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CS112-Programming Fundamental

Weekly Assignment for Learning and Improvement

Week 1

Lecture 1

1. What are features of Object Oriented Language?

Object Oriented Language*:*

Object-oriented programming language refers to a type of computer programming in which programmers define the data type of a data structure.

Features of Object Oriented Language:

There are three major features in object-oriented programming language which are given below:

1. Encapsulation
2. Inheritance
3. Polymorphism

Encapsulation:
Encapsulation refers to the creation of self-contained modules that bind processing function to the data .These user defined-data types are called “classes,” and one instance of a class is an “object.”

Inheritance*:*
Classes are created in hierarchies, and inheritance allow the structure and method in one class to be passed down the hierarchy. That mean less programming is required when adding functions to complex systems. If a step is added at the bottom of a hierarchy, only the processing and data associated with that unique step needs to be added. Everything else is inherited. The ability to reuse existing objects is considered a major advantage of object technology.

Polymorphism*:*
Object-oriented programming allow procedures about objects to be created whose exact type is not known until runtime.

2. What are features of structural language?

Structural Language:

C is called a structural programming language because to solve a large problem, C programming language divide the problem into smaller modules called functions or procedure each of which handle a particular responsibility. The program which the entire problem is collection of such function.

Features of Structural Programming Language:

1. Division of complex problems into small procedure and functions.

2. No presence of GOTO statement.
3. The main statement include-if-then-else, call and case statements.
4. Large sets of operations like arithmetic, relational, logical, bit manipulation, shift and part word operators.
5. Inclusion of facilities for implementing entry points and external references n program.

3. What are features of procedural language?

Procedural Language:

A procedural is a type of computer programming language that specifies series of well structured steps and procedure within its programming context to compose a program. It contain a systematic order of statement, functions and commands to complete a computational task or program.

Features of Procedural Language:

1. Pre-defined Functions:

Example of predefined function such as "System.out.println", can be used as a function that is already within a programming language, this grants easy work for programmers. This is because it can be written as "system.out.println", instead of having to use lines of code to get the same outcome if they weren't actually a thing.

2. Local Variables:

Local variables are a variable that can easily be accessed within the specific chunk/block of code that it was written in, not through the script of code (like a global variable) a local variable is declared to override the same variable name in the larger space.

3. Global Variable:

A global variable is a variable that can be viewed throughout the entire program by every other procedure taking place, it is also accessible by every other task running in the program. The majority of times, a global variable is a static variable, whose extent is the entire runtime of the program.

4. Parameter Passing:

Parameter passing allow variable values to be passed through to the program which will handle it with a procedure.

5. Modularity:

Modularity is a software technique that shows that separating the functionality into individual, interchangeable modules, each will allow it to execute the specific thing it is designed to do. This all combine us different task to achieve an overall goal.

4. Illustrate difference between compiler and assembler?

Difference Between Compiler and Assembler:

ASSEMBLER:

- Assembler convert the assembly language to the machine language.
- Assembler convert a source code to an object code first than it convert the object code to the machine language with the help of linker program.

COMPILER:

- Compiler is a simple program which convert the source code written by the humans to a machine language.
- Compiler work more directly than the assembler. The compiler can convert the human written code in the machine language directly.