Lecture No 3.
By Mr. Yasir Ali
Contact No. 03058382085

➢ Types of errors

Different types of errors can occur in C++ programs. These errors are syntax errors, logical errors and run time errors.

1. Syntax errors

A collection of rules for writing programs in a programming language as known is syntax. Syntax error is a type error that occurs when an invalid statement is written in program .the compiler detects syntax errors and display error message to describe the cause of error.

Example

Typing **cout** instead of **coutt** is an example of syntax error.

2. Logical errors

A type of error that occurs due to poor logic of the programmer is called logical error. Logical errors are difficult to find because translator cannot detect these errors.

Example

- Using wrong condition in program such as writing **a < 5** instead of **a > 5.**
- Using wrong formula in the program such is writing **Average = total * 5** instead of- **Average = Total / 5.**

3. Run - time errors

A type of error that occurs during the execution of program is known is Run - time errors. It is caused when a statement directs the computer to execute and logical operation such as dividing a number by zero. The runtime errors are detected and displayed by the computer during execution run-time error are normally caused due to wrong and input from the user.

Example

The user may ask the program to open a file that does not exist. Similarly, the user may enter wrong type of data etc.

CH#3

➢ Identifier

The identifiers are the name used to represent variable constants, types, function and labels and the program.

An identifier and C + + may consist of 31 characters. If the name of an identifier is longer than 31 character the first 31 character will be used. The remaining character will be ignored by C++ compiler.

Types of identifiers

1. Standard identifier

A type of identifier that has special meaning in C ++ is known as **Standard identifier**. C++cannot use a standard identifier for its original purpose if it is redefined.

Example

Cout and **cin** are example of standard identifiers. These are the name of input/output objects defined in standard input/output library **iostream.h**

2. User-define identifiers

The type identifier that as defined by the programmer to access memory location is known as **user-define identifier**. The user-defined identifier are used to store data and program results.

Example

Some example of user-define identifiers are **a , marks and age**.

➢ Keywords

Keywords is a word in C++ language that has a predefine meaning and purpose.

Keywords are also known as **reserved words**. The total number of keywords is 63.

➢ Data Types

Data types define the type of data a variable can hold, for example an **integer** variable can hold **integer** data, a **char** type variable can hold **character** data etc.

➢ int Data type

int data type is used to store **int/ Numeric** values.

Like 35 , 6 , 8 , 23 etc.

➢ float Data type

Float data type is used to real/decimal point values.

Like 45.6 , 67.23 , 3.0 etc.

➢ Character Data type

Character data type is use to stored character values.

Like A , b , # , @ etc.

Example

```
#include<iostream>
using namespace std;
main()
  {
int a = 10;
float b= 3.5;
char c= ‘ a’;
cout<<a<<endl;
cout<<b<<endl;
cout<<c<<endl;
   }
```