SUMMER SESSION II 2013
EECS 10 WEEK3 DISCUSSION1
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OUTLINE

- Something about Assignment2

- Repetition statement

- Structured Jump statement

- Assignment 3
  - Paying off Credit Card Debt (20 pts)

SOMETHING ABOUT ASSIGNMENT2

- Equality operation between floating point values
  - Avoid using '==' to compare two floating point values
- if-else statement

```
if (grade >= 60)
    { printf("You passed.");
     } /* fi */
else
    { printf("You failed.");
     } /* esle */
```

  - Use logic operator to connect expressions in the condition field
  - Need bracket to specify the selection structure if the body is more than one line.
  - Double check your logic operation
- Use '–Wall' to show all warning while compiling !

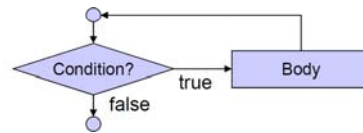## REPETITION STATEMENTS

- Conditional statements
  - if statement
    - Handle one special case when the condition is true

  - if-else statement
    - Handle both the cases when the condition is true and false
    - Exclusive statement blocks for the if and else branch

  - switch statement
    - Handle multiple cases when the value of switch expression has more than two values
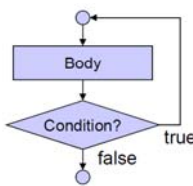
REPETITION STATEMENTS

- while loop statement
  - while (*condition*)
    {
      body ;
      (*including changing the condition values*)
    }

- do-while loop statement
  - do
    {
      body ;
      (*including changing the condition values*)
    } while (*condition*)
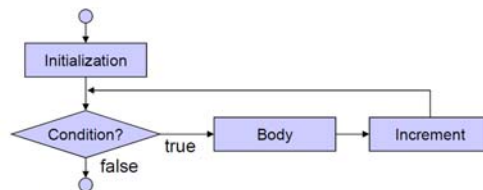

REPETITION STATEMENTS

- for loop statement
  - Syntax : for { *initialization* ; *condition* ; *increment/decrement* }
            {   *Body*   }
  - Example :

```
for(i = 0; i < 10; i++)
    { printf("i = %d\n", i);
    } /* rof */
```
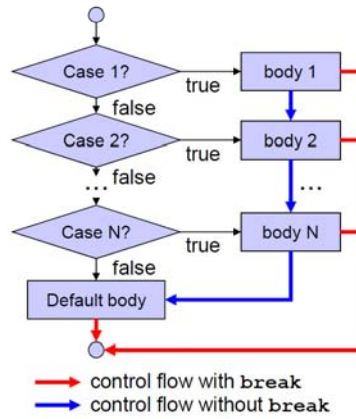
  - Control Flow Chart:

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STRUCTURED JUMP STATEMENT

- Structured Jump Statement
  - **break** statement in switch statement
  - **break** and **continue** in while loop
  - **break** and **continue** in do-while loop
  - **break** and **continue** in for loop

- Arbitrary Jump Statement
  - goto

BREAK AND CONTINUE

- break
  - This can be very useful if you want to stop running a loop because a condition has been met other than the loop end condition.

- Continue
  - With "continue;" it is possible to skip the rest of the commands in the current loop and start from the top again.
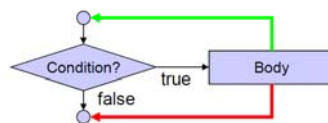
STRUCTURED JUMP STATEMENT
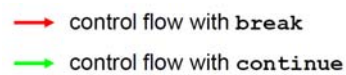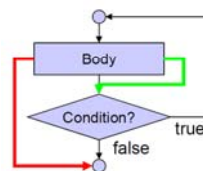
- **<u>break</u>** statement in switch statement

Case 1? — true → body 1
false
Case 2? — true → body 2
false
...
Case N? — true → body N
false
Default body

control flow with `break`
control flow without `break`

STRUCTURED JUMP STATEMENT

- **<u>break</u>** and **<u>continue</u>** in while loop

Condition? — true → Body
false

- **<u>break</u>** and **<u>continue</u>** in do-while loop

Body
Condition? — true
false

control flow with `break`
control flow with `continue`

EXAMPLE:

```
int main ()
{ // Local variable declaration:
  int a = 10;

  // do loop execution
  do {
    if( a == 15)
    {
      // skip the iteration.
      a = a + 1;
      continue;
    }

    printf("value of a: %d\n", a);
    a = a + 1;
  }while( a < 20 );

  return 0;
}
```
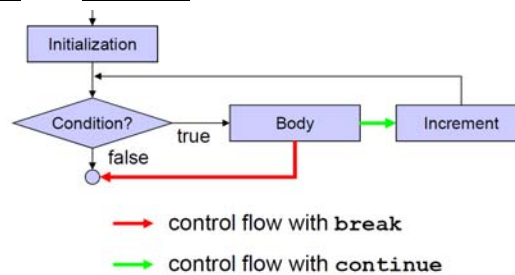
- value of a: 10
  value of a: 11
  value of a: 12
  value of a: 13
  value of a: 14
  value of a: 16
  value of a: 17
  value of a: 18
  value of a: 19

- 15 is missing, why?

STRUCTURED JUMP STATEMENT

- **break** and **continue** in for loop

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ASSIGNMENT DISCUSSION

- Assignment 3, Part 1
  - Before you implement your work, take a look at lecture slides 5, Example interest.c (p19-p20)
  - Read the assignment handout carefully
- Paying off Credit Card Debt (20 pts)
  - Good exercise for formatted output
  - 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?
    - In the interest.c example, for loop statement is used for repetition structure; in this assignment, it may not apply…
    - Which repetition structure you should use ?
    - …

ASSIGNMENT DISCUSSION

- Briefly describe your implementation by answering the questions in the previous slides

- Use the following data to verify your program
  - Credit limit: 5000
  - Balance of card: 3000
  - APR: 16.99%
  - monthly payment: 300

- Name your files **creditcard.c**, **creditcard.txt** and **creditcard.script.**