EECS10 DISCUSSION

| 7/18/12 | Week4 Session1 | Weiwei Chen |

Mid-term exam2 is coming

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☐ 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

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

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- □ 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 5th 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

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- □ 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 5th 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

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- □ 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?
- Please refer to slices #30~36 for more details about strings.

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Assignment Discussion

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

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EECS10 LABORATORY

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It is a time for programing!

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□ Raise your hand if you need help

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