

Power Point Presentation

on

Topic: C & C++



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C PROGRAMMING LANGUAGE



What is C?

- *C is a high-level structured oriented programming language, used in general-purpose programming .*
- *C works with an in-built complier, as it works on converting C from being a programming language into a machine readable coded language.*
- *C is the most preferred language for decades now, due to its high performance, remarkable efficiency and its portability.*
- *C is a successor of 'Basic Combined Programming Language' (BCPL) called B language.*

What are the advantages of C?

- **Portable:** *Its portability allows code to run on different computers and different operating systems without making any change.*
- **Efficient:** *It is a general-purpose programming language. Therefore it works efficiently.*
- **Case-sensitive:** *You need to be very careful while writing the code as it treats lowercase and uppercase letter differently.*
- **Memory Manipulation and allocation:** *It has the ability to manipulate arbitrary memory addresses. It also allows allocating the memory dynamically.*
- **Middle-level language:** *It merges the features of both low level and high-level languages in itself.*



What are the disadvantages of C?

- *C language is devoid with the terminology and the concept of OOPS which is a very popular and an important concept these days among all high-level programming language.*
- *No Strict type checking possible.*
- *No checks for runtime*
- *It doesn't give us the provision of having a namespace.*
- *It also doesn't have the concept of the constructor as well as a destructor.*

Why should we use C language?

- *It makes the code size small.*
- *It is efficient, portable, structured and well understood.*
- *It has only 32 keywords which are easy to remember.*
- *It is near to Assembly language as code written in C language runs as fast as code written in assembly language.*
- *It has Pointers which connects hardware like as kernel, drivers to a system, because of this reason C will always be in use.*

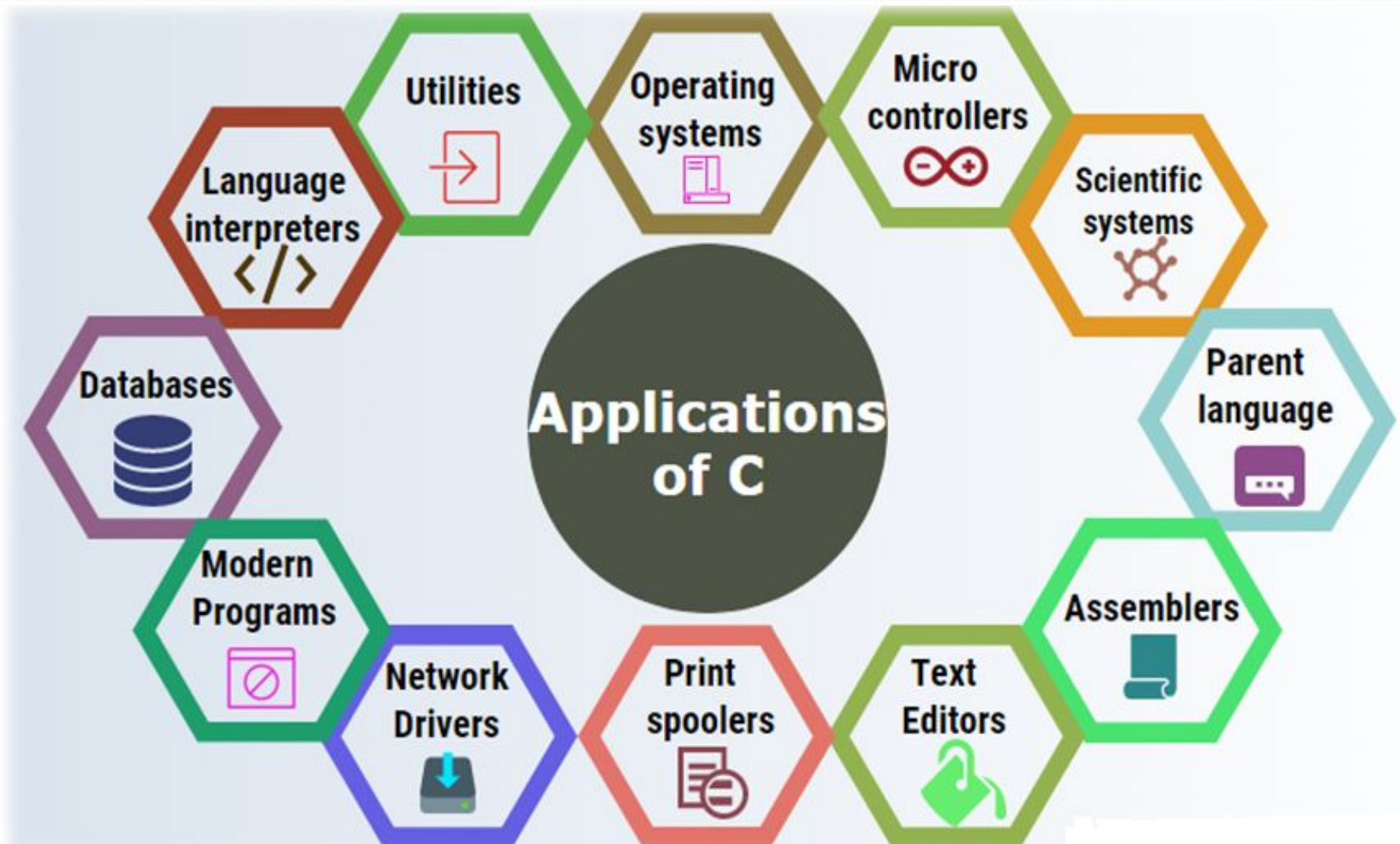


What are the characteristics of C?

- ***Low-level memory access:*** *The lightweight programming language requires a low level of memory access and hence is a good fit for system programming.*
- ***Simplified keyword set:*** *Rich and easy to understand and use a set of simplified keywords that meet one of the most important characteristics of this language*
- ***The clean style:*** *This language focuses on keeping the code neat and tidy and hence the code flow is clean.*
- ***Pointer mechanism:*** *The efficient use of pointer and addressing mechanism in C language makes it a unique and a different characteristic from all other programming languages.*

- *It is a very robust language with a rich set of built-in operators and functions.*
- *The programs which are coded in C are fast and more efficient*
- *It is a highly portable language. It means that once the programs which are written in C can easily run on various other machines with next to no modification.*
- *It has a very huge collection of the library or built-in functions. It also provides us the capabilities to custom or create our own function and include it in the collection of C library.*
- *It is a highly extensible language.*

What are applications of c?



What are the basic commands of c?

- **#include:** *This is the main header file preprocessor command which includes standard input and output header file such as stdio.h from the C library repository before the program is compiled.*

```
#include <stdio.h>
```

- **int main():** *This C command, as in most of the programming languages is the main function which is generally the starting point of the program execution. All other methods and functions are called once the primary main () is executed.*

```
int main()
```

- *{ : These are the curly braces which are not only C language specific but are common in any programming language. This indicates the beginning of a method or a function definition.*

```
{
```

- ***Printf:** This C command is used to print the output to the console screen.*

```
printf("Hello World");
```

- ***Getch():** This command is used to wait for any input from the user.*

```
getch();
```

- **Return 0:** *This C command is used to terminate the C program or main function and returns 0.*

```
return 0;
```

- **}** : *These curly brackets are used to close the function or method block.*

```
}
```

C++



What is C++?

- *C++ is one of the most flexible and efficient general-purpose programming languages which is a superset of C programming language where most tools and libraries supported in C could be used in C++ as well.*
- *C++ is a cross-platform language that can be used to create high-performance applications.*
- *C++ was developed by Bjarne Stroustrup, as an extension to the C language.*
- *C++ gives programmers a high level of control over system resources and memory.*



What are the characteristics of C++?

- *An object is an entity on which we would talk about and would create programs using it. Any entity in real life such as table, board, duster, etc., could be an object.*
- *The second feature is the class which is a group of objects. Classes consist of all the functions and the variables in a program.*
- *Encapsulation internally hides the operation of a function. For, e.g., when we ride a bike, we press the accelerator but doesn't know what's happening behind the scenes or how the engine is working. In layman terms, it wraps the data into a class, and hence only the function is allowed to access the data.*

- *Inheritance gives a class the ability to use the features and properties of its parent class. The inherited class could be of type Public, Private, and Protected. Also, new features could be added to the child class as well. The inheritance could be single level, multi-level, multiple, and even hierarchical.*
- *Polymorphism is the property in which one entity could have multiple forms which allow the object to behave differently in different situations. It could be static as well as dynamic.*
- *At run-time, objects could communicate among each other by sending data to and fro with the help of message passing interface.*



What are the applications of C++?

- *C++ is widely used in the Gaming industry. Various companies hire people with a knowledge of C++ to build interactive games for them.*
- *In software like Adobe Photoshop or Illustrator, C++ is used as well.*
- *We can use C++ to create web browsers like Mozilla Firefox and compilers.*
- *The operating systems are also programmed in C++.*
- *The medical industry used C++ to build most of their software.*
- *Few of the other programming languages like Java are built using the C++ language.*

What are the advantages of C++?

- *C++ is a very efficient language which is fast and reliable.*
- *C++ has a wide range of usage and hence learning the language makes it easier to grasp the Object Oriented Programming Concept.*
- *C++ makes it easier to learn other programming languages as well.*



What are the disadvantages of C++?

- *C++ could often be hard to master.*
- *The error messages in C++ could be extended and often difficult to debug.*
- *It could be difficult to access the libraries in C++ even.*
- *The code could be prone to errors as C++ doesn't provide type-checking.*



What are the components of C++?

● *First Component :*

*The first component in this program is the header file denoted by **#include<iostream>** command which contains the **cout** command that is being used to print 'Hello World' in this case.*

● *Second Component :*

*The second component is the '**int main()**' statement which is the Master Program Function and is a prerequisite of every C++ program to have the main function at the beginning of execution. The opening parenthesis after the main should have a matching closing parenthesis. The 'int' is the return type.*

● **Third Component :**

The third component is the declaration of variables which in this case are 'd' and 'i'. A variable is assigned a name with regards to which it stores data in the memory. It needs to support the C++ inbuilt data types.

● **Fourth Component :**

The Program Statement is another component of C++. In this case, the for loop is used to copy values from one variable to another. Comments are also included in the program using the "//"

● **Fifth Component :**

Operators are another component in C++.





Thank you...