1. What is c language ?

the clanguage is general - purpose, procedural. computer programing language developed in the early 1970s by Deinis Ritchic of Bell labs.

key characterists.

Mid - level language :- It contains features of both low level Circle assembly, allowing memory manipulation and high level languages (providing structures and portability.

Procedural :- Programs providing are organised into functions (procedures) that containstuae squences of staments to be executed.

portability :- C compails are avaible for almost every computer architectare, making code written in highly portable

Memory Mongement :- It allows for direct memory manipulati using pointers, which gives programers finegrained control but also requers caroful handing.

Foundation :- Many moderon languages (like C++, java, python) and operating system (like Linux and parts of windows) are either written in c or haveily intluenced by its syntax and concepts.

2. What are the applications of cprograming?

A :- The c language is foundational in sortware development primarily due to efficiency, speed and capability for low level - hard ware interction.

1. Operating systems (os) :-

. Core development :- Used to write the kernel the heart of the os (e.g linux, UNIX).

. Reason :- Provides direct memory access and generate highly efficient machine code.

2. Embaed system & IOT :-

. Hardware control :- Ideal for resource - constrained davies (small memory /cpu) like microcontrolls, trafficlights smart home applications, and cameras.

. Reason :- Small memory foot print and fast execution speed are essential.

3. System Programing & utilities :-

. Device Drivers :- Used to create software interfaces for hardware devices (eg. printers, graphics).

. Utility Tools :- Building essential system commands and ohlity (eg is grep in Unix)

4 Compilers and interpreters.

. language Tools :- The underlying code for many compolies (eg. Gcc) and the core interpreters for languages like python (Cpython) are written in C.

. Reason :- C's speed is leveraged to translate and excute other programaing languages.

3. What is variable ?

A:- A variable in computer programaing is named storage location in the computers memory (RAM) that holds a valo. The value stored in this location can change during the execution of program, which is why it is called "variable".

4) What are the data types in C progamaing.

An: The primary fundamental data types in C programaing are:

- int : For integer (whole numbers)
- char : for a single character or small integers.
- float : for single-precision floating-point numbers (num with a decimal point).
- double : for double-pression floating-point numbers (more precise than float).
- Void : Used for specifying a function that returns value or for generic pointers

5. What is format specifier ?

An: A format speetier is a place holders used in input/output functions in clike programing languages (such as C, C++, and others to tell the compiler what type of data for output

They are typically preceduced by a percent sign "%.

An:

Spacifyer	data type in handles	pescription.
%.dor%i	int	speed decimal integer.
%f	float or double	decimal floating numbers
%.C	char	single characte
%.lf	double	used floating (scanf) a double for prinf
%.s	chart	string [array of character.
%.u	usigned	unsigned decimal integer
%P	pointer	memory address pointter