**

}catch(Exception e) {

}finally {

Close the resources

}