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Innovative and Creative C Programming Language

Shaveta

MCA, Ferozepur, Punjab, India

ABSTRACT

A programming language is a set of instructions that contain prototypes for putting the instructions together to create commands. A software engineer wants to write general and well-structured programs that are flexible an easy to maintain. Specialized software must be efficient. However, the development of specialized software is time consuming. New techniques are required to solve this so-called software crisis. The content of my research is analysis and transformation of C programs. We develop several analyses that support transformation of a program into its generating extensions.

Keywords : C Language programming, C89/C90 and C99, UNIX

I. INTRODUCTION

C Language programming is one of the main and general first language for computer science major students.

As the first programming language it is difficult to learn and teach for both of students and teachers. On tradition teaching methods, we have to introduce statements and syntaxes, in addition to some simple examples.

But this method is lacking logic system training in programming approach, and students taught by this mode are not so competent for handling problems occurring in programming.

'C' is a procedural, structured, modular language that has been widely used for both operating systems and applications.

Many versions of UNIX- based operating systems are written in C. C has been standardized as part of the portable operating system interface POSIX. Starting from regular C programming language descriptions, the design methodologies repeat a number of small refinements into target designs.

'C' must be extended to be able to represent such concurrency, an effective and efficient formal verification of synchronization of concurrent processes is one of the most important issue in system level designs. The proposal formal methodologies and are very efficient by utilizing the fact that the design methodologies consist if lots of small refinement steps.

II. HISTORY

- 'C' programming a powerful programming language is an ANSI/ISO standard for developing real time applications.

- ‘C’ programming language was invented by Dennis Ritchie at Bell Laboratories in1972.
- ‘C’, a structure-oriented programming language was invented for implementing UNIX operating system.
- ‘C’ programming language features were derived from earlier language called ‘B’ (Basic Combined Programing Lange – BCPL).
- In 1978, Dennis Ritchie and Brian Kernighan published the first edition. “The C Programming language” and commonly known as K&RC.
- In 1983, the American National Standard Institute(ANSI) established a committee to provide a modern, comprehensive definition of C. The resulting definition, the ANSI standard or “ANSI C” was completed in late 1985.

III. FEATURES OF C PROGRAMMING LANGUAGE

It is easy to learn and use. ’C’ Programming language even today. All other programming languages were derived directly or indirectly from ‘C’ programming concepts. ‘C’ programming is the basis for all programming languages.

Main Features of C Programming language are: -

- Reliability
- Portability
- Flexibility
- Interactivity
- Modularity
- Efficiency and effectiveness
- It is a procedural programming paradigm, with facilities for structured programming.
- Lexical variable scope and recursion.
- A static type system which prevents many meaningless operations.
- Function parameters are generally passed by value (pass by reference is achieved in ‘C’ by explicitly by using pointer values).
- A small set (usually 32) of reserved keywords.

IV. PHILOSOPHY

‘C’ is a minimalistic programing language among its designs goals were that it could be compiled in a straight forwarded manner using a relatively simple, Compiler provide low level access to memory, generate only a few machine language instructions for each of its core language elements, and result, C code is suitable for many systems programming applications that had traditionally been implemented in assembly language.

Despite its low-level capabilities, the language was designed to encourage machine independent programming. A standard compliant and portably written ‘C’ program can be compiled for a wide variety of computer platforms and operating systems with minimal change to its source code. The language has become available on a very wide range of platforms, form embedded microcontrollers to super computers.

V. APPLICATIONS

The C Programming language is used for developing system applications that form a major portion of operating systems such as windows, UNIX and Linux. Some examples where ‘C’ is used: -

- Database Systems
- Graphic Packages
- Interpreters
- Compilers and Assemblers
- Network drivers
- Operating System development

- Word processor
- Spreadsheets

VI. KEY POINTS TO REMEMBER C LANGUAGE

1. The C language is structured, middle level programing language developed by Dennis Ritchie.
2. Operating system programs such as Windows, Unix, Linux are written in ‘C’ language.
3. C89/C90 and C99 are standardized editions of C language.
4. ‘C’ has been written in assembly language.

VII. CONCLUSION

From the above review, we can conclude that this language has emerged as an important parameter for solving complex engineering problems of various fields. Programming is necessary ability fir advanced studies in Science, Technology and Engineering. ‘C’ helps the students to develop the programming skills. Once a student who has learned C, it is very easy for student to learn other programming languages and use them for developing software with enhanced levels for output. Hence C programming should be taught to all engineering aspirants, enhancing their software skills for engineering applications.

Therefore the teaching methods of C language programming needs reforming. After years of experiencing the new teaching mods, we come to a conclusion that teaching C language programming should be based on the programming approach, importing the software engineering ideas into teaching, and practicing case studies and project learning mode, i.e teaching students in accordance with their aptitude. This teaching mode has brought us great achievement so far.

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