

Introduction to Programming and Problem Solving

Saiful Islam , Lecturer
Dept. of CSE, DIU

Agenda

- What is Programming?
- What is Problem Solving?
- How are they related?
- What Programming language should we learn?



What is Programming?

- Language
 - a medium to communicate
- Creating methods for computer
 - to make the computer more functionable
- Creating Mechanical Intelligence
 - to make a machine able to provide answer of a particular problem
- Create something new inside



What is Problem Solving?

- Find the solution of a problem
- Through
 - Reasoning
 - Step by step process
 - Accuracy and Precision



How do you make a cup of Tea?



How do you make a cup of Tea?

- Boil the water
- Put Tea leaves
- Add Sugar
- Add milk

- Take a pot
- Add water to the pot
- Falme the Gas oven
- Put the pot on it
- Wait until the water is boiled
- Put Tea leaves
- Add Sugar
- Add milk

Which do you think is better n why?



Programming vs. Problem Solving:

- To solve a problem you need to
 - understand the question
 - Formulate the steps
 - Make sure that the steps you provided will definitely reach to the goal. That is the solution of the problem.
- To do Programming
 - First you need to solve the problem
 - Then figure out a way to convert your steps to a language that the meachine can understand

Remember. The meachine is a mindless donkey who is only good at following instructions.



Which Programming Language we will learn!!

- C & C++
 - Structured
 - Mid level language
 - Mother tongue of all language
- Features:
 - Reliability
 - Portability
 - Flexibility
 - Modularity
 - Efficiency and Effectiveness



History of C

- The C language is a structure oriented programming language, developed at Bell Lab (AT&T) in 1972 by Dennis Ritchie
- C language features were derived from an earlier language called “B” (Basic Combined Programming Language – BCPL)
- C language was invented for implementing UNIX operating system
- In 1978, Dennis Ritchie and Brian Kernighan published the first edition “The C Programming Language” and commonly known as K&R C
- In 1983, the American National Standards Institute (ANSI) established a committee to provide a modern, comprehensive definition of C. The resulting definition, the ANSI standard, or “ANSI C”, was completed late 1988.

Uses of C language!

- The C language is used for developing system applications that forms a major portion of operating systems such as Windows, UNIX and Linux. Below are some examples of C being used.
 - Database systems
 - Graphics packages
 - Word processors
 - Spreadsheets
 - Operating system development
 - Compilers and Assemblers
 - Network drivers
 - Interpreters



Key points to remember in C language

- The C language is structured, middle level programming language developed by Dennis Ritchie
- Operating system programs such as Windows, Unix, Linux are written in C language
- C89/C90 and C99 are two standardized editions of C language
- C has been written in assembly language



The background is a solid pink color. In the top right corner, there is a decorative pattern of overlapping squares and triangles in various shades of pink, creating a geometric, stepped effect.

THANKS