Summer Session II 2013
EECS 10 Week2 Discussion1

Che-Wei Chang

Overview

- Administration
- Concept Review
  - Comparison of values
  - Something about Operator
  - Control flows in C
- Assignment Discussion
  - Part 1 of the Assignment 2

ADMINISTRATION

- Please post any homework or lecture related questions on the course Messageboard
  - Question via e-mail will be directed to the Messageboard
- Please read the posts on the Messageboard
  - Read the assignment handout
  - Read the lecture slides
- Please visit the discussion / lab session as well as the office hours for confusing questions
  - Face to face communication is more efficient
- First mid-term on Thursday.

COMPARISON OF VALUES

- Relational Operators
  - Direct comparison of two values
  - Example:
    - `<` less than
    - `>=` greater than or equal to
    - `==` equal to
    - `!=` not equal to
  - Defined for all basic type (ex. Integer, floating point)
  - Return value True or False
- Logical Operators
  - Argument and result types are Boolean
  - Example: A||B
- Conditional Operators
  - Conditional evaluation of expressions
  - Example: *result* = (*condition*) ? *true-value* : *false-value* ;

x	y	!x	x && y	x || y
0	0	1	0	0
0	1	1	0	1
1	0	0	0	1
1	1	0	1	1

EVALUATE THE FOLLOWING EXPRESSIONS

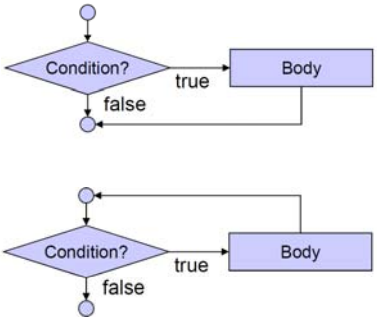
- 5 < 6 → 1
- float f1 = 6.0, f2 = 6e1
  - f1 > f2 → 0
  - f1 > -f2 → 1
- int i = 10
  - (i < 20) && (i > 5) → 1
  - (i < 5) || (i > 10) → 0
  - ! ((i < 1) || (i > 9)) → 0
- int d = -3 ;
  - d = (4 < 5)? (43) : (4+8) ; → d = 43
  - d = (d == -1-2)? (-d) : (d) ; → d = 3
  - d = (d < 0)? (-d) : d → d = 3

ADVANCED OPERATORS

- Augmented Assignment Operators
  - +=, -=, *=, /=, %=, <<=, >>=, |=, &=
  - x += 3 ←→ x = x + 3
- Increment and Decrement Operators
  - Post-increment count++
  - Pre-increment ++count
  - Post-decrement count--
  - Pre-decrement --count

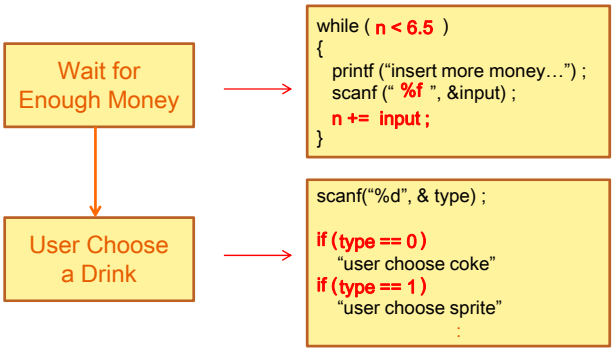
CONTROL FLOWS IN C (1)

- Conditional statement
  - if (*condition*)
    {
    body ;
    }
- Repetition statement
  - while (*condition*)
    {
    body ;
    }
- Condition:
  - Expression evaluation
  - 1 (true) or 0 (false)



CONTROL FLOWS IN C (2)

- Simple Example – Vending machine
  - All drinks are at the same price (USD 6.5)
  - 5 kinds of drink to choose (coke, sprite, dr.pepper, …)
  - Using if and while statement to program a vending machine



ASSIGNMENT DISCUSSION(1)

- Assignment 2, Part 1
  - Before you implement your work, take a look at lecture slides 2.2, page 30-32
  - Read the assignment handout carefully
- Calculate the approximation of *tan* (x)
  - x is radian
  - angle in degree = angle in radian * 180°/π
  - Approximation 1, through the Taylor series of Tangent function
  - Approximation 2, *tan* (x) = *sin* (x) / *cos* (x)
  - Both are required for assignment 2, part 1

ASSIGNMENT DISCUSSION(2)

- Bonus Part: Boundary checking
  - Set boundary value checking for input radian
  - If the input radian is within a certain range…
  - If the input radian is out of a certain range…
  - Try to implement this bonus part, it is a good exercise for the second part of the assignment.
- Describe your work with the following detail in the .txt
  - What type of variable you used in the program? Why?
  - Any difficulty you faced in this assignment.
  - How did you do the boundary checking for the input radian value (if you want to implement the bonus part)
- Name your files **tan.c**, **tan.txt** and **tan.script**