

3 Lecture - CS410

Important Subjective

1. Question: What is an array in C?

Answer: An array in C is a collection of elements of the same data type, stored in contiguous memory locations and accessed using an index.

2. Question: How do you declare an array in C?

Answer: You declare an array in C using the syntax: `"data_type array_name[size];"`

3. Question: Explain the concept of pointers in C.

Answer: Pointers are variables that store memory addresses. They are used to manipulate memory directly and are useful for dynamic memory allocation.

4. Question: How do you declare a pointer in C?

Answer: To declare a pointer in C, you use the syntax: `"data_type *pointer_name;"`

5. Question: What does the "sizeof" operator do with arrays and pointers?

Answer: The "sizeof" operator returns the size of an array in bytes and the size of a pointer in the specific platform's memory address length.

6. Question: How do you access elements of an array using pointers in C?

Answer: You can access array elements using pointers by dereferencing the pointer and using the array index notation, like `"*(ptr + index)"`.

7. Question: What happens when you pass an array to a function in C?

Answer: When an array is passed to a function, it decays into a pointer, and the function receives a pointer to the first element.

8. Question: How do you dynamically allocate memory for an array using pointers in C?

Answer: You can use functions like "malloc" or "calloc" to dynamically allocate memory for an array and assign the memory address to a pointer.

9. Question: How do you deallocate memory for a dynamically allocated array in C?

Answer: You use the "free" function to deallocate memory for a dynamically allocated array.

10. Question: Explain the concept of pointer arithmetic in C.

Answer: Pointer arithmetic involves performing arithmetic operations (like addition or subtraction) on pointers. This allows moving to different memory locations based on the pointer's data type, size, and the operation performed.