Agenda

- Revision
- Class
- Object
- Anonymous class
- Anonymous object
- Namespace concept and its use
- Stream
- Pointer basic
- this pointer
- Types of member Functions
- Ctor members initializer list

Class (demo01)

- class is a logical entity;
- It is also called as blueprint of an object

Object (demo01)

- It is a physical entity.
- It is an instance of a class
- It defines 3 things
    1. State
        - data members inside the class defines the state of an object
    2. Behaviour
        - Member functions of a class defines the behaviour of an object
    3. Identity
        - Unique data members inside the class represents identity of an object
        - If unique data members are not present then the address of the object represents the identity

Anonymous object (demo02)

- At the time of object creation if we do not provide the name/ideentifier to the object then we call it as anonymous object.

Anonymous class (demo03)

- a class without a name is called as anonymous class.
- we cannot pass objects of this class as an agrument to the functions

Namespace (demo04 to demo11)

- It a container which is used to avaoid the name ambugity and to organize the code.
- To access the members of the namespace we have to use name of teh namespace scope resolution operator (::) and the member name.
- We can define variables,functions,structures,classes inside the namespace.
- we cannot instantiate the namespace.
- we cannot define the namespace inside any function or class, it should be defined on the global scope.

Stream

- 1. ostream
- 2. istream

cout (demo12 and demo13)

- It is an exteranl object of ostream class
- To display the output on console (monitor) we will use this object of cout along with insertion operator(<<)

cin (demo12 and demo13)

- It is an external object of istream class
- To take the input from console(keyboard) we will use this object of cin along with extraction operator(>>)

this Pointer (demo14)

- for every non static member function of the class their is an internal pointer passed to it which points at the current calling object.
- it is called as this pointer.
- this pointers is a constant pointer passed internally.
- using this pointer to access the data members is optional, however it is industry standarad practice to use this pointer.

Types of Member Functions

- their are 5 types of member functions

- 1. Constructor
- 2. Mutator
- 3. Inspector
- 4. Destructor
  - we will learn it at the time of dynamic memory allocation for data members.
- 5. Facilitators
  - All such member functions that deal with one or more data members of the class to perform any type of operation on them we categorize them as facilitators

Constructor (demo15 to demo17)

- It is a special member function of a class.
- why is is special ?
  - 1. Its name is same as that of class name
  - 2. It does not have any return type.
  - 3. It gets automatically called when object is created.
- When we define a ctor insode our class then the default ctor gets replaced.
- defining multiple ctor inside the class is called as ctor overloading
- Types of constructor
  - 1. Default/Parameterless ctor
  - 2. Parameterized ctor
  - 3. Copy ctor
    - we will learn this after dynamic memory allocation and reference topic.

Ctor members initializer list (demo18)

- Its first use is to initialize the data members of the class as per their sequence of the declarations
- Its second use is to initialize the constant data members.

Mutator (demo19)

- If you want to change/manipulate the value of a single data member outside the class using object then provide a mutator.
- as per industry standard, the name of mutator function should start with set followed by the name of data member whose value need to be changed.
- Mutator functions are also called as setters.

Inspector (demo20)

- If you want to get/read the value of a single data member outside the class using object then provide a Inspector.
- as per industry standard, the name of Inspector function should start with get followed by the name of data member whose value need to be accessed/read/get.
- Inspector functions are also called as getters.

Lab Work

- array of pointers
- 2D array of int type
- concept of dynamic memory allocation