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EECS 10 DISCUSSION

7/18/12 Week 4 Session 1 Weiwei Chen

# Mid-term exam2 is coming

- □ Multiple choices, same format as midterm 1
- □ Mainly focus on the stuff after midterm 1, but should cover all the things discussed since lecture 1.
- □ Study the lecture slides
- □ Concepts, sample programs, etc.
- Quiz questions
- Assignment implementations
- Read the textbook if you need to see more details and examples

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### **Data Structures**

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- □ single data elements of basic (non-composite) type
  - integral types
  - □ Floating point types
- □ complex data structures using composite types
  - □ arrays, lists, queues, stacks
  - Trees, graphs
  - dictionaries
- □ ANSI C provides built-in support for
  - arrays
  - structures, unions, enumerators
  - pointers

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# Arrays

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- □ Composite data type in C
- □ Fixed number of elements
- □ Element accessed by index (aka. Subscript)

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### Quizzes about arrays

- □ How to define an array of 10 integral numbers? Assume the name of the array is myfirstarry, and the initial value of all the elements to be 0.
- □ What is the range of the indices of this array?
- □ What is the size of this array?
- □ Write the C program line to assignment the 5<sup>th</sup> element of this array to be 42.
- Write the C program line to assign the value to each element in this array with its index.

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### Multiple dimensional arrays

- Arrays of an array
- □ How to define a two dimensional array with the size
  - the first dimension be 5
  - the size of the second dimension be 2.
- □ How to define the same two dimensional array with the initial values
  - □ The 1st sub-array be {1, 2}
  - The 2nd sub-array be {3, 4}
  - □ The 3rd sub-array be {5, 6}
  - □ The 4th sub-array be {7, 8}
  - The 5<sup>th</sup> sub-array be {9, 10}

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### Pass arguments to functions

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- □ What is pass by value?
- □ What is pass by reference?
- Which types in C language are passed by value as function arguments? Which are passed by reference?

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### Pass arguments to functions



- What is pass by value?
  - only the current value is passed as argument
  - the parameter is a copy of the argument
  - changes to the parameter do not affect the argument
- □ What is pass by reference?
  - a reference to the object is passed as argument
  - □ the parameter is a reference to the argument
  - changes to the parameter do affect the argument
- □ Which types in C language are passed by value as function arguments? Which are passed by reference?
  - In ANSI-C, ... basic types are passed by value
  - ... arrays are passed by reference
- □ Please refer to slides #28~29 in lecture7

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# Strings

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- □ Array of characters, null-terminated
- □ How to define a string with initial value of "hello"? Name the string to be myfirststring.
- How to display this string by using the printf() function?
- □ What is the size of this array?
- $\hfill\Box$  Please refer to slices #30~36 for more details about strings.

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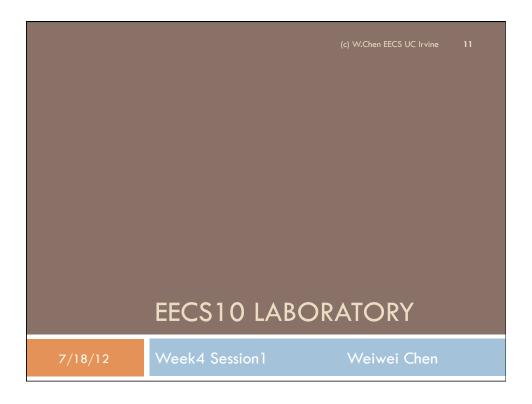
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# **Assignment Discussion**

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- □ Assignment 4, Part 1
- Extend the functions of the calculator

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# It is a time for programing! Raise your hand if you need help (c) W.Chen EECS UC Irvine 7/18/12