CC4 Laboratory Activity #3
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Topics Covered: Array Addressing Computation

Estimated Completion Time: 3 meetings (6 hours)

Objectives:

1. To appreciate how Arrays occupy memory space and how the operating system and programming language work together for posteriori estimation.

2. To be able to simulate how elements of an Array are stored and accessed in memory when used as data structures in a program.

Problem: Create a running program that generates formulae to compute Array Addressing for any number of dimension the user inputs. Your program should:

a. Ask the user to input the desired number of dimensions
b. Ask the user to input the upper bounds of each dimension
c. Ask the user for the starting address
d. Ask the user for the esize of the array data type
e. Compute and output the total number of elements that the array can hold based on letter a
f. Let the user search elements in the array
g. Output the computed memory address based on the formulae generated as per the number of dimensions

Sample Output:

```
Enter Dimension : 4
Enter UB1 : 10
Enter UB2 : 3
Enter UB3 : 3
Enter UB4 : 6
Enter Starting address : 2000
Enter esize : 4
Total number of Elements in the Array: 540.0

***SEARCH FOR MEMORY ADRESS OF ith ELEMENT***

Input search index at dimension 1:2
Input search index at dimension 2:2
Input search index at dimension 3:0
Input search index at dimension 4:4
MEMORY ADDRESS: 2592.0
Done.
```