

1. what is C language?

- C is a fast, powerful programming language
- C used to build system software like operating systems and embedded applications.
- C is created by Dennis Ritchie at Bell Labs in the early 1970s. and it is most influential language
- and there are some key features in C language Some are mainly used at present
 - operating systems: operating systems they act as intermediary b/w the user and the machine
eg: Linux and Android.
 - Embedded systems: these are widely used in devices like microcontrollers, IoT devices.
 - game engines
 - compilers and interpreters
 - Database systems
 - performance - critical software.
 - Now days the people are learning C-language because these are useful for system level programming and competitive programming

5. What is format Specifiers?

- format specifier is a placeholder
- it is used for input/out functions like printf() and scanf()
- it tells the compiler how to interpret a variable's data and how to present it.
- All the format specifiers start with the % symbol.
- After indicating specifier character is indicated like %d for integer, %f for float, %s for string.

| Format Specifier | Data type | Description |
|------------------|---------------|------------------------------------------------|
| %d | int | signed decimal integer |
| %u | unsigned int | unsigned decimal integer |
| %f | float, double | floating-point number |
| %c | char | single character |
| %s | char* | string (array of characters) |
| %p | void* | pointer address |
| %x %a | int | (lower case/upper case) Hexadecimal integer |
| %X | int | Octal integer |
| %o | | |

3. What is a Variable?

- In "C" a variable is a named storage location in memory that holds a value
- Name (Identifier): each variable is given a unique name that we use to refer to it in our code.
 - And these can't start with a number
- Datatype: Every variable in C must have a specified data type.
For example: int, float, char, double
- Variables are fundamental in "C" as they allow us to store, manipulate and process data dynamically.

- Database development - MySQL and other DB systems use C.
- Networking - networks, drivers, protocols, communication modules.
- compilers & interpreters - many language compilers
- high-performance apps - graphics, scientific computing

Programming

2. who Applications of C - Programming?

- here are some common applications.

Applications of C Language:

- operating systems - windows, Linux and many kernels
- Embedded system - microcontrollers , IOT devices, automotive systems
- Game development - game engines and high-performance modules.