

# Announcements

- Sit with your TAs for the rest of the quarter.

**Yuan**  
**(Back 4 rows)**

**Kayhan**  
**(3 rows)**

walkway

**Shreyas**  
**(Front)**

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# Announcements

- New CLUE tutor!
  - Rick Chen
    - Senior in the Informatics program
    - Webmaster for ASUW Arts & Entertainment
- Wednesdays 6:30-8pm



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# Grading

- We're working with Catalyst to see why we can't publish your grades so you can see them in the Catalyst Gradebook

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# Project 2A

- Due date has been postponed to a week from tomorrow!

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# Announcement

- Project 2A
  - Available now
  - Due on Tuesday 11/4/2008
    - 2-paragraph story
      - Something where the user can choose a gender
    - 2 images
    - Copyright information
    - Choose words in story to replace

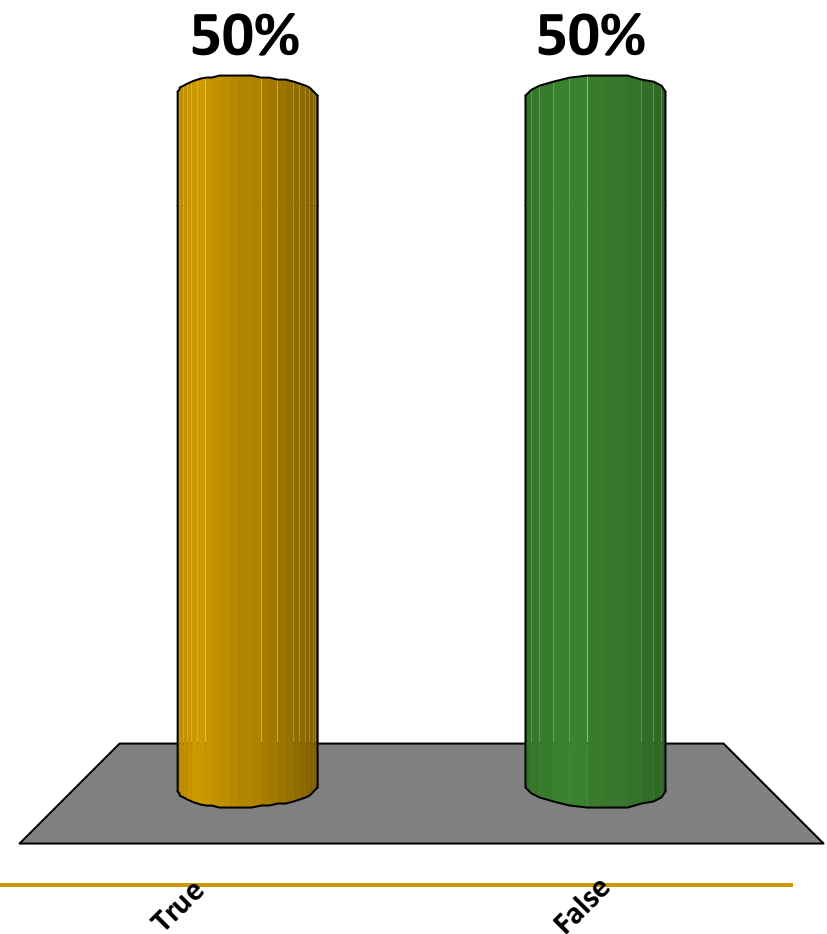
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# Exercises

- Assignment Statements

5tunes a valid variable name.

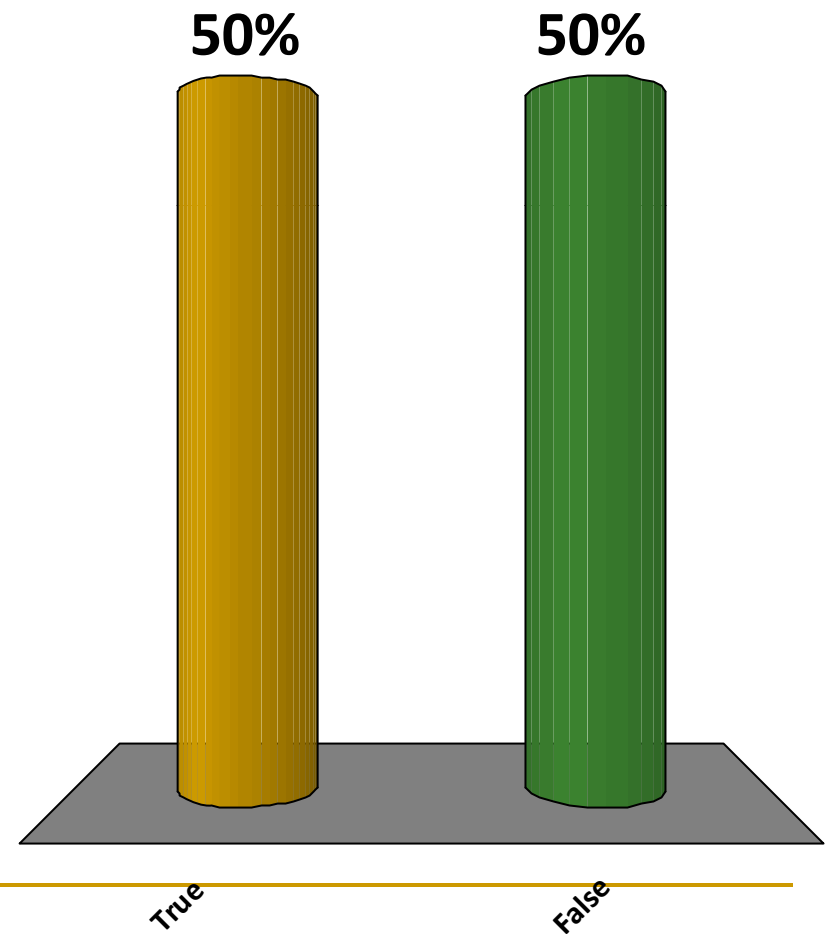
1. True
2. False



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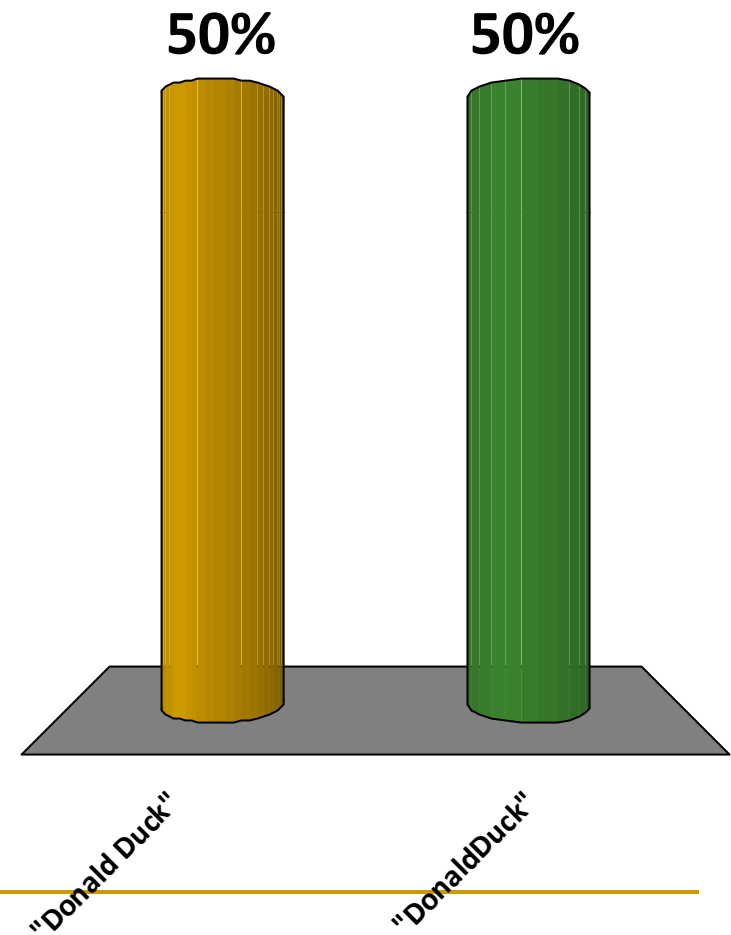
# LASTname is the same as lastNAME.

1. True
2. False



# "Donald" + "Duck" is

1. "Donald Duck"
2. "DonaldDuck"



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# Conditionals, branches, or tests

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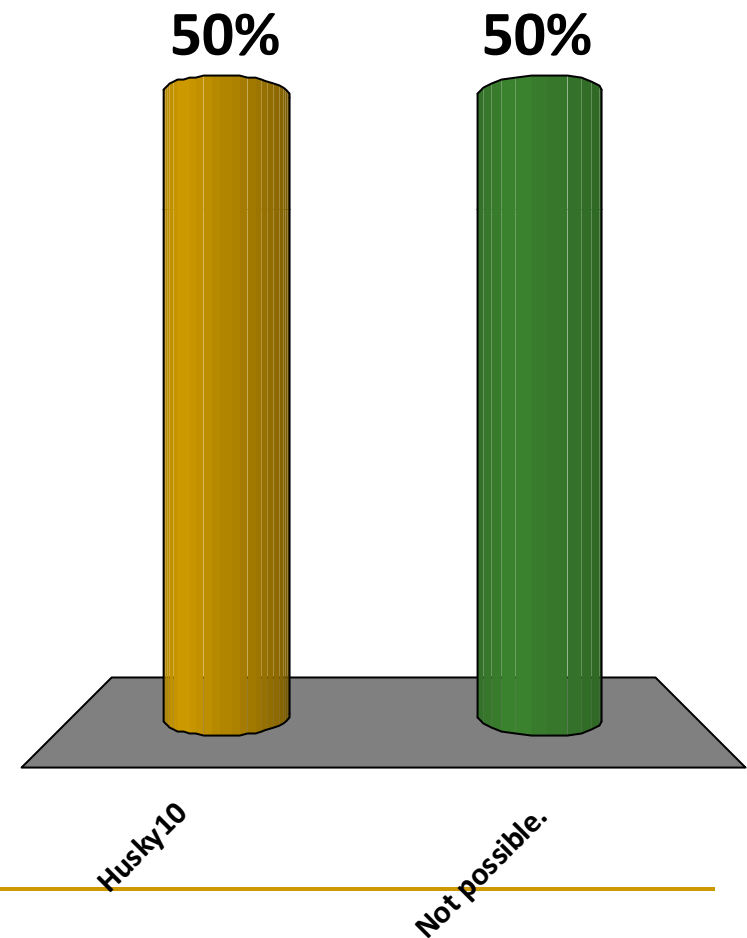
Adding logic to an algorithm

D.A. Clements

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"Husky" + 10 is

1. Husky10
2. Not possible.



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# Conditional Statement Syntax

```
if ( <Boolean expression> )  
  <then-statement>;
```

- Boolean expression is a relational expression; then-statement is any JavaScript statement

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# If Statements Control Flow

- The Boolean statement, called a predicate, is evaluated, producing a true or false outcome
- If the outcome is true, the then-statement is performed
- If the outcome is false, the then-statement is skipped
- Then-statement can be written on the same line as the Boolean or on the next line

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# Compound If Statements

- Sometimes we need to perform more than one statement on a true outcome of the predicate test
- You can have a sequence of statements in the then clause
- Group these statements using curly braces { }
  - They are collected as a compound statement

# if/else Statements

- To execute statements if a condition is false

```
if ( <Boolean expression> )  
{  
    <then-statements>;  
}  
else  
{  
    <else-statements>;  
}
```

- The Boolean expression is evaluated first
  - If the outcome is true, the then-statements are executed and the else-statements are skipped
  - If the outcome is false, the then-statements are skipped and the else-statements are executed

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# Nested if/else Statements

- The then-statement and the else-statement can contain an if/else
- The else is associated with the immediately preceding if
- Correct use of curly braces ensures that the else matches with its if

# Nested if/else Statements

```
if (<Boolean exp1>) {  
  if (< Boolean exp2>) {  
    <then-stmts for exp2>;  
  } else {  
    <else-stmts for exp2>;  
  }  
}
```

```
if (<Boolean exp1>) {  
  if (< Boolean exp2>) {  
    <then-stmts for exp2>;  
  }  
} else {  
  <else-stmts for exp1>;  
}
```

# Nested if/else Statements

```
if (<Boolean exp1>
{
  if (< Boolean exp2>)
  {
    <then-stmts for exp2>;
  }
  else
  {
    <else-stmts for exp2>;
  }
}
```

```
if (<Boolean exp1>
{
  if (< Boolean exp2>)
  {
    <then-stmts for exp2>;
  }
}
else
{
  <else-stmts for exp1>;
}
```

# The Espresso Program

## Input:

drink, a character string with one of the values: "espresso", "latte",  
"cappuccino", "Americano"  
ounce, an integer, giving the size of the drink in ounces  
shots, an integer, giving the number of shots

## Output:

price in dollars of an order, including 8.8% sales tax

## Program:

```
1. var price;
2. var taxRate = 0.088;
3. if (drink == "espresso")
    price = 1.40;
4. if (drink == "latte" || drink == "cappuccino") {
4a.   if (ounce == 8)
        price = 1.95;
4b.   if (ounce == 12)
        price = 2.35;
4c.   if (ounce == 16)
        price = 2.75;
    }
5. if (drink == "Americano")
    price = 1.20 + .30 * (ounce/8);
6. price = price + (shots - 1) * .50;
7. price = price + price * taxRate;
```

- Line 3 is a basic conditional statement
- Lines 4-4c use an if statement with conditionals in the then statement
- Line 5 uses basic if statement
- Lines 6, 7 compute using arithmetic operators

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*Coming soon to a computer near you...*

# FUTURE LECTURES

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## Coming soon to a computer near you...

- Loops, or iterations, repeat code as many times as necessary
  - The number of loops can be scripted
- Arrays are lists or collections
  - Loops make it easy to iterate through all the elements in an array
- Functions allow you to package an algorithm for use in multiple places

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# End papers

## Why is programming fun?

- Fourth is the joy of always learning, which springs from the non-repeating nature of the task. In one way or another the problem is ever new, and its solver learns something: sometimes practical, sometimes theoretical, and sometimes both.

Source: Frederick P. Brooks, Jr. *The Mythical Man-Month: Essays on Software Engineering*.