***Introduction To Java***

Java programming language was originally developed by Sun Microsystems

– by James Gosling

– released in 1995 as core component of Sun Microsystems

– Java platform (Java 1.0 [J2SE]).

– Latest release

* ***Features of Java***
* Object oriented
* Platform independent
* Simple
* Secure
* Architectural-Neutral
* Portable
* Robust
* Multi-threaded
* Interpreted
* High performance
* Distributed
* Dynamic
* ***Java Program Lifecycle***

Java programs normally undergo four phases

– Edit

• Programmer writes program (and stores program on disk)

– Compile

• Compiler creates byte codes from program (.class)

– Load

• Class loader stores byte codes in memory

– Execute

• Interpreter: translates byte codes into machine language

* ***Object Oriented Programming***
* Encapsulation
* Inheritance
* Polymorphism
* Abstraction
* ***Encapsulation***

Encapsulation is defined as the binding of data and functions which can manipulate the data together.

Data encapsulation is done to protect data from outside interference.

For example:- In a company, there are many sections like finance, sales. Now the data of sales section is separate from finance section. All the data and members that can access sale data will come under one section only that is sales section.

* ***Abstraction***

Abstraction is also known as Data Hiding.

Abstraction means displaying only the useful information to the user and hiding the details from the user.

Abstraction can be implemented using classes concepts, using abstract classes.

For example:- Driving a car

While we drive a car, we know that when we will press brakes speed will slow down but we do not know how our brakes are linked to engine.

* ***Inheritance***

Inheritance is the property of an object to acquire some or all features of other objects.

Inheritance Increases the readability and reusability of code.

Types of Inheritance

1. Single inheritance

2. Multilevel inheritance

3. Hierarchical inheritance

* ***Polymorphism***

The word polymorphism means having many forms.

For example:- A person at the same time can have different characteristics. Like a man at the same time is a father, husband, employee, friend. So the same person posses different behavior in different situations. This is called Polymorphism.

There are 2 types of Polymorphism

1. Compile time polymorphism

2. Run time polymorphism