

C++ basics and concepts

- Formal syntax
- Properties
- Structure of the program
- Variables, constants

Formal syntax

- A language provides a means of communication by sounds and written symbols
- Programming languages are artificial languages defined by men & women initially to communicate with computers BUT as importantly to communicate algorithms to people
- A language definition has three major components;

Components of the language

- Syntax: the way how symbols may be combined to create well-formed sentences (or programs). It deals with the form and structure of symbols without consideration given to their meaning
- Semantics: reveals the meaning of syntactically valid strings.
- Pragmatics: ease of implementation, efficiency and programming methodology

Storage models

- Data must go somewhere (storage) after program execution
- File storage: for small amounts, text files are used. For maximum portability between devices XML is a great choice
- Database storage: for large amounts of data that need to be randomly accessed with security, queried and synchronized. Databases include Access, SQL,MySQL,Oracle, etc

Why C++

- Supports object oriented programming: problem is viewed as a set of objects, code reusability
- Modular programming: Pieces of the program can be compiled separately
- Portability: can be compiled on any type of computer or operating system
- C compatibility
- Brevity: code in c++ is shorter because of certain special characters
- Speed: Resulting code from C++ compilation is very efficient