Summer Session II 2013
EECS 10 Week2 Discussion2

Che-Wei Chang

Outline

- Homework 1 Grading
  - Use option "-Wall" to show all warning
- Quick Concept Review
  - Formatted Output
  - Programming principles
  - Structured programming
- Assignment Discussion
  - Calculate the weekday of any date

Formatted Output

- Formatted output using printf()
  - Standard format sequence for integer values
    - % [flags] [width] [length] [conversion]
    - Examples : %-8d
%+8d
%x, %o
  - Standard format sequence for floating point values
    - % [flags] [width] [precision] [length] [conversion]
    - Examples : %12.4f
%12.4e
%12.4g
  - Refer to lecture slides 4, page 5~9

Programming Principles

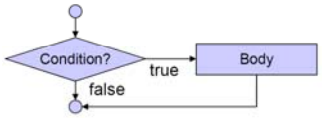
- Problem Definition
  - Input, Output Data
- Algorithm
  - Procedure to solve the problem
  - Detail set of actions, the order of the actions, termination
- Pseudo Code
  - Planning a program
  - Informal description of the algorithm sets
- Control Flow
  - Execution order of statements in the program
- Program
  - Instructions for the computer
  - Formal description in programming language

STRUCTURED PROGRAMMING

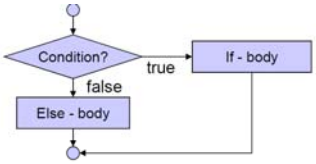
- Control Structure
  - Sequence structure
  - Selection structure
  - Repetition structure
- Control Flow Charts
  - Concept: Refer to Lecture 4 slides, page 21
  - Example: Refer to Lecture 4 slides, page 22~30
- Readability of the code
  - Proper indentation is highly recommended.
  - Refer to Lecture 4 slides, page 16

CONTROL FLOW CHART

- Graphical Representation
- if (*condition*)
  {
  body ;
  }

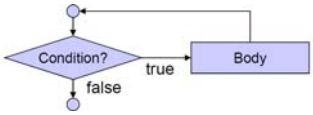


- if (*condition*)
  {
  if-body ;
  }
  else
  {
  else-body ;
  }



Selection Structure

- while (*condition*)
  {
  body ;
  }

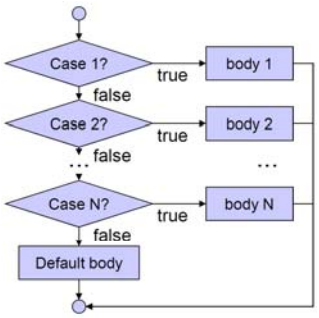


Repetition Structure

CONTROL FLOW CHART

```
switch (expression)
{
  case constant-expression 1:
  {
    Body-1
    break ;
  }
  case constant-expression 2:
  {
    Body-2
    break ;
  }
  …

  case constant-expression N:
  {
    Body-N
    break ;
  }
  default:
}
```



Selection Structure

ASSIGNMENT DISCUSSION

- Assignment 2, Part 2
  - Before you implement your work, take a look at lecture slides 4, Example Grade.c (p31-p33) and Grade2.c (p35-p37)
  - Read the assignment handout carefully
- Calculate the weekday of any date
  - Example : what weekday is Aug 15, 2013 ? Thursday
  - What is the input? What is the output?
  - What algorithm to solve this problem?
  - What is the control flow for this program?
  - How to implement this program?
    - How many variables, and what types should they be?
    - How to implement floor function in C ?

ASSIGNMENT DISCUSSION

- Briefly describe your implementation by answering the questions in the previous slides
- Use the following dates to verify your program
  - 8 / 19 / 2013 (the deadline for this assignment)
  - 1 / 1 / 2014 (the next New Year)
  - 10 / 4 / 1965 (the first day of classes at UCI)
- Name your files **weekday.c**, **weekday.txt** and **weekday.script.**