Interview questions

1. What are the different Key words used in C?

* **auto**: This keyword declares automatic variables. It's rarely used in modern C programming.
* **break**: It is used to terminate the loop or switch statement.
* **case**: It is used in the switch statement to specify different conditions.
* **char**: It is a data type used to store characters.
* **const**: It is used to declare constants, variables whose values cannot be changed.
* **continue**: It is used to skip the current iteration of a loop.
* **default**: It is used in the switch statement and is executed when none of the cases match.
* **do**: It is used to create a do-while loop.
* **double**: It is a data type used to store double-precision floating-point numbers.
* **else**: It is used in decision-making statements.
* **enum**: It is used to define a set of named integer constants.
* **extern**: It is used to declare variables or functions that are defined in another file or are external to the current file.
* **float**: It is a data type used to store floating-point numbers.
* **for**: It is used to create a for loop.
* **goto**: It is used to transfer control to a labeled statement.
* **if**: It is used in decision-making statements.
* **int**: It is a data type used to store integers.
* **long**: It is a data type used to store large integers.
* **register**: It is used to declare register variables, which are stored in CPU registers for faster access.
* **return**: It is used to return a value from a function.
* **short**: It is a data type used to store small integers.
* **signed**: It is used to declare signed data types.
* **sizeof**: It is used to determine the size of a data type or variable.
* **static**: It is used to declare static variables and functions, which retain their values between function calls.
* **struct**: It is used to define a structure, a collection of variables under one name.
* **switch**: It is used to create a switch statement.
* **typedef**: It is used to create new data type names.
* **union**: It is used to define a union, a data structure that can hold variables of different types at different times.
* **unsigned**: It is used to declare unsigned data types.
* **void**: It is a data type that represents an absence of type.
* **volatile**: It is used to declare variables that may be modified externally, so the compiler should not optimize accesses to them.
* **while**: It is used to create a while loop

1. How to do memory management in C?

Ans: memory management involves dynamically allocating and releasing memory using functions like **malloc(), calloc(),realloc()** and **free(),**

Example:

int \*ptr = (int \*)malloc(sizeof(int)); // Allocate memory for an integer

free(ptr);

1. What is a Date code?

Ans: date code is a set of characters or numbers used to indicate the manufacturing date of a product.

1. What are the volatile key words?

**volatile** keyword is used to indicate that a variable may be changed unexpectedly by factors outside the program's control, such as hardware or other threads, and therefore should not be optimized by the compiler

* when we use volatile keyword will get latest value in the memory

1. Can we use constant and volatile at the same time?

Ans: yes

1. What is macro?

Ans: it is a preprocessor directive it can be used to define with a constant value and conditional compilation

Storage classes in c

Ans: "storage class" refers to the scope and lifetime of variables, as well as their default initialization

1. **auto**: Variables declared with the **auto** storage class are automatically created when a block is entered and destroyed when the block is exited. This is the default storage class for all local variables.
2. **extern**: Variables declared with the **extern** storage class are defined outside of any function block. They can be accessed by any function in the program. These variables have a global scope and their value persists throughout the program's execution.
3. **static**: Variables declared with the **static** storage class retain their value between function calls and have a local scope (they are accessible only within the function in which they are declared). If declared outside any function, they have file scope and are accessible only within the file where they are declared.
4. **register**: The **register** storage class is used to define local variables that should be stored in a CPU register for faster access. However, the **register** keyword is rarely used in modern C programming as modern compilers are efficient at optimizing register usage themselves.