C Language

Chapter # 8

Getting started with C

Lecture: 06

Today's Lecture

► **What is bug**

► **What is debugging**

► **Types of Errors**

► **Structured and Unstructured programming.**

What is bug

▶ An error in a computer program is knows as bug

▶ The programmer can make different errors while writing programs.

▶ A program cannot be compiled if it contains any syntax error.

▶ The complier detects errors and displays error message to describe the causes of error.

What is debugging

- The errors must be removed from the program before it can be compiled and executed.

- The process of finding and removing bugs in known as debugging.

Types of Error

There are three types of error in the program.

▶ Syntax Error

▶ Logical Error

▶ Run time Error

What is Syntax

- A collection of rules for writing programs in a programming language is known as syntax.

- All program statements are written according to these rules.

1.What is Syntax Error

▶ Syntax error is a type of error that occurs when an invalid statement is written in program.

▶ The complier detects errors and displays error message to describe the causes of error.

▶ A program containing syntax errors cannot be complied successfully.

Example of Syntax Error

▶ The statement terminator is missing at the end of statement.

▶ A misspelled keyword is used in the program.

▶ Any of the delimiters is missing.

Example:

▶ Typing forr instead of for is an example of syntax error.

What is Logical Errors

▶ A types of error that occurs due to poor logic of the programmer is called logical error.

▶ A statement with logical error may produce unexpected and wrong results in the program.

▶ Logical error are difficult to find because translator cannot detect these errors.

▶ The logical error can only be detected by examining the program thoroughly.

Example of Logical Errors.

▶ Wrong conditions in program such as writing **a < 5** instead of **a > 5**.

▶ Wrong formula in the program such as writing **Average = Total * 5** instead of

Average = Total / 5.

What is Run Time Error

▶ A type of error that occurs during the execution of program is known as run time error.

▶ It occurs when a statement directs the computer to execute an illegal operation such as dividing a number by zero. 5/0

Unstructured programming

▶ In Unstructured programming languages, the entire logic of the program is implemented in a single module or function.

▶ The program written in these languages are error prone, difficult to understand, modify and debug.

Structured programming

▶ In structured programming languages, the entire logic of the program is divided into a number of smaller modules or functions.

▶ Each module is a piece of code that implements different functionality.

▶ The program written in these languages are easy to understand, modify and debug. There is also a less possibility of errors in programs.

The End

Read this topic from your books and ask question if any confusion.

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