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EECS 10 DISCUSSION

7/4/12 Week2 Session2 Weiwei Chen

Discussion Outline

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- Something about Assignment 1
- Quick Concepts Review
 - Formatted output
 - Programming principles
 - Structured programming
- Assignment Discussion
 - Calculate the weekday of any date

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Something about Assignment 1

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- Good job!
- Several suggestions
 - ▣ Typescript the execution of the program with requirement numbers in the assignment
 - ▣ Use program output format demonstrated in the assignment handout
 - ▣ Don't open text editor while "script"ing
 - ▣ Please use text editor to create / write the .txt file

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Formatted Output

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- Formatted output using printf()
 - ▣ Standard format specifiers for integral values
 - Formatting sequence for integral values
 - %flags width length conversion
 - E.g. %-8d, %+8d, %012ld
 - ▣ Standard format specifiers for floating point values
 - Formatting sequence for floating point values
 - %flags width precision length conversion
 - %12.4f, %12.4e
- Slide #4~9, Lecture 4

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Programming Principles

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- Please write down your understanding about the following concepts
 - Problem definition
 - Algorithm
 - Pseudo code
 - Control Flow
 - Program

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Programming Principles

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- Problem definition
 - Input, output data
- Algorithm
 - Procedure to solve the problem
 - Detailed set of actions, the order of the actions, termination
- Pseudo code
 - Planning a program
 - Informal description of the algorithm steps
- Control Flow
 - Execution order of statements in the program
- Program
 - Instructions for the computer
 - Formal description in programming language

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Structured Programming

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- Sequential execution in C
 - ▣ Statement blocks
- Indentation increases readability

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Control Flow Chart

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- Graphical representation of program control flow
 - ▣ Start & finish
 - ▣ Statement blocks
 - ▣ Selection
 - ▣ Nested control structures
- Please draw the control flow chart
 - ▣ if, while statement
 - ▣ if-else statement
 - ▣ Switch statement
 - ▣ Control structure can be nested

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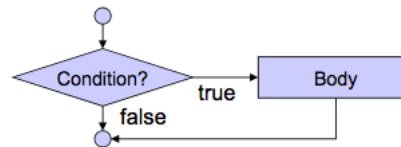
Control Flows in C

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□ *if* Statement

□ *if*(/*condition*/)

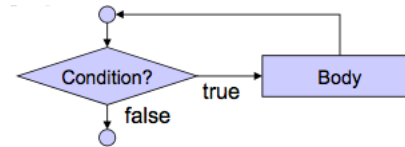
```
{
  /*body;*/
}
/*after if statements;*/
```



□ *while* Statement

□ *while*(/*condition*/)

```
{
  /*body;*/
}
/*after switch statements;*/
```



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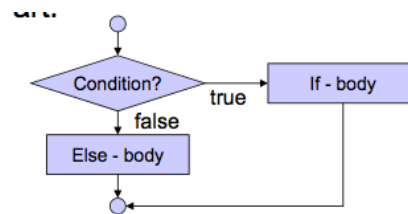
Control Flows in C

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□ *if-else* statement

□ *if*(/*condition*/)

```
{
  /*statements for if branch*/
}
else
{
  /*statements for else branch*/
}
/*after if-else statements;*/
```



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Control Flows in C

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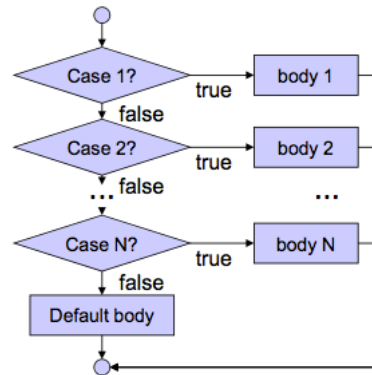
□ switch statement

```

□ switch(expression)
{
  case constant-expression 1:
  {
    /*statements*/
    break;
  }
  ...:
  case constant-expression n-1:
  {
    /*statements*/
  }
  case constant-expression n:
  {
    /*statements*/
    break;
  }
  default:
  {
    /*after switch statements;*/
  }
}

```

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Assignment Discussion

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- Assignment 2, Part 2
- What is the input and output of this program?
- How many variables do we need? What are they for? Which types will we use?
- How to implement the floor function in C?

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EECS10 LABORATORY

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Some good practices for writing the C program code

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- Always type parenthesis, brackets, quotes in pairs
- Indentation increases readability
- Something about coding style

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It is time to program!

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- Raise your hand if you need help