ICT 5101

Lecture 5

Dr. Hossen A Mustafa

Assignment

- Write a program named assignment3.c

- The program should take 5 Integers n1, n2, n3, n4, n5 as input from keyboard

- The program should output :
  - The maximum of the input numbers
  - The minimum of the input numbers

- Example:
  - Input = 10 5 3 7 21
  - Output
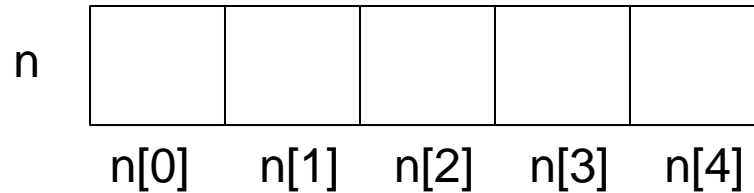   - MAX = 21
    - MIN = 3

Arrays

- A group of variables placed consecutively in the memory

- Each variable in the array is called an element

- Each element can be addressed using an Integer addressing

- Array can be of any datatypes, i.e., int, char, float, etc.

Array Example

- int num[5]
  - Declares an array named num with 5 elements
  - 5 is the size of the array
- num[i] is the i-th element where $0 <= I <$ size of array
  - num[0] is the first element
  - num[4] is the last element
- Each array element can be used as regular variable
  - num[0] = 5;
  - scanf("%d", &n[1]);

Array Example

Array Visual Example

- char name[100]

- int numbers[20]
  - What is the size of this array?
  - What is the size of this array in byte?
  - What is the last element?

Array and Loop

- Array are very useful for using with loops

- Loop index are generally used to address array elements

- Example

  ```
  for(i =0; i<10; i++)
          scanf("%d", &num[i]);
  ```

Multi-Dimensional Array

- Array can be declared in multi dimnsion

- In general, more than 3 dimensional array is not used

- Example:

  - int var[x-axis][y-axis][z-axis]

a[0][0]	a[0][1]			a[0][4]
a[1][0]				
a[3][0]				a[3][4]

int a[4][5]

Assignment

- Update assignment3.c
- The program should take 5 Integers in array num as input from keyboard
- The program should output using loop:
  - The maximum of the input numbers
  - The minimum of the input numbers
- Example:
  - Input = 10 5 3 7 21
  - Output
    - MAX = 21
    - MIN = 3