

QUIZ 1

1. Describe OOP. What are the advantages?

- Object-oriented programming.
 - Data and the functions that operate on that data are combined into an object.
 - Programming is not function based but object based.
 - Objects are based on three basic ideas: Encapsulation, Inheritance and Polymorphism.
- Re-use of code. Linking of code to objects and explicit specification of relations between objects allows related objects to share code.
- redesign and extension facilitated by encapsulation, data abstraction which allow for very clean designs.
- other improvements - some resulting in deprecation of some C facilities. New facilities are supplied for I/O, memory allocation and error handling; macros and pointer casts become obsolete for the most part.

2. What are the member access operators? Describe the usage by giving example.

- Dot operator (.) for structure and class members
- Arrow operator (→) for structure and class members via pointer to object
- Print member **hour** of **timeObject**:

```
cout << timeObject.hour;
OR
timePtr = &timeObject;
cout << timePtr->hour;}
```

- **timePtr->hour** same as (***timePtr**).**hour**

3. Describe C-style *struct* structure and compare with C++ style *class* structure.

- C-style structures
 - No *interface*; If implementation changes, all programs using that **struct** must change accordingly

- Cannot print as unit; Must print/format member by member
- Cannot compare in entirety; Must compare member by member
- Classes
 - Model objects; Attributes (data members), Behaviors (member functions), Encapsulation
 - Invoked in response to messages
 - Interfaces; Hide implementation
 - Software reuse