Lec 20 Array Extra:

This session covers how to create and manage multi-dimensional arrays in Java using user input, including building dynamic data structures for colleges, departments, and students. It also explains how to pass arrays to methods, return arrays, work with anonymous arrays, and solve real-world problems using arrays, such as calculating discounts, checking attendance eligibility, and simulating prison cell states.

Dynamic Multi-Dimensional Arrays with User Input

Multi-dimensional arrays can be created to store complex data, like colleges with departments and students. By using nested loops and user input, the size and structure of these arrays become dynamic, adapting to the user's choices at runtime.

Looping for Dynamic Data Entry

Loops allow repetitive tasks, such as entering department or student information for each college, without knowing the number of entries in advance. This makes the program flexible for any number of colleges, departments, or students.

Filling and Printing Multi-Dimensional Arrays

To fully utilize a multi-dimensional array, three nested loops are used: one for colleges, one for departments, and one for students. This lets you fill and retrieve data from each specific location in the structure.

Passing and Returning Arrays in Methods

In Java, arrays can be passed to and returned from methods, since arrays are objects. This allows for modular code, where array data can be manipulated and accessed across different parts of a program.

Anonymous Arrays

Anonymous arrays are arrays created without a specific name, often used when you need a temporary array for a method call. They help reduce code clutter and are useful for quick, one-time operations.

Making a method which returns (new int[size];) → a array on giving input of length in the method to specify length of array you want.