C++

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Topics to be discussed

- Object-Oriented Programming
  - Copy Constructor
  - Shallow copy & Deep copy
  - this pointer
  - Static class members
  - Structure vs Classes
  - Friend of a Class

Copy Constructor

- During copy c++ creates a new object from existing object of same class
- During passing by object value as a paremeter
- Returning an object from a function by value
- Constructing one object based on another of the same class
- Avoid using if raw pointer data memebers is present
- Syntax: c_name::c_name(const c_name &source);

Shallow copy & Deep copy

- Shallow copy
  - Each data member is copied from the source object
  - Pointer is copied not the value where it points to (issue)
  - Source and newly created object both points to same address.

- Deep copy
  - Create new storage and copy the values
  - In the copy constructor while copying, for pointer it copies the data where it points.

this pointer

- this is a reserved keyword
- Pointer to the object
- Can only be used in class scope
- All the member can be accesses using this pointer
- Can be derefernced (*this) to yield the current object

Static class members

- class members can be declared as static
- Static class members belongs to class only, not the objects
- Can be called using the class name
- Independent of the objects
- Useful to provide class-wide information
- Static function has access to static variables only

Structure vs Classes

- Structure comes form C programming language
- Structure is also similar to class but by default the members of class are public
- Don’t declare methods in struct

- by default class members are private.

Friend

- Friend must be granted not taken
- Friend has access to all memebers in the class.
- Friend is not symmetric and not transitive

Doubts

Q&A

End of the session

Thank You