

# 19-CSE100 - PSAT(Problem Solving and Algorithmic Thinking)

**Programming language survey assignment(C Language)**

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- 1) C is a general-purpose programming language created by Dennis Ritchie at the Bell Laboratories in 1972.
- 2) It is a very popular language, despite being old.
- 3) C is strongly associated with UNIX, as it was developed to write the UNIX operating system.
- 4) Many later languages were introduced directly or indirectly from C.
- 5) It is successor to the programming language B.



# Why to learn C language

- 1) It is one of the most popular programming language in the world.
- 2) If you know C, you will have no problem learning other popular programming languages such as Java, Python, C++, C, etc, as the syntax is similar.
- 3) C is very fast, compared to other programming languages like java and python.
- 4) C is very versatile, it can be used in both applications and technologies. This slide shows the example for Blocks.



# Applications of C language

The development of system software and desktop applications is mostly accomplished via the use of C programming. The following are some examples of C programming applications

- 1) Operating Systems:** High-level programming language built in the C programming language was used to construct the first operating system, which was UNIX. Later on, the C programming language was used to write Microsoft Windows and several Android apps.
- 2) GUI (Graphical User Interface):** Adobe Photoshop has been one of the most widely used picture editors. It was created entirely with the aid of the C programming language. Moreover, C was used to develop Adobe Illustrator and Adobe Premiere.
- 3) Embedded Systems:** The C programming language is the recommended language for creating embedded system drivers and applications.
- 4) Gaming and animation:** Since, the C programming language is based on a compiler and is thus far quicker than Python or Java, it has gained popularity in the game industry. Some of the most basic games, such as the Dino game, Tic-Tac-Toe, and the Snake game, are written in C programming languages. In addition, doom3, a first-person shooter horror game developed by id Software in 2004 for Microsoft Windows and written in C, is one of the most powerful graphics games ever created.
- 5) 3D Movies:** Commonly used to make 3D videos, because they handle a large quantity of data and do many computations per second, these apps must be extremely efficient and quick.



# Advantages of C Language

- 1) Easy to learn
- 2) Fast execution speed
- 3) Low cost
- 4) Procedure oriented language
- 5) Easy debugging
- 6) Structured programming language



# Hello world programme

**Include:** In C, all lines that start with pound ( # ) sign are called directives. These statements are processed by the program invoked by the compiler. The include directive tells the compiler to include a file and `include<stdio.h>` tells the compiler to include the header file for Standard Input Output file which contains declarations of all the standard input/output library functions.

**Int main( ) :** This line is used to declare a function named "main" which returns data of integer type. A function is a group of statements that are designed to perform a specific task. Execution of every C program begins with the `main()` function, no matter where the function is located in the program. So, every C program must have a `main()` function and this is the function where the execution of program begins.

**and :** The opening braces `{` indicates the beginning of the main function and the closing braces `}` indicates the ending of the main function. Everything between these two comprises the body of the main function and are called the blocks.

**`printf("Hello World");`** This line tells the compiler to display the message "Hello World" on the screen. This line is called a statement in C. Every statement is meant to perform some task A semi-colon `;` is used to end a statement. Semi-colon character at the end of the statement is used to indicate that the statement is ending there. The `printf()` function is used to print character stream of data on stdout console. Everything within `" "` is displayed to the output device.



# Hello world programme

**Return 0;** This is also a statement. This statement is used to return a value from a function and indicates the finishing of a function. This statement is basically used in functions to return the results of the operations performed by a function

**C programme to print hello world :**

```
#include <stdio.h>
int main()
{
    printf("Hello World!");
    return 0;
}
```

**Figure:** Hello world syntax





## Significant features of C language:

- 1) Dynamic memory management
- 2) Modularity with structured language
- 3) Simple and efficient
- 4) Function rich libraries
- 5) Mid-level programming language



The languages that were developed by depending directly or indirectly from C were

- 1 C++
- 2 Python
- 3 Java
- 4 JavaScript
- 5 Perl
- 6 PHP
- 7 Verilog
- 8 Limbo



## References:

<https://www.geeksforgeeks.org/c-hello-world-program/>

[https://en.wikipedia.org/wiki/C\\_\(programming\\_language\)](https://en.wikipedia.org/wiki/C_(programming_language))

<https://www.w3schools.com/>



# Thank you

## Thank You...!

