14 Lecture - CS201

Important Subjective

1. What is a pointer in C programming?

A pointer is a variable that stores a memory address. It allows programmers to directly manipulate memory and is useful for efficient dynamic memory allocation.

2. How do you declare a pointer variable in C?

A pointer variable is declared by adding an asterisk (*) before the variable name, for example: int *ptr;

3. What is the purpose of the ampersand (&) operator in C?

The ampersand (&) operator is used to get the address of a variable in memory, for example: #

4. How do you access the value pointed to by a pointer in C?

You can access the value pointed to by a pointer by using the dereference operator (*) before the pointer variable, for example: *ptr;

5. What is a null pointer in C?

A null pointer is a pointer that does not point to any valid memory location. It is represented in C by the value 0 or NULL.

6. How do you use pointers to dynamically allocate memory in C?

You can use the malloc() function to dynamically allocate memory in C, and then use a pointer to access the allocated memory, for example: int ptr = (int) malloc(sizeof(int));

7. How do you pass pointers as function arguments in C?

You can pass pointers as function arguments by declaring the function parameter as a pointer and then passing the memory address of the variable as an argument, for example: void myFunction(int *ptr);

8. What is a pointer arithmetic in C?

Pointer arithmetic in C involves manipulating the memory address stored in a pointer variable using arithmetic operations, such as addition or subtraction.

9. What is a void pointer in C?

A void pointer is a special type of pointer that can point to any type of data. It is useful for generic programming and dynamic memory allocation.

10. How do you use pointers to manipulate arrays in C?

You can use pointers to manipulate arrays in C by using pointer arithmetic to access array elements, for example: int arr[5] = {1, 2, 3, 4, 5}; int *ptr = arr; printf("%d", *(ptr + 2)); // prints 3