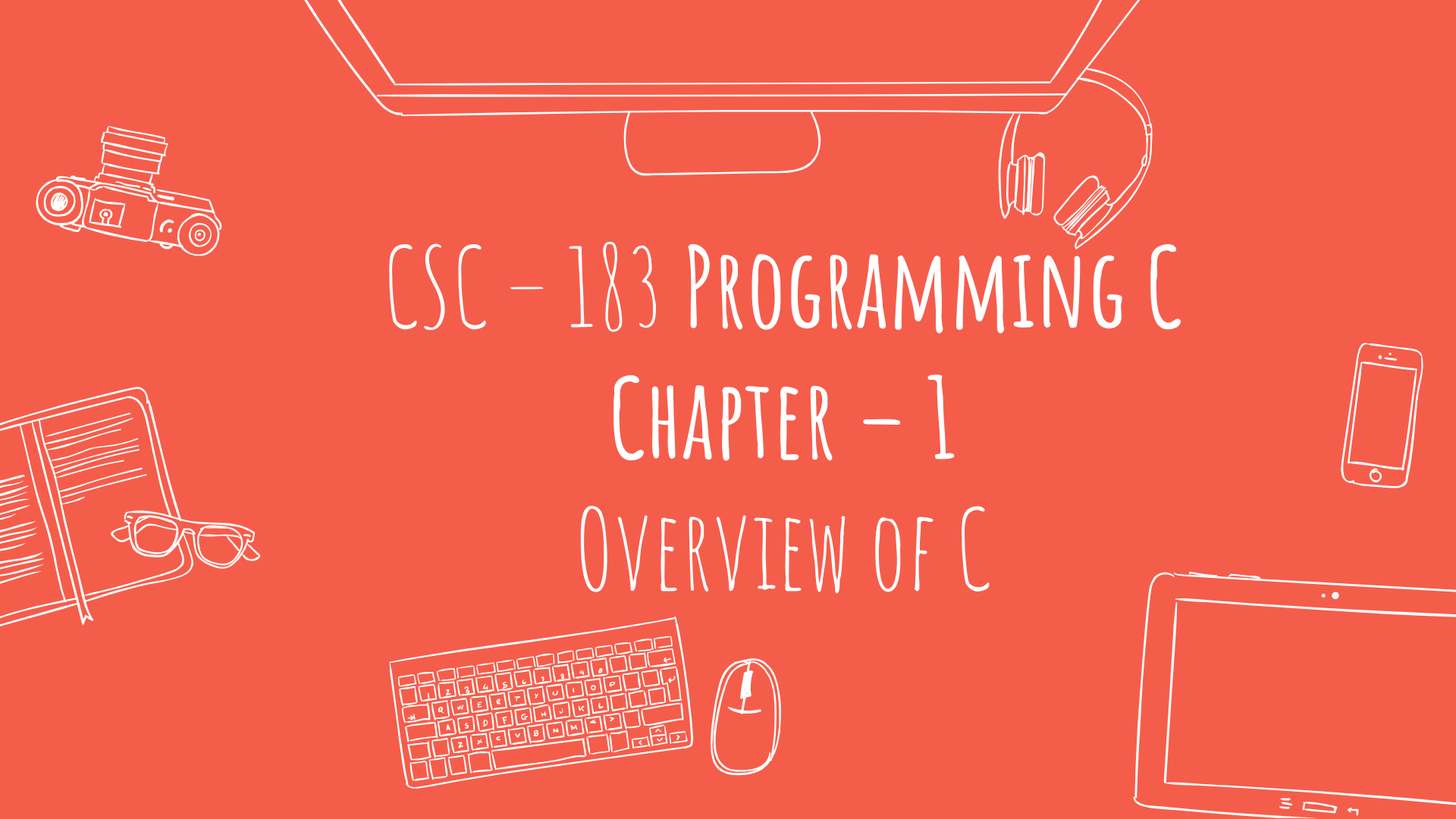


CSC – 183 Programming C

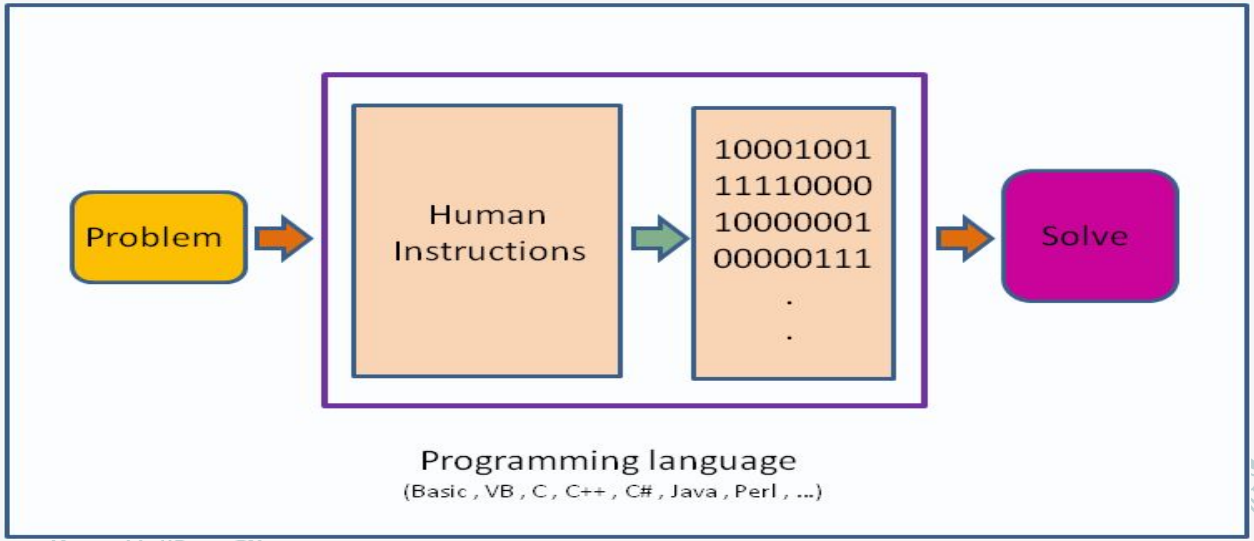
Chapter – 1

Overview of C

Introduction to Programming

What is a program?

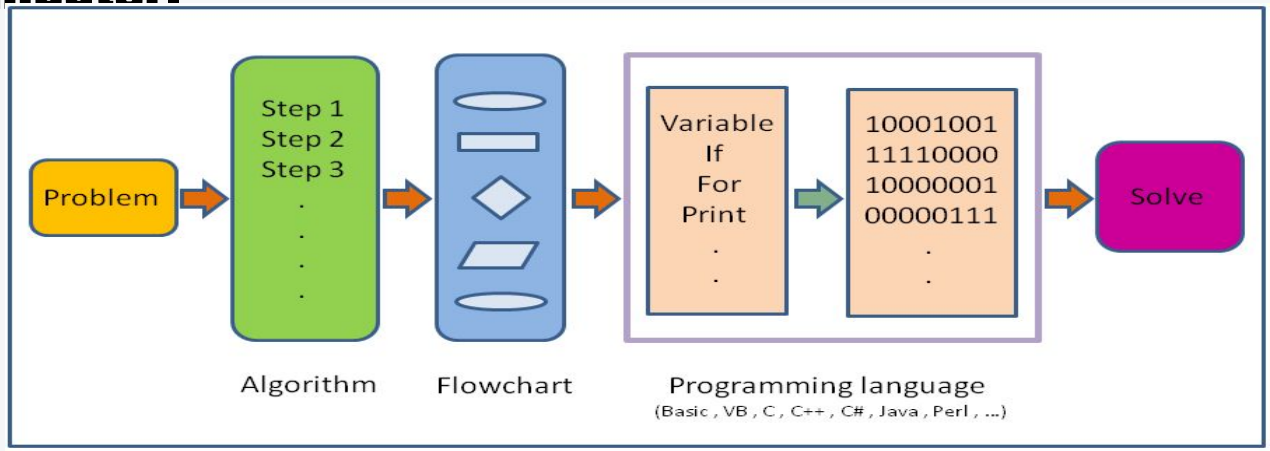
A computer program is a set of instructions that tell a computer what to do.



Introduction to Programming

What is a programming Language?

A programming language is a formal computer language designed to communicate and give instructions to a machine, particularly a computer.



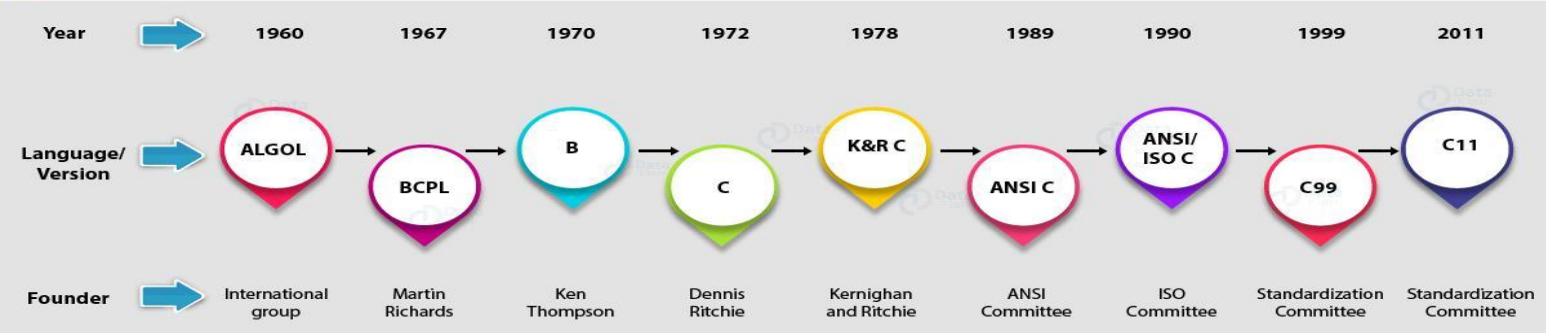
Programming C:

C is a high-level and general purpose programming language.

History of C

- ✔The root of all modern languages is **ALGOL**, introduced in 1960s.
- ✔In 1967, Martin Rachards developed **BCPL**.
- ✔In 1970, Ken Thompson created **B** by using BCPL features.
- ✔In 1972, **C** was evolved from ALGOL, BCPL and B by **Dennis Ritchie** at the **Bell Laboratories** on **DEC PDP-11** machine. Which referred as "Traditional C".
- ✔In 1978, introduced K&R C (Kerningham and Dennis Ritchie).
- ✔In 1989, ANSI approved a version of C known as **ANSI C**.
- ✔In 1990, ISO also approved this version referred as **C89**.
- ✔In 1999, Another enhanced version of C is introduced **C99**.

History of C


Year
1960
1967
1970
1972
1978
1989
1990
1999
2011
Language/ Version
ALGOL
BCPL
B
C
K&R C
ANSI C
ANSI/ ISO C
C99
C11
Founder
International group
Martin Richards
Ken Thompson
Dennis Ritchie
Kernighan and Ritchie
ANSI Committee
ISO Committee
Standardization Committee
Standardization Committee

Importance of C

- ✔C is **small** (only 32 keywords).
- ✔C has rich set of **built-in functions** and support variety of **data types** & **operators**.
- ✔C is **highly portable** (Machine independent).
- ✔C is **structured**.
- ✔C has **ability to extend** itself.
- ✔C is **stable** (the language doesn't change much).
- ✔C is **quick running** (code written in c is efficient & fast).
- ✔C is the **basis for many other**
- ✔C is a **Programmers Language**.
- ✔**It may not feel like it but C is one of the easiest language to learn.**

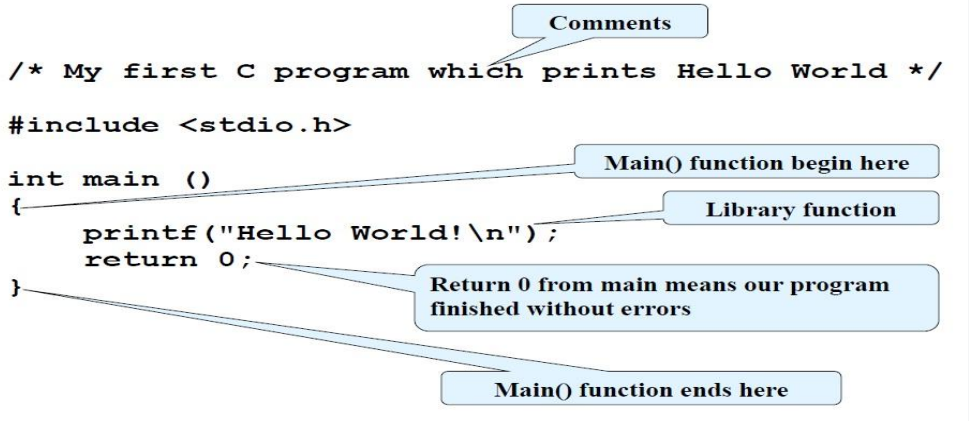
What is C used for?

C is most likely an evergreen language.
Initially, C widely known as the development language of the UNIX operating system but today virtually all new major operating systems are written in C and/or C++.

- ✔**Systems programming:** OSes, like Linux.
- ✔**Microcontrollers:** Automobiles and Airplanes.
- ✔**Embedded processors:** Phones, Portable Electronics etc.
- ✔**DSP processors:** Digital Audio.

Structure of C program

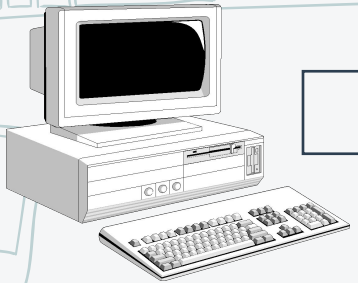
Hello World Program

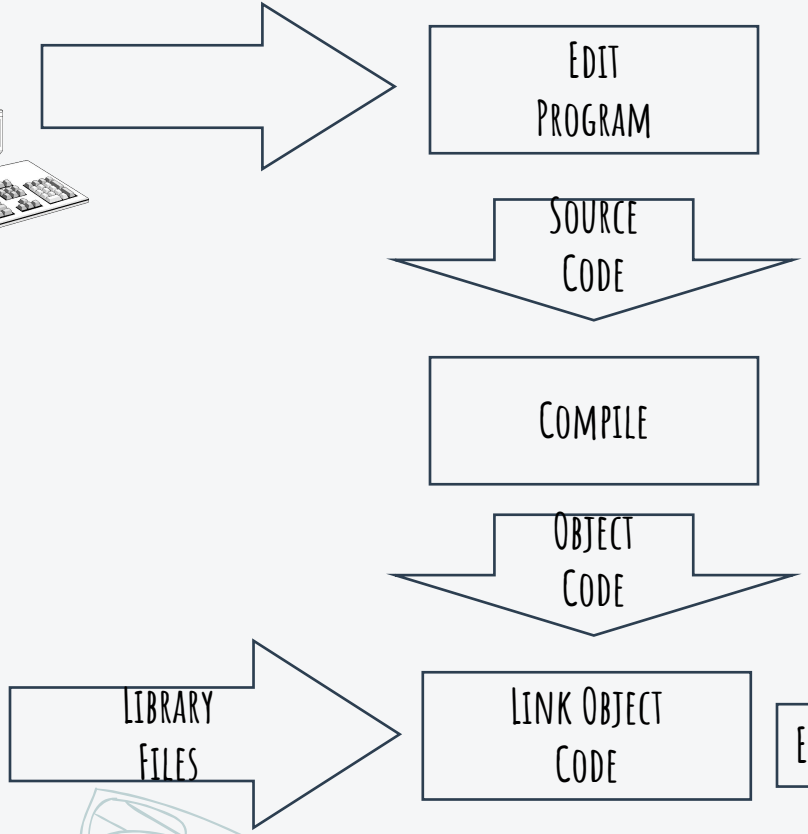


Programming Style

- ✔You should follow one style for programming
- ✔We must develop the habit of writing programs in lowercase letters, because C programs statements are written in lowercase letters
- ✔Uppercase letters are used only for symbolic constants
- ✔Braces,{} indicates beginning and end of a functions
- ✔Need, braces to align for easy readability
- ✔write one statement into one line, although C support multiple statement in a single line

Process for Executing A 'C' Program





Executing a program written in C involves a series of steps. There are:

- ✔ Creating the program
- ✔ Compiling it
- ✔ Linking the program with functions that are needed from the C library
- ✔ Executing the program