

OOPS (by Saigal - VIBHA) [interpreted] The Line

→ programming paradigm

→ programming paradigm is a way/style of programming.

→ programming paradigm gives an idea how problems are analysed and solved in a particular language.

→ programming paradigms are a way to classify programming language based on their features.

These are various programming approach supports C++ :-

i) procedural programming paradigm

or procedural oriented programming (POP) paradigm.

ii) object based programming (OBP) paradigm.

iii) object oriented programming (OOP) paradigm.

i) Procedural programming

The procedural programming method is commonly used to solve the scientific and engineering problem.

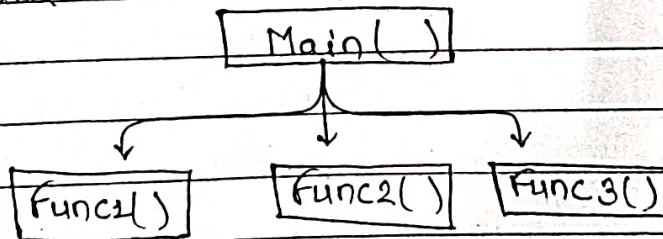
Eg:- Calculator program
 unit converter program
 Game programming
 Editing designing
 official software
 audio video player
 web browser etc.

- In this software process is important not data.
- It is also called process/procedural oriented programming (POP).

→ Features of procedural programming

- i) focus is on processing not data.
- ii) It follow top-down approach in program design.
- iii) There is no security in this language. everything is visible.
 (Drawback / Weakpoint of pop, data is not secure)

iv) In this language, program is divided into module i.e functions



v) It is also called modular programming and structured programming, i.e module/function/blocks

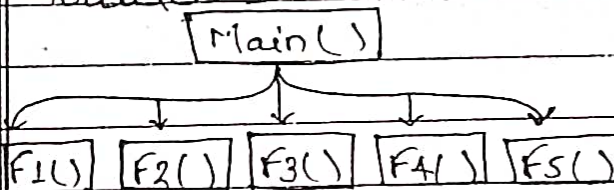
- i.e programming construct
- selection (if, else, switch)
 - Iteration (for, while & dowhile loop)

Procedural oriented programming (POP)

i) It Follows Top-down approach in program design.

ii) Emphasis is on procedure (process) rather than data.

iii) Program is divided into modules i.e functions.



iv) There is no security here. everything is visible. It does not support access specifier (private, protected). It's data access directly by other parts of program.

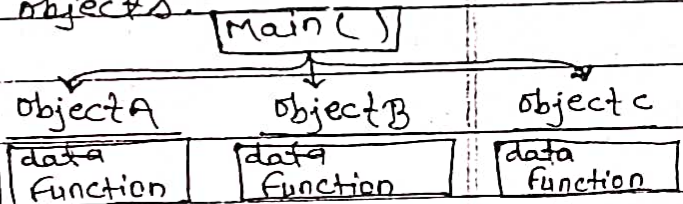
v) Data Encapsulation, data hiding, Abstraction, Inheritance Concepts are not available in POP.

Object oriented programming (OOP)

i) It Follows Bottom-up approach in program design.

ii) Emphasis is on objects rather than procedure (process).

iii) program is divided into objects.



iv) It is completely secure everything based on access specifier (public, private, protected).

v) Data Encapsulation, Abstraction, data hiding, inheritance concepts are available in OOPS.

Object based programming (OBP)

Object oriented programming (OOP)

i) It is a subset of oop

i) It is a superset of oop

ii) Object based programming does not support all the features of oop like polymorphism, Inheritance.

ii) Object oriented programming supports all the features of oops like polymorphism, Inheritance.

iii) Major limitation of OBP
It implements Abstraction, data hiding, Encapsulation but does not support polymorphism and inheritance concepts. It cannot represent realworld relationships (i.e inheritance concepts).

iii) Major Advantages of oop
It implements Abstraction, data hiding, Encapsulation concepts as well as polymorphism and inheritance concepts. It represents realworld relationship (i.e Inheritance concepts)

iv) languages are C++, Javascript, vb (visual basic) etc.

iv) languages are C++, Java, python, C# etc. (# sharp)

→ Basic Concepts of oop

→ Object

→ Modularity

→ class

→ Polymorphism

→ Data Encapsulation

→ Inheritance

→ Data Abstraction

→ Abstract and concrete class.

→ Data hiding