**Assignment-6**

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**--------------------------------------------------**

**What is private access specifier?**

**Ans:**

Access modifier----set the accessibility

Private void method2{}  
we cannot be accessed by other class

\*private cannot be accessed outside the class to access that variable from the outer class we use getter and setter in java

\*Here setter we have to assign the value

\*Then getter method to access the variable

In c++ mean access specifier

In java we have access modifier only

Class-----only modifier we can use as public,default,final,abstract

Private protected cannot be used for class

Inner class we can use private otherwise we cannot use private keyword with class

Public class is only accessible to outside the package//any class /any package

Default class accessible only inside the package//specified package

Private class test//specific class

{

}

Protected---subsiding class

**what are getter and setter methods? why do we need them?**

Public class Bank{

Private int balance=35000;

Public int getBalance()

{

return this.balance;

}

Public void setBalance(int value)

{

If(value>2500)

this.balance=value;

}

}

Public static void main(String[] args)

{

Bank bank=new Bank();

Int min=bank.getBalance();

//getter mean must return type present that variable type only give( not give void)

Syso(min);

Bank.setBalance(2000);

Int min=bank.getBalance();

Syso(min);

}

}

**why this keyword in the setter method??**

**Ans:**

this keyword refers to current instance itself

this is only required if a local variable name hides a field since local variables in the setter not same as field

when the variable are the same it is distinguish between them

**difference between local variable and member variable/instance variable.**

**Ans:**

Local variable declare in a function ,its lifespan is on that function only

Member variable declare in a class definition its lifespan inside the class only,it can be accessed by any function inside the same class

**what is reference variable?**

**Ans:**

Reference variable created using defined constructor of classes\

Used to access objects

These variables declared to be of specifc type that cannot be changed[Car,Human these data type are user defined and we cannot modify]

Eg: Employee Bus Car Student

Default value of any reference variable is null.

It is used to refer any object of the declared type

ex: Car car=new Car(“BMW”);

Human human=new Human();

\*used to point the object

\* pointer to a memory

\* object created—java allocates memory—require to store object—newly created object assigned to variable ---variable gets value of yhe reference to the object—not the object itself  
\*access object members using reference variable

------------------------------------------------------------------------------------

**syntax of creating an object?**

class Human{

Boolean eyes;

String name;

float height;

Human()//constructor

{

}

**Java program executed by JVM**

}

class Testing{

public static void main(Strin[] args){

Human human=new Human();//object creation

}

}

3 important types of memory:

Method area-------Stack memory---------Heap memory---------heap manager

Command prompt:

D:\javafolder\javac Testing.java

When compile this testing.java-----2 .class file generated 1.Testing.class 2.Human.class

Run:

D:\javafolder\java Testing---------------------whenever we used the command java----------automatically operating system go to java software[eg.c:java\jdk1.19\bin location]

JVM activated

Jvm searched for test.class file-\* current location

\*search for java predefined library files

\*class path environment variables refered locations

Then also it is not available mean---- upto java 6 version it give exception like

Java.lang.NoClassFoudError:app

Above 7 version it throws NoSuchMethoFound:main

a

**Whenever a class bytecode is loaded to the method area**

Automatically jvm will create Java.lang.class object created HEAP Memory

Jvm search for main method in this class object--------after identifying main method---jvm will create thread to execute this main method this thread is main thread

Whenever Thread is created in java application ..automatically separate STACK created inside the stack memory in order to store thread executable part

Main thread Stack

Method Area:

Jvm take the testing.class file then

Jvm load testing class bytescode to the memory..

Classes Bytescode are loaded to METHOD AREA

Testing.class file loaded

IT CONTAINS:

Name of the method-main

Parameter list --String[] args of the method

Local variables of the method/

Return values of the method

Args=null; value stored

human—local variable stored

THAT METADATA CONTAINS:

Access modifier/name /details about super class for the testing class /implemented interfaces of testing class/constructor detail about test class/variable information of testing class/ method information of testing class

**explain in detail what happens when we create an object??**

**Ans:**

**3 steps:**

* Creating memory for the object
* Providing identities for the object[hashcode value for reference variable created]
* Providing initial values inside the object

Human human=new Human();

Whenever jvm/main method especially encountered new keyword automatically object creation process started

Then ,Jvm first identify which class this object is going to be created[Human()] then jvm search for Human.class file---that is existed in D:/javafolder

This file( jvm/Main thread) will take that Human.class then load to

METHOD AREA

Human.class loaded here

Whenever Human class bytecode loaded to the method area –automatically

Another class object is created in heap memory--- this is also class object

Human class MetaData

Class Human{

float—4 bytes String}

Memory calculation completed jvm will submit the request to HEAP memory about the requirement of creating the object

Heap manager search for 4 bytes of memory for jvm requirement

This 4 bytes minimal memory created is an object

Human object

Uniiqe identity created for this object---12334324 this is hashcode of the object

This hash code goes to jvm then jvm converts as hexadecimal value

This hexadecimal form is assigned for reference value of the object [human]

Reference variable contain reference value

Reference value is the hexadecimal form of hashcode

Hashcode is a unique identity provided by heap manage in the form of integer value

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Heap memory

After this identies of hash code then hexadecimal form creation then this time jvm accommodate the memory for instance variables inside the object

Float height;----4 bytes memory created

Before jvm provide any initial value to jvm whether check any variables are initialized like float height=98.9f; that value stored in that bytes memory created in that heap

Inside the Human() constructor jvm will check for any variable is initialized mean that are stored in this heap memory of object creation…!

If any variable not initial mean jvm allocated default values of each datatype like float default value=0;

STACK MEMORY

Whenever hashcode value created …reference value created

This value stored in reference variable which is in the stack memory inside the main method activation method

Eg human=2542354123

main thread coming to the end state /dead state------stack is destroyed while jvm understand java application is completely executed then jvm stop the internal process then shutdown mode completely

**what is class?**

**Ans:**

Collection of state and behaviour,

Collection of object(bus,mobile,bike,laptop,etc)

Bike--🡪key insert

Mobile---🡪charge no

Laptop--🡪without on the laptop ,typing the text is possible but not output shown

Above are Main Activity or behaviour or functionality🡪this is in English

In programming language-🡪this main activity called method

Inside the class main method must present….

Class------------minimum 1 object to n

Object------------minimum 1 to n number of state

Behaviouir--------minimum 1 to n number of behaviour

Class Bus{//collection of objects

main(){//main method must need for every class

Bus driver =new Bus();//need space for driver so I create object

//driver---object references

driver.drive();//object. dot operator [ behaviour/method]

}

}

**Why we go for object?what is the requirement to create an object in java/what is the purpose to create an object in java?**

Java is object oriented programming language

To store the data temporarily in java application----------

REQUIREMENT:

To access member of any class

**what is object?**

**Ans:**

Object--- \*combination of state and behaviour

\*representation of a class

\*real time entity

\*instances of class

Class Google chrome

----new tab[facebook]—new tab[mail]-new tab[google drive]

\*Represents every new tab as google chrome

This representation is called instances of a class

Class Human---------object as ear nose hand leg ,.etc

Class Indian--------object

**what are the default values of all the datatypes?**

**Ans:**

Int 0

Long 0L

Float 0.0f

Double 0.0d

Short 0

Byte 0

Char ‘\u0000’

Boolean false

**difference between the static methods and instance method?**

**Ans:**

Instance method are method which require an object of the class[not the class] they can be called after creating the object of the class

Static method are the methods that can be called without creating the object of class,they are referenced by class name itself

**Syntax of accessing the member variable in the main?**

**Ans:**

Member variable are called instance variable

It is declared in a class but outside the method,constructor of any block

Public class Employee{

Public String name;//name instance variable

Private int salary;//salary instance variable

**Syntax of instance method defination?**

**Ans:**

Access Modifier returntype methodName(){

Method body;

}

Modifier---access type

Return type--- int void char string float

Method name--- any name

Method body--- statements

Public void add()

{

Int a=10;

Syso(a);

}

**syntax of static method defination?**

**Ans:**

Access Modifier static void methodName(){

Method body;

}

**difference between actual parameter and formal parameter?**

**Ans:**

**Formal parameter:**

Variable and its type as they appear in the protoype olf yher function or method--------function name(datatype variable name)

**Actual parameter:**

Variable corresponding to a formal parameter that appears in the function ot method call in the calling environment

Functionname(variable name(34));

**why we need the parameter or arguments to the methods?**

**Ans:**

Parameter-----list of variable in method declaration

Argument---actual value that are passed in which method are invoked

**Parameter----**import arguments into function

Method signature is the method name followed by the parameter list gives type name for each parameter,method do not take any parameters but parenthesis is must.

**why we need the return statement and return type to the method.**

**Ans:**

It causes the program control to transfer back to the caller of a method

Return type may be primitive type liker int float double

Void---return nothing

**Method can be private.( true or false)**

**True.**

**what is the error message if we access private variable or method outside the class?**

**[Need to discuss]**

**Date Assigned :10:01:2023 Completed Date:11:01:2023**

**My Learning Part:**

Memory:

Unit- Bit—byte

DATATYPE:

doorNo=24/3;//if use int mean 8 ----so use string that mean it gives 24/3 return in future…

char letter=’k’;

boolean yes=true;

tamil=98;//reference variable - assignement -value

Primitive data type

short-----------2

int----------4

long-------8

decimal in English---- but program float and double

float-----------4

double---------8

non primitive data type:

String

Datatype------allocating memory whatever we stored//indicates the size

Object—combination of state and behaviour

int a=5;//5

float=8.4//8.4

object---state & behaviour

name,age.colour,laptop screen-------------these are datatypes

classification or collection or group of objects<----gear,engine,brake,seat,accelerator------vehicle-----🡪classification called “class”

speaker,projector,ticket counter,---------cinema

class calculator{

main(){

Calculator casio=new Calculator();

casio.add(inside this input called parameter/arguments);

casio.add(4,5)//method calling

Robot chiti=new Robot();

chiti.prepareCoffee(sugar.milk,coffee powder);

//method add() is undefined error

Return c value that type is integer

}

int add(int a,int b){

int c=a+b;

Return nothing

return c;

}

void add(int a,int b){

int c=a+b;

}

add(input parameter){

//method definition

1

2

3

…………..

Cup prepareCoffee(pot milk,bottle coffee powder,pot2 sugar){//cup type

return coffee

plate mixture() //plate type

reurn mixture

}

}