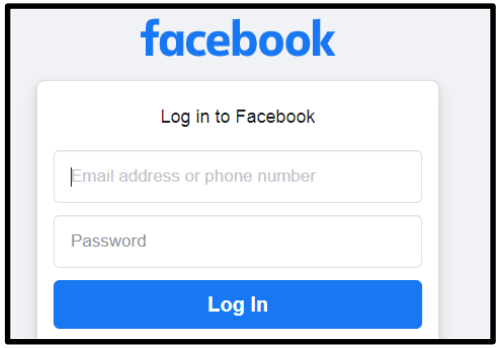
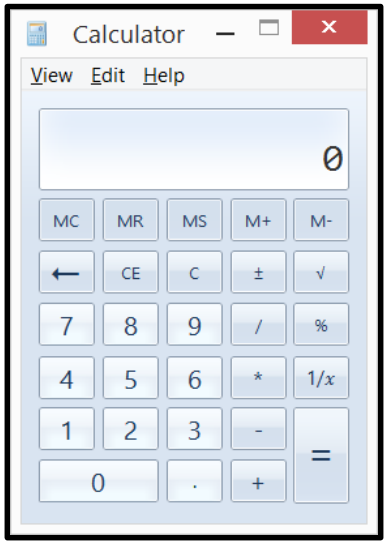

WhatsApp


facebook
Log in to Facebook
Email address or phone number
Password
Log In


Calculator
View Edit Help
0
MC MR MS M+ M-
← CE C ± √
7 8 9 / %
4 5 6 * 1/x
1 2 3 - =
0 . +

C

C++

C#

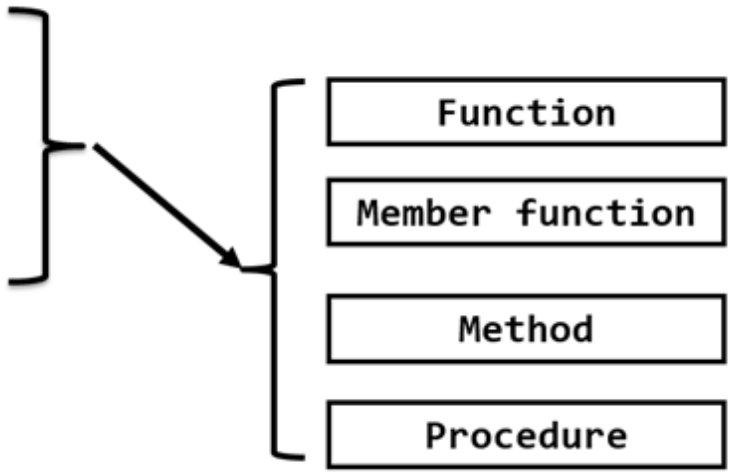
JAVA

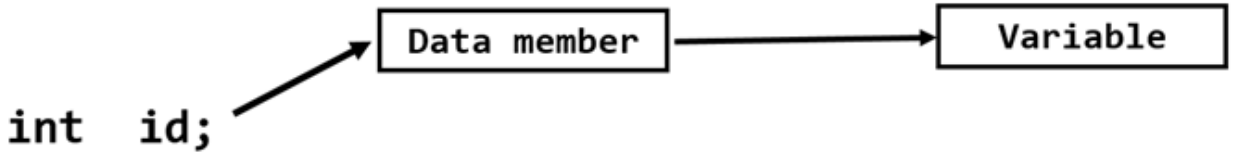
Python

Perl

```
void calculator()
{


}

void scientific_calculator()
{


}
```

```
void display()
{

}
```

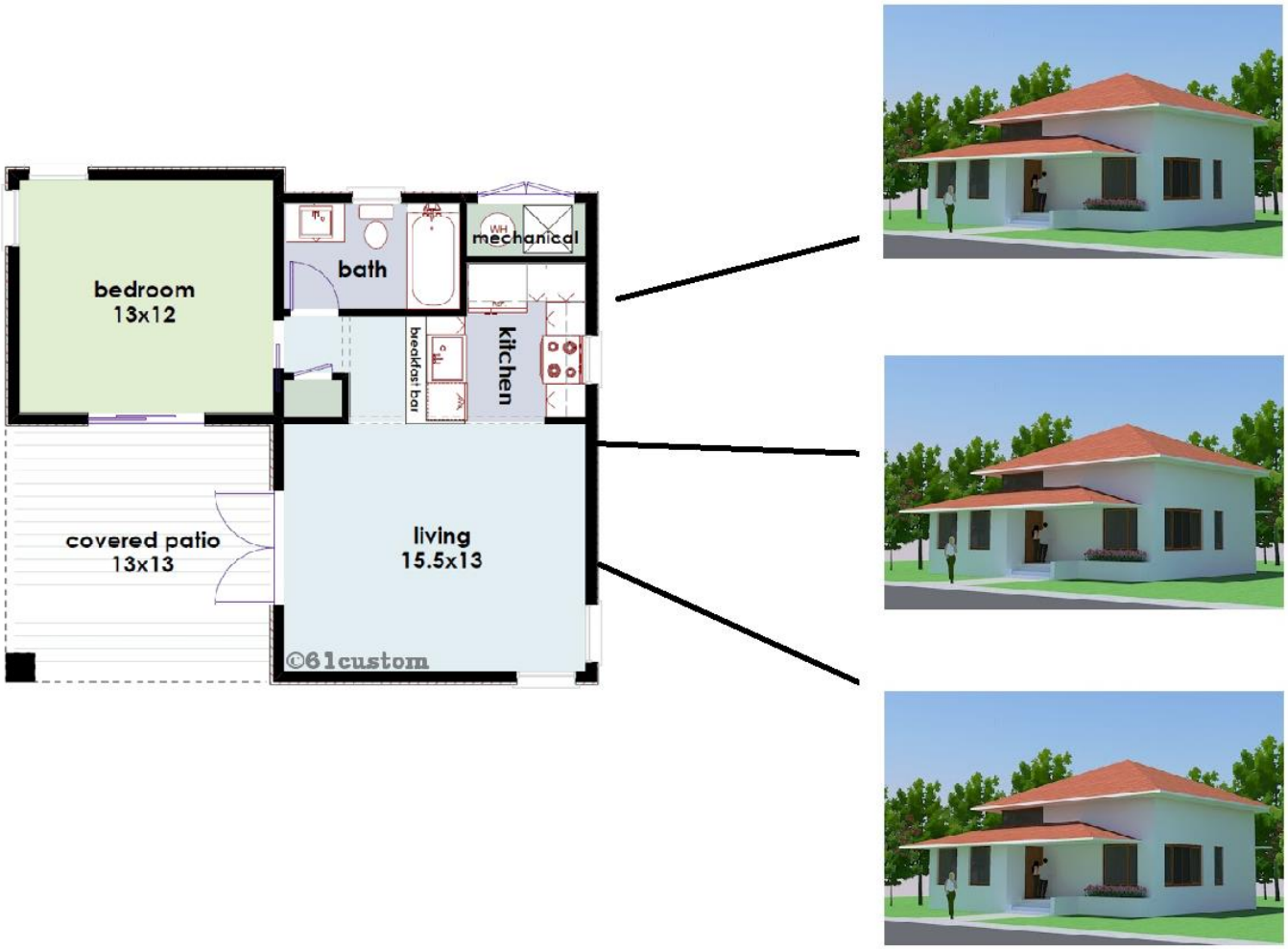





```
int  id;

void display()
{

}
```

1. Turmeric powder - 100 gms
2. Sugar - 1 kg
3. Jaggery - 1/2 kg
4. Idli rice/Boiled rice/Salem rice - 5-7 kgs
5. Steamed rice or Raw rice/Sona masoori - 5-7 kgs
6. High quality raw rice for Pongal - 1 kg
7. Dosa rice (optional) - 2 kgs
8. Basmati rice - 1 to 2 kgs

```
int     rollno
char    name[15];
char    city[15];

void display()
{

}
```


bedroom
13x12
bath
WH
mechanical
kitchen
breakfast bar
covered patio
13x13
living
15.5x13
©61custom

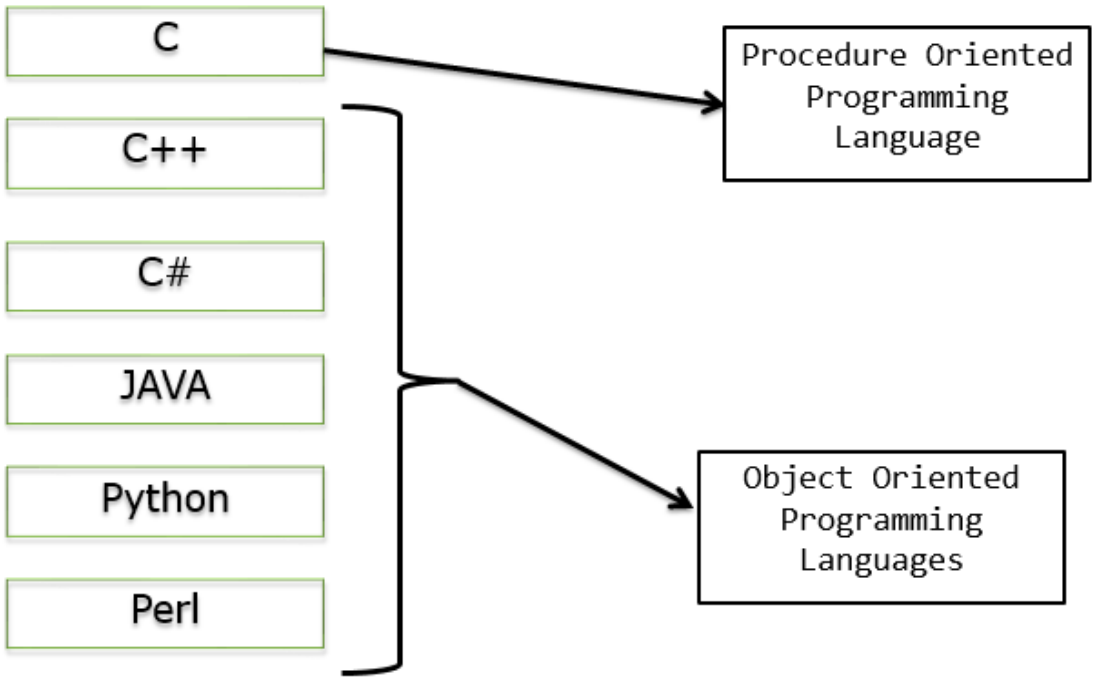
```
class StudentDetails
{
        int       rollno
        string    name;
        string    city;

        void display()
        {

        }
}
```

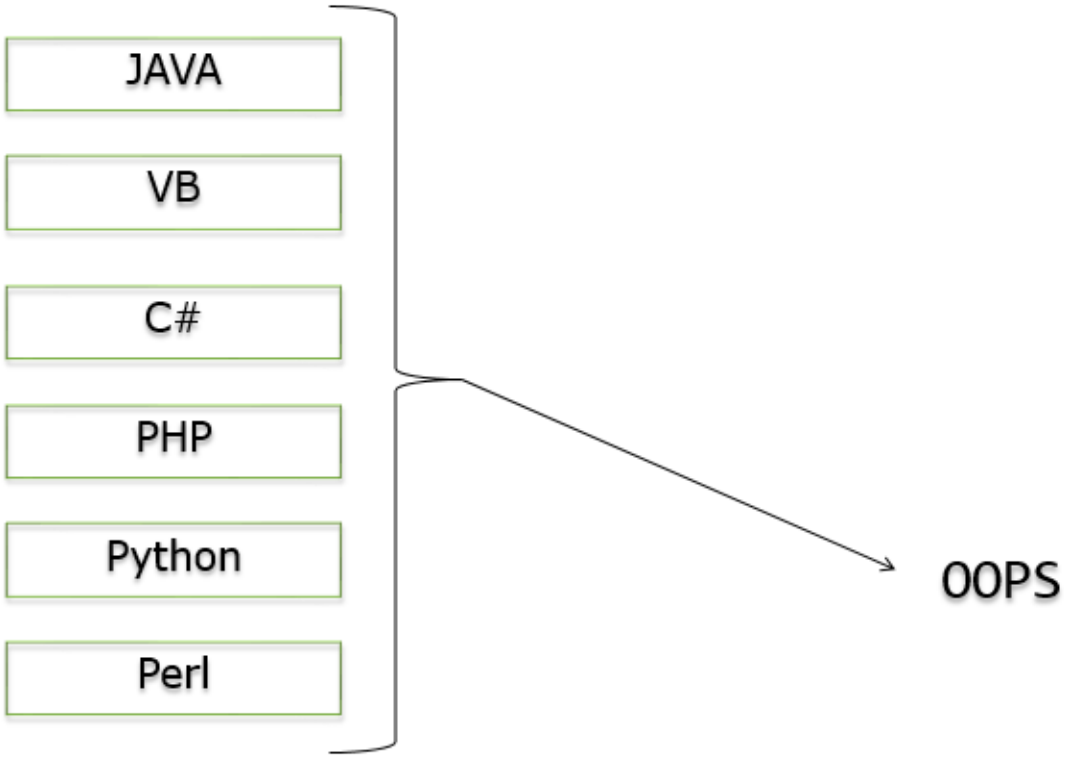
```
class StudentDetails
{
        int         rollno
        string      name;
        string      city;

        void display()
        {

        }
}
```

```
StudentDetails student1, student2, student3;

student1.rollno = 10;
student1.name   = "Ramesh";
student1.city   = "Salem";

student2.rollno = 20;
student2.name   = "Ganesh";
student2.city   = "Trichy";

student3.rollno = 30;
student3.name   = "Karthick";
student3.city   = "Chennai";
```

```
int x, y, z;

void display()
{

}
```

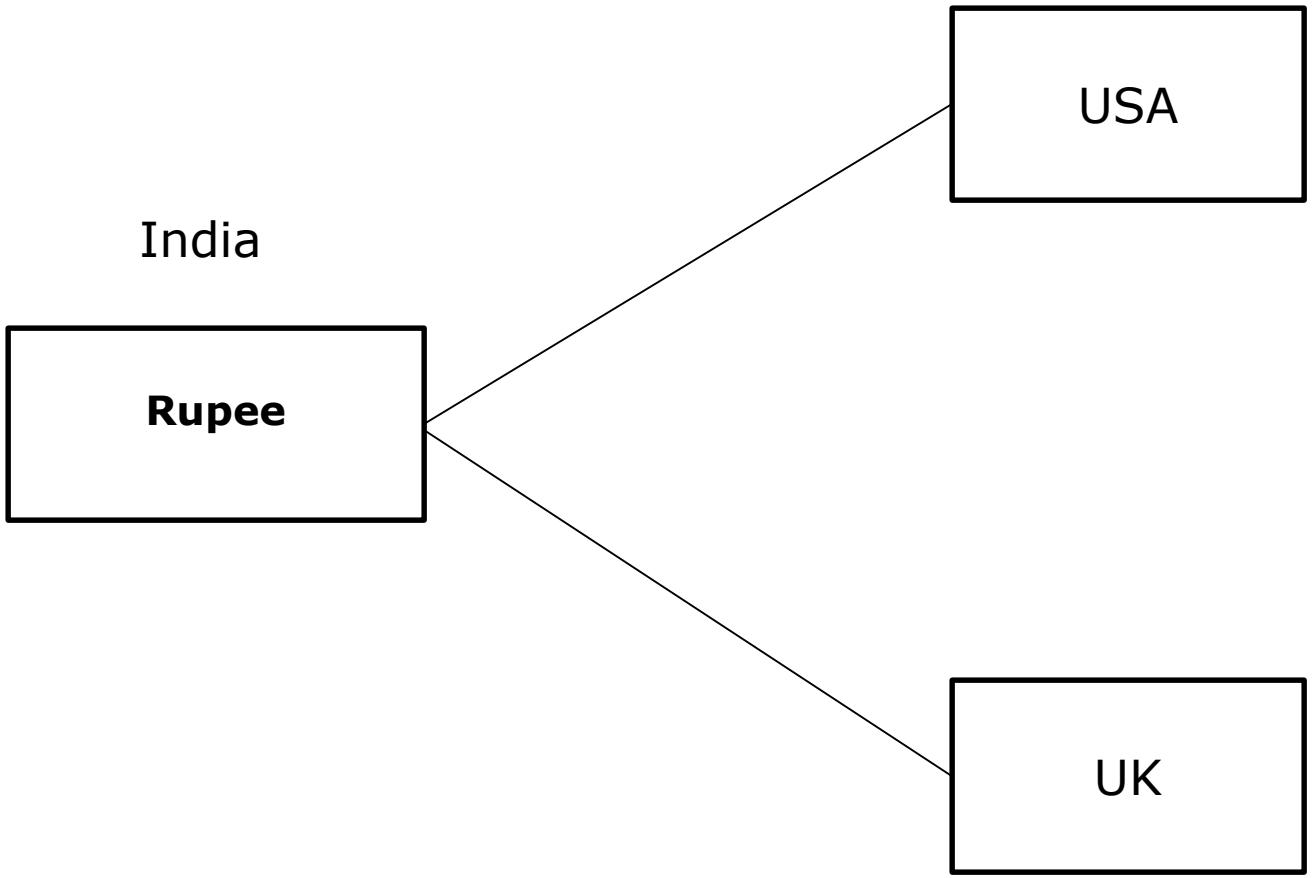
```
class Test
{
        int x, y, z;
        void show()
        {

        }
}
```

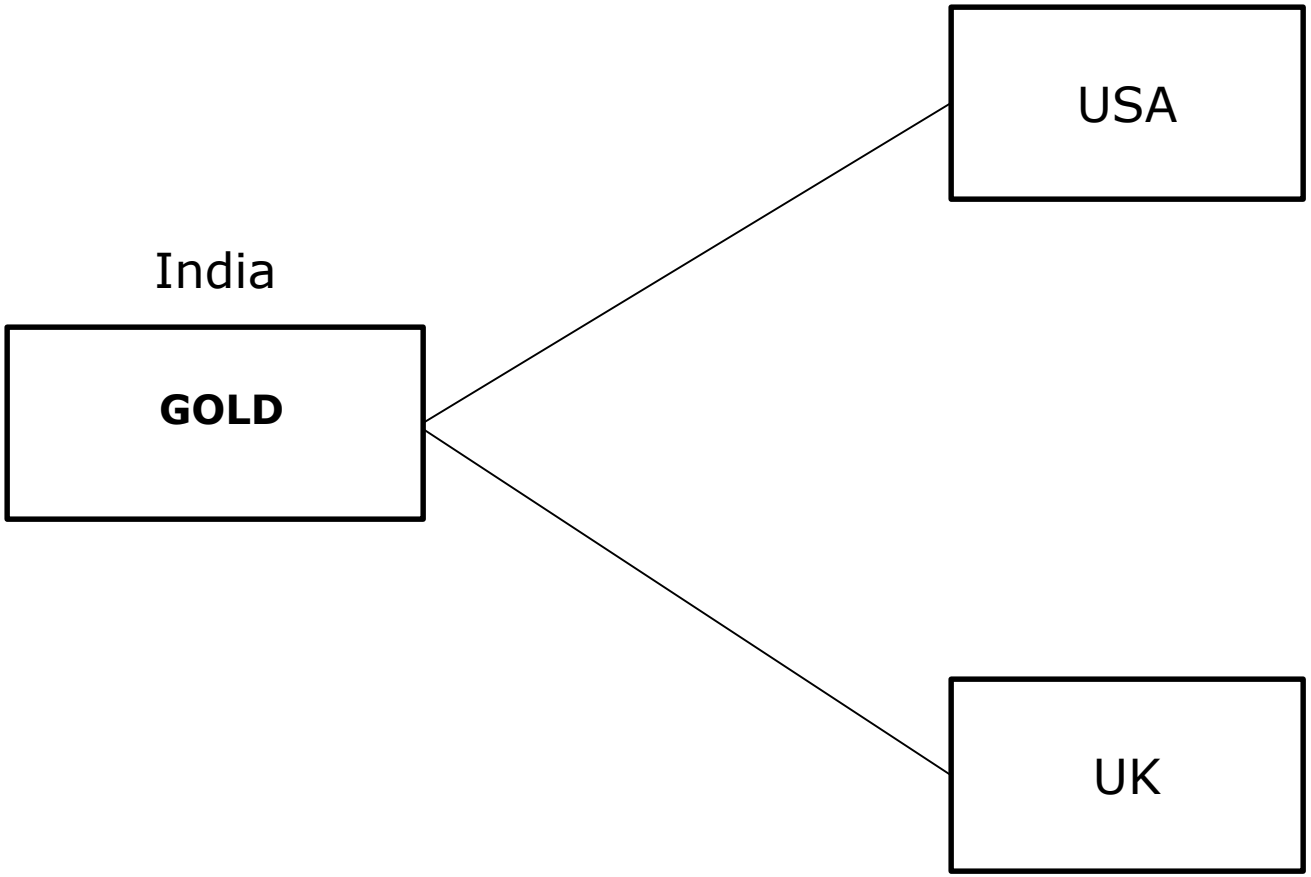

C
C++
C#
JAVA
Python
Perl
Procedure Oriented Programming Language
Object Oriented Programming Languages

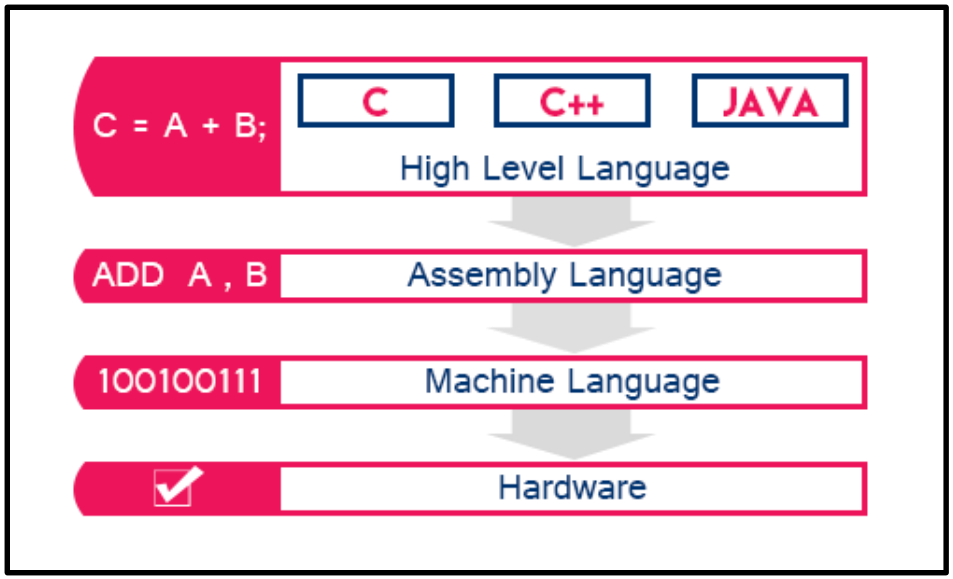

JAVA
VB
C#
PHP
Python
Perl
OOPS

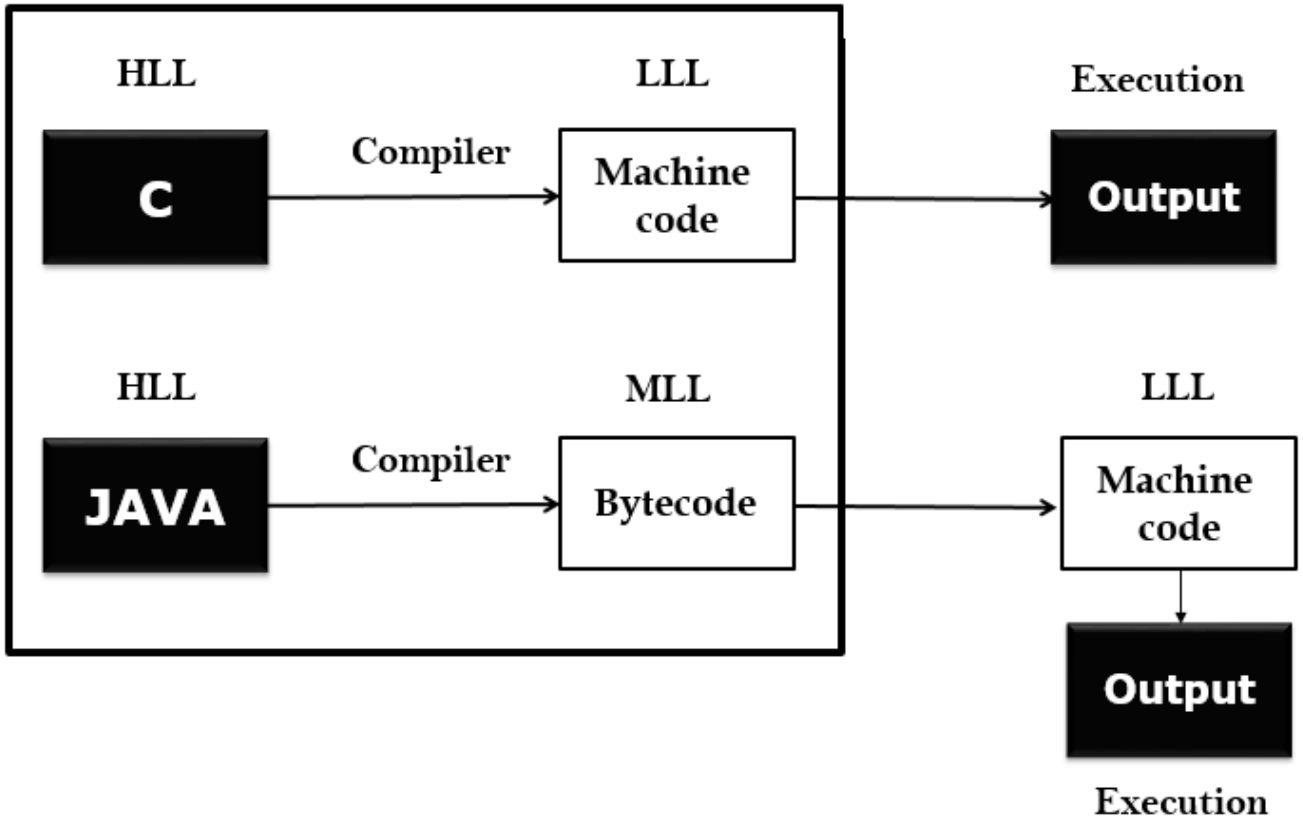
Java Features

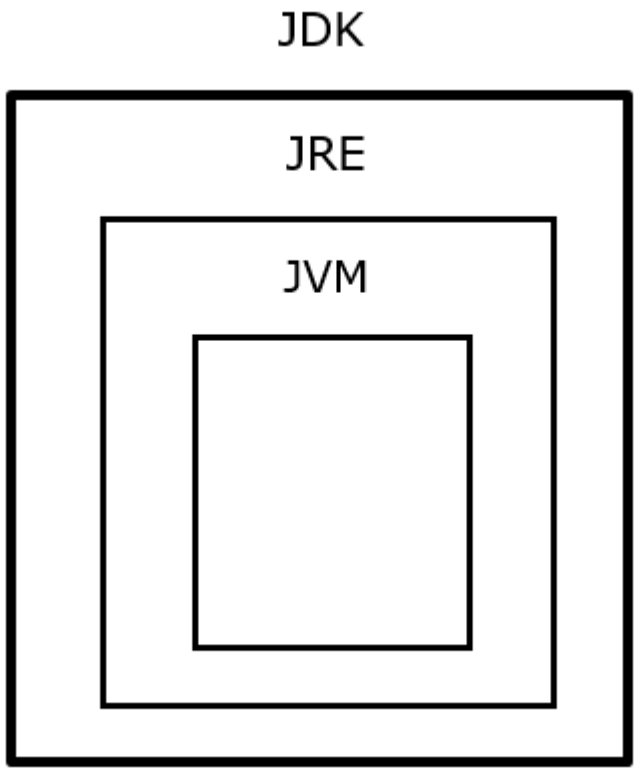
- Platform Independence
- Object Oriented Programming Language


USA
India
Rupee
UK


USA
India
GOLD
UK


C = A + B;
C
C++
JAVA
High Level Language
ADD A , B
Assembly Language
100100111
Machine Language
Hardware


HLL
LLL
Execution
C
Compiler
Machine code
Output
HLL
MLL
LLL
JAVA
Compiler
Bytecode
Machine code
Output
Execution

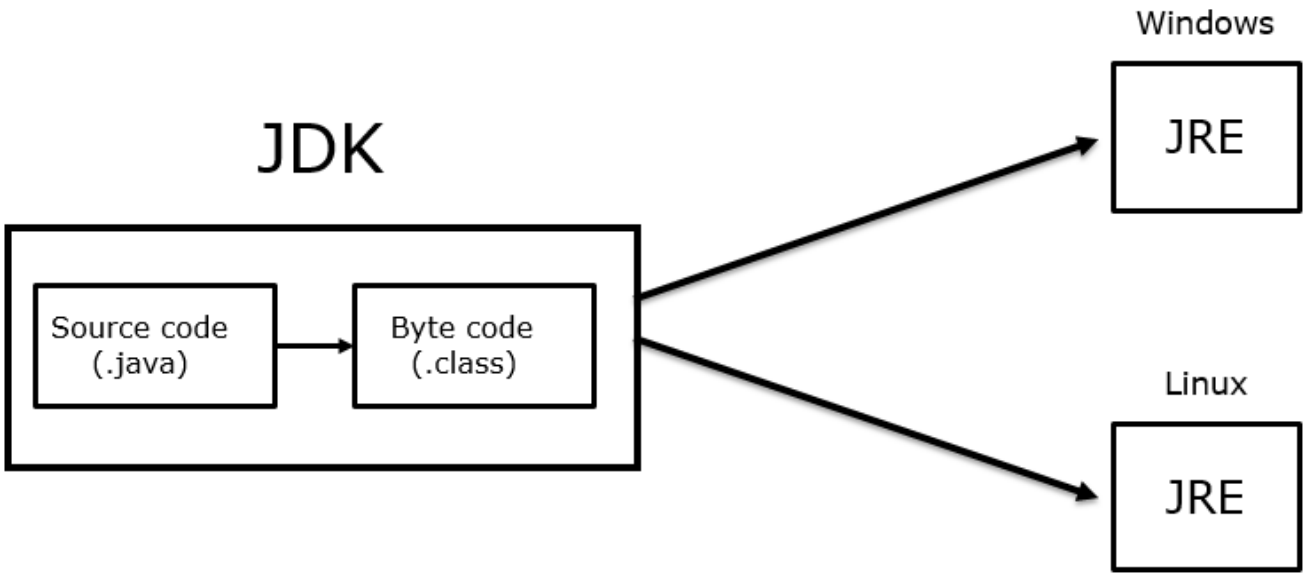

JDK
JRE
JVM

JDK → Java Development Kit

JRE → Java Runtime Environment

JVM → Java Virtual Machine

Platform Independence



Programming Basics

```
System.out.println(“Welcome”);
```

Data Types

- ✓ boolean
- ✓ char
- ✓ byte
- ✓ short
- ✓ int
- ✓ long
- ✓ float
- ✓ double

```
int     a    =  100;
char    b    =  'S';
float   c    =  20.4f;
```

Value Type

```
int     *x =  &a;
char    *y =  &b;
float   *z =  &c;
```

Reference Type

```
int     x   =   100;

char    y   =   'S';
```

Mapping

```
int  id;
```

Data Member

```
void display()
{
  printf(id);
}
```

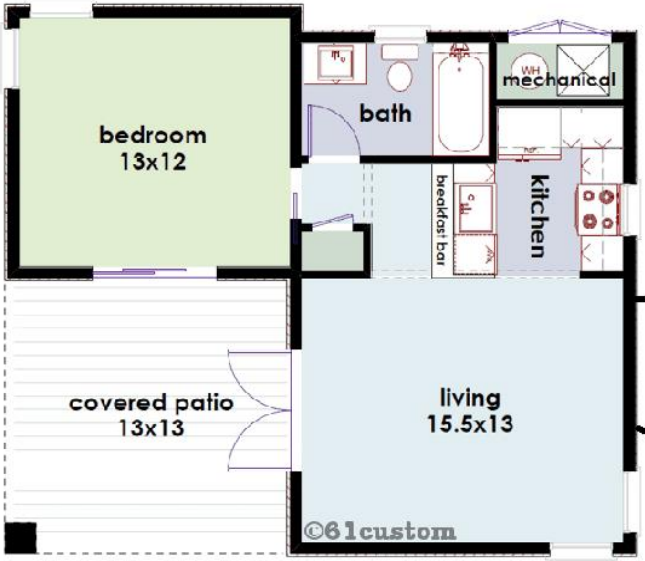
Member Function

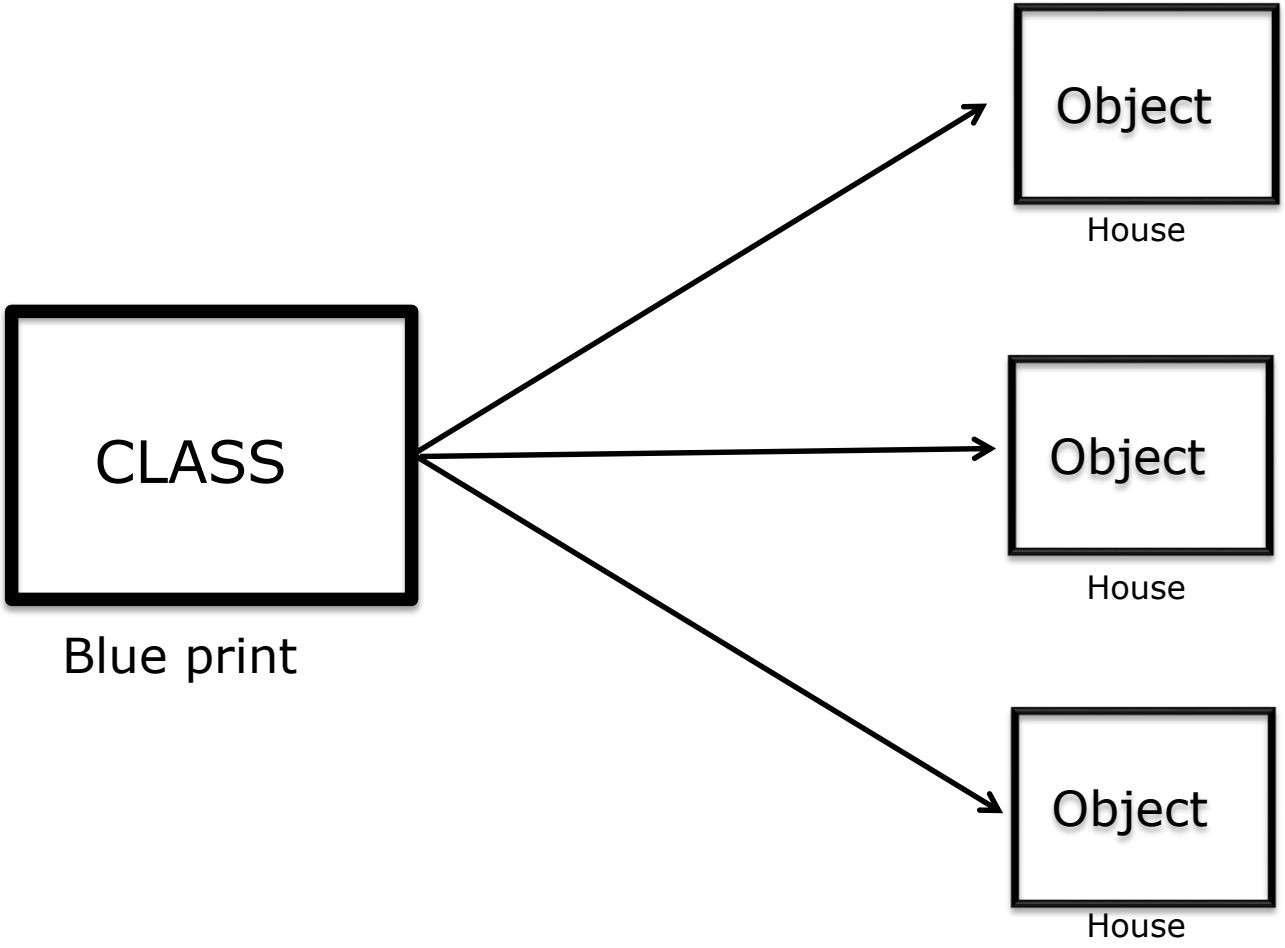
```
void calculator()
{

}
void scientific_calculator()
{

}
```

Object Oriented Programming Language

- Class
- Object

BLUE PRINT


bedroom
13x12
bath
mechanical
WH
kitchen
breakfast bar
covered patio
13x13
living
15.5x13
©61custom


CLASS
Blue print
Object
House
Object
House
Object
House

C Language

```
int  id;

void display()
{
  printf(id);
}
```

Data member

Member function

```
class Student
{
      int id;
      void display()
      {
        cout<<id;
      }
}
```

```
class Student
{
    int id;
    void display()
    {
     cout<<id;
    }
}
```

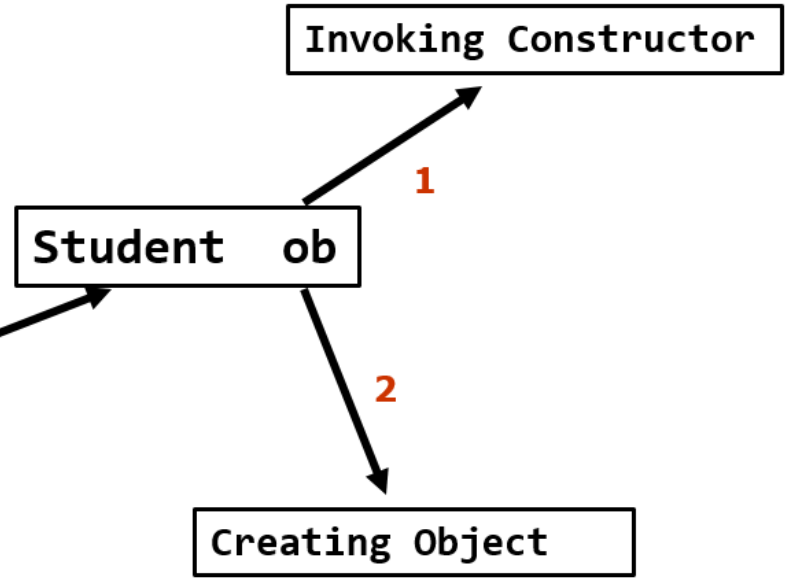
Blue Print

```
class Student
{
    int id;
    void display()
    {
     cout<<id;
    }
}
```

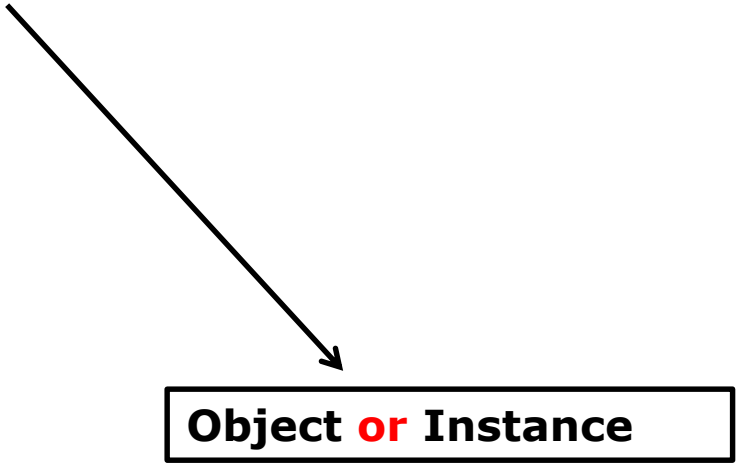
```
Student()
{
}
```

Blue Print

```
class Student
{
 int id;
  Student()
  {

  }
}
```



```
Student  ob;
```



```
int        x;
```

Pre-defined data type

```
Student  ob;
```

User-defined data type

```
class Demo
{
        int     x;
}
```

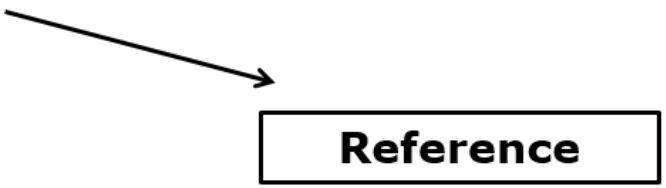
```
class Student
{
    int         rno;
    String      name;
}
```

```
class String
{

}
```

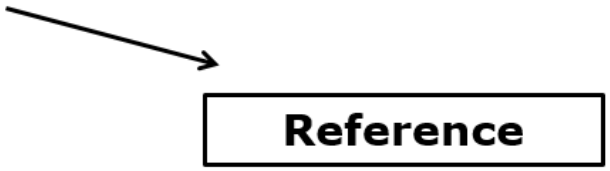
```
Student  s1;
```

Object creation of Student class

```
int        *x;
```




```
Student    *ob;
```



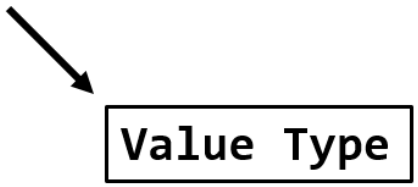
```
Student  ob;
```

Object creation

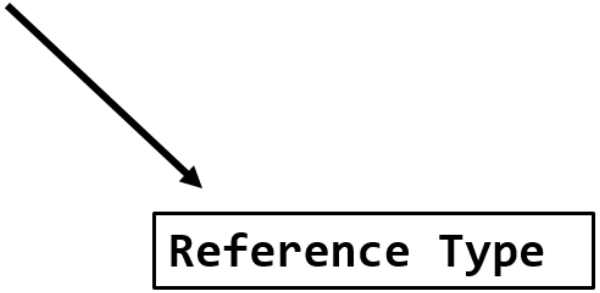
```
new Student()
```

Object creation

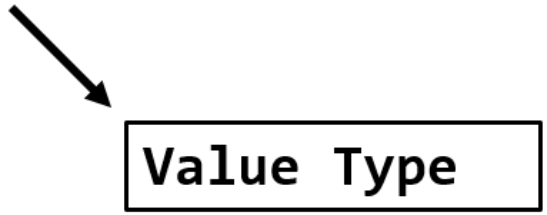
```
Student   ob;
```



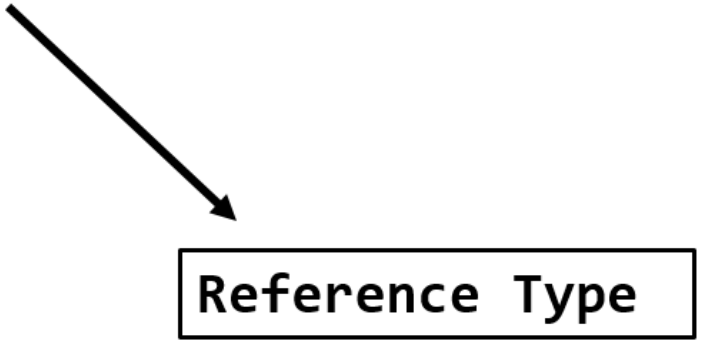

```
Student  *ptr = new Student();
```



```
Student   ob;
```




```
Student  *ptr = &ob;
```



```
Student   *ob1;
```

Reference creation in C++

Object creation in C++

```
Student    ob2;
```

Reference creation in JAVA

```
Student   *ob1;
```

Reference in C++

```
Student   ob2;
```

Reference in JAVA

```
Student  *ob;
```

Reference

```
new Student()
```

Object creation

Java

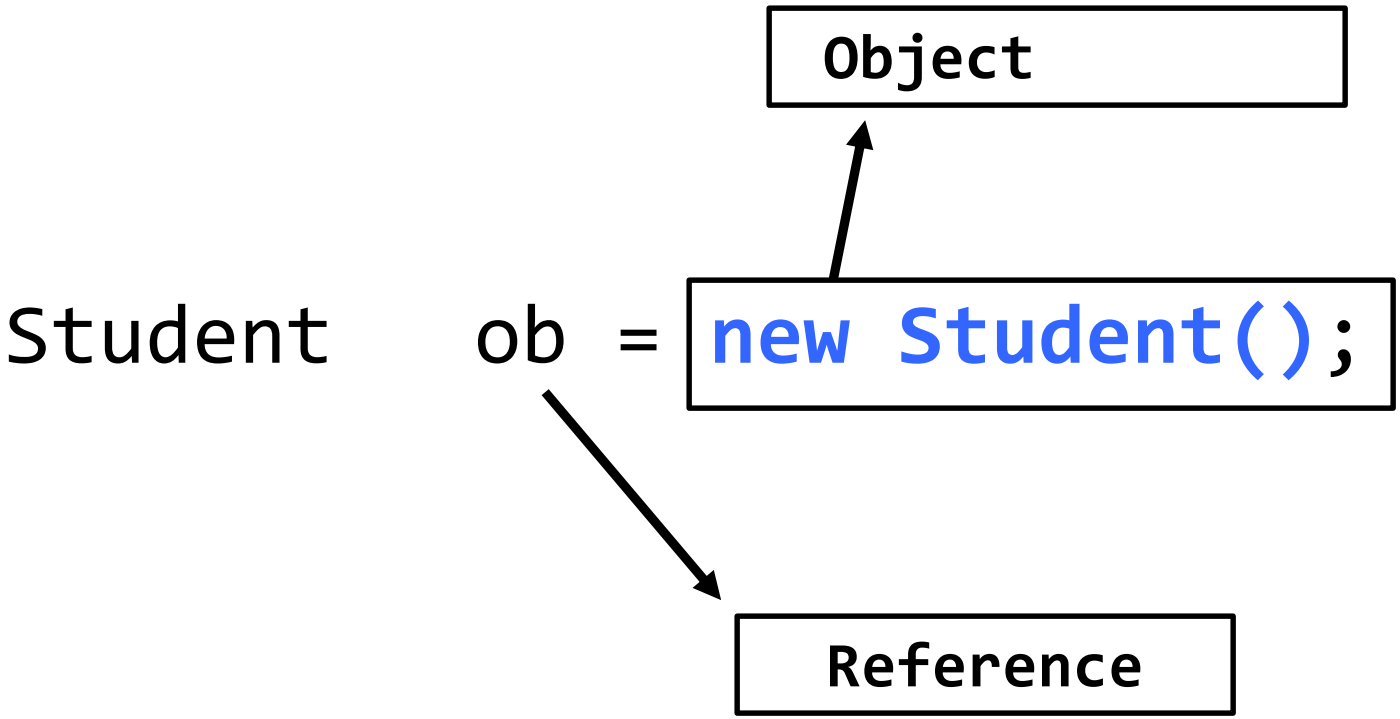
```
Student  ob;
```

Reference

```
new Student()
```

Object creation

```
Student    ob = new Student();
```


Object
Student ob = new Student();
Reference

Object

```
class Student
{
   int id;
   Student()
   {
   }
}
```

```
Student  ob = new Student();
```

Instance (or) Object

```
int    x;
float  y;


x = 100;
y = 205.f;


StudentDetails sd1;
StudentDetails sd2;

sd1 = new StudentDetails();
sd2 = new StudentDetails();
```

```
int    x  =  100;
float  y  =  20.5f;


StudentDetails sd1 = new StudentDetails();
StudentDetails sd2 = new StudentDetails();
```

```
class Employee
{
  int        id  =  100;
  Address    ob =  new Address();

}
```

```
class Address

{

}
```

```
class Student
{
    int id;
    void display()
    {
     cout<<id;
    }
}
```

Blue Print

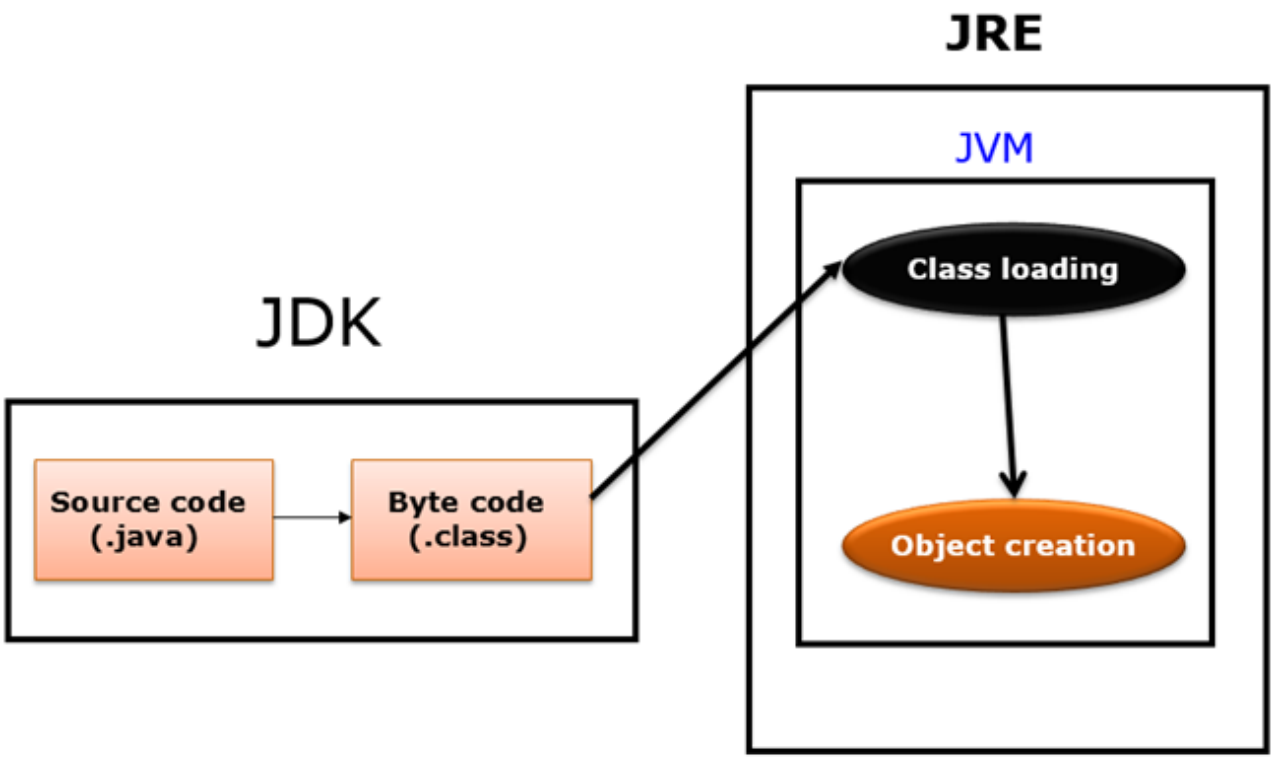
Types of Variables and Methods

- Instance variable and Instance Method (non-static).
- Class variable and Class Method (static).
- Local Variable

```
class Demo
{
    static int a;
            int b;
}
```

Static Member

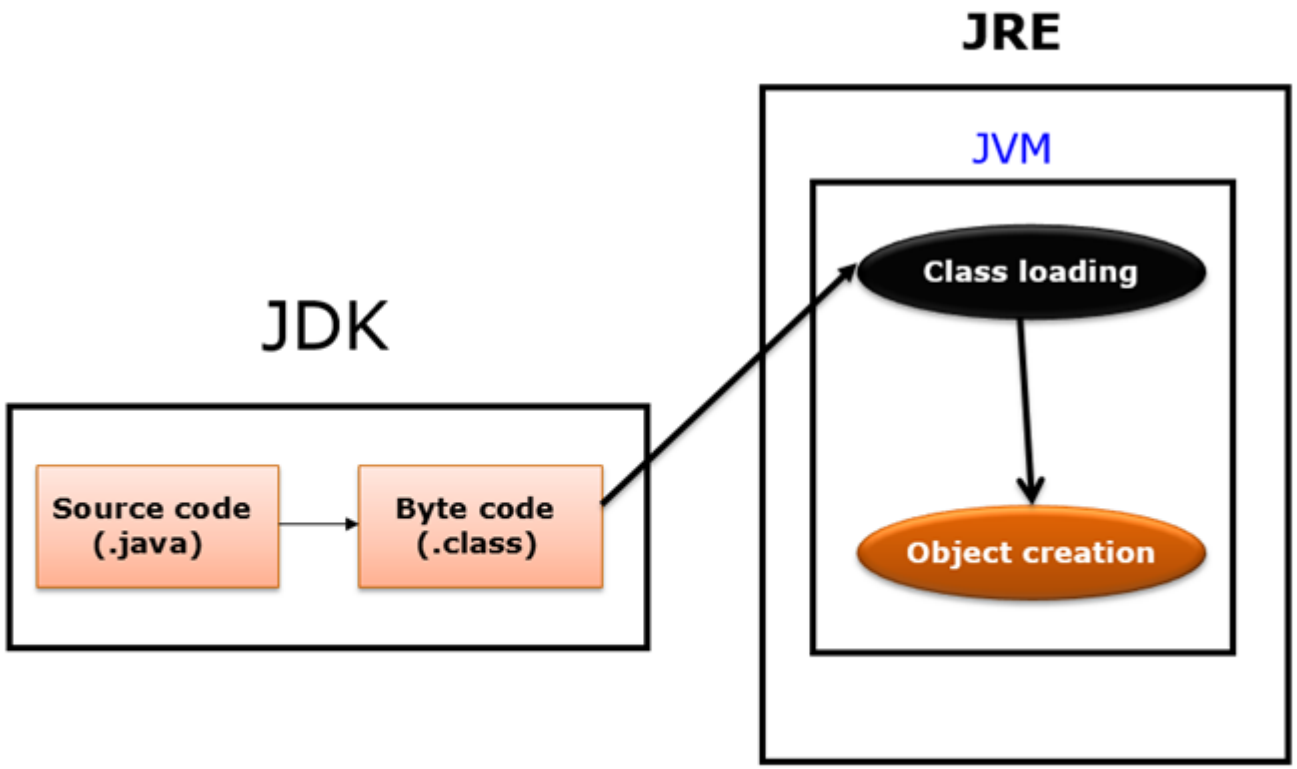
Non-Static Member


JRE
JVM
Class loading
JDK
Source code
(.java)
Byte code
(.class)
Object creation

```
class Demo
{
    static int a;
            int b;
}
```

Static Member

Non-Static Member



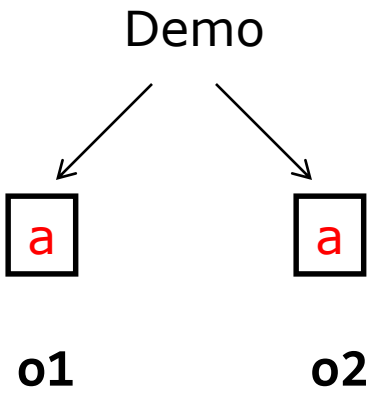
```
class Demo
{
    static int a;
           int b;
}
```

```
Demo.a = 5000;
```

```
Demo obj=new Demo();
obj.b=1000;
```

```
class Demo
{
    int a;
    void sum()
    {
     cout<<a;
    }
}
```

```
Demo o1=new Demo();
o1.a=1000;
o1.sum();

Demo o2=new Demo();
o2.a=3000;
o2.sum();
```



```
class Demo
{
    int a;
    void sum()
    {
     cout<<a;
    }
}
```

Instance Variable

Instance Method

```
class Demo
{
    static int a;
    static void sum()
    {
     cout<<a;
    }
}
```

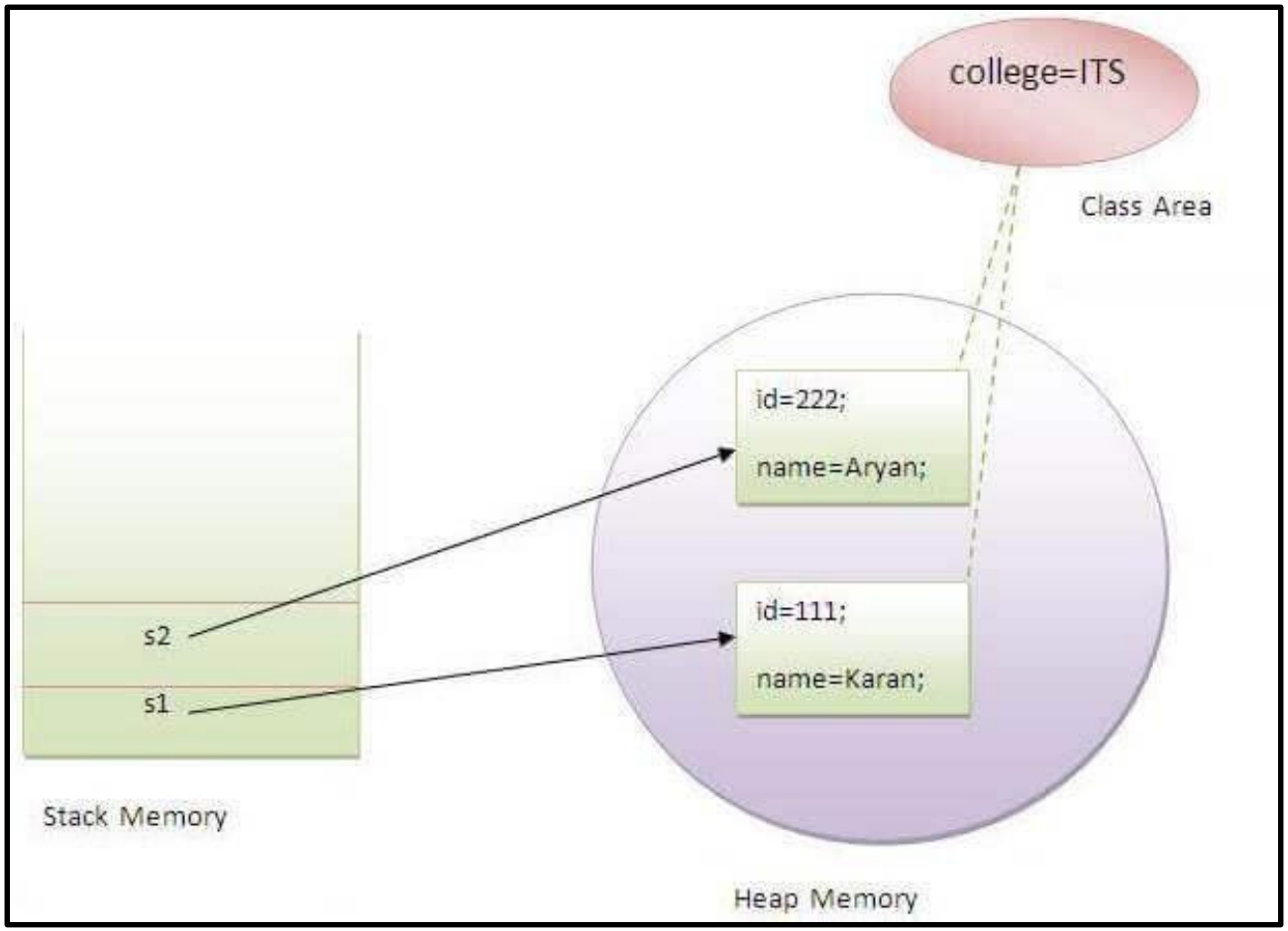
```
Demo.a = 5000;
Demo.sum();
```

```
class Demo
{
    static int a;
    static void sum()
    {
     cout<<a;
    }
}
```

Class Variable

Class Method

```
class Student{

     int rollno;
     String name;
     String college="ITS";

}


class Student{

            int rollno;
            String name;
     static String college="ITS";

}
```


college=ITS
Class Area
id=222;
name=Aryan;
id=111;
name=Karan;
s2
s1
Stack Memory
Heap Memory

```
class Demo
{
    void sum()
    {
        int a;
        cout<<a;
    }
}
```

Local Variable

Packages

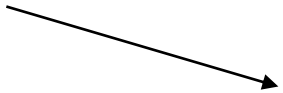
```
package yahoo;

class Registration
{
}
```

Sub packages

Classes

Interfaces

```
java.lang.*;
```



Object

System

```
System.out.println(“Welcome”);
```

System Class

```
class System
{
    int x;
    int y;
}
```

```
System ob1 = new System();

ob1.x = 100;
ob1.y = 200;
```

System Class

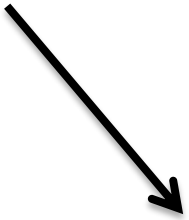
```
class System
{
    static int x;
    static int y;
}
```

```
System.x = 100;
System.y = 100;
```

```
class PrintStream
{
        void println(int);
        void println(String);
}
```

```
class System
{
  static PrintStream out = new PrintStream();
}
```

```
PrintStream  out = new PrintStream();
```



Object of PrintStream class

Class

Variable (static)

```
System.out
```

Class

Variable (static)

```
System.out
```

Object of PrintStream Class

```
class PrintStream
{
      void println(int);
      void println(String);
}
```

Class

Variable (static)

1

2

```
System.out.println("Welcome");
```

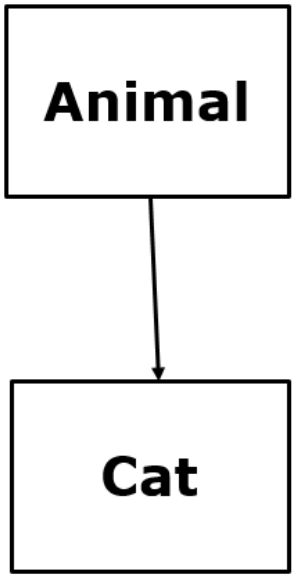
3

4

Method

Object of PrintStream Class

```
class Animal
{

}
class Cat extends Animal
{

}
```



```
class Demo
{

}
```

```
class Demo extends Object
{

}
```

```
import java.lang.*;

class Demo extends Object
{
    Demo()
    {
    }
}
```

```
class Demo
{

}
```

Demo.java

```
class Demo
{
  public static void main(String args[])
  {
     System.out.println(“Welcome”);
  }
}
```

Java Program Execution Steps

1. Type the Java Program in Notepad and save in any user directory

   eg. E:\Test\Demo.java

2. Go to Command Prompt and change the directory location

   eg. cd E:\Test

3. Set Path to Java Installed Directory

   E:\>Test> set path = c:\Program Files\Java\jdk1.8.0_111\bin

4. Compile and Run the Java Program

   E:\>Test> javac Demo.java

   E:\>Test> java Demo