

Announcements

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

Yuan (Back 4 rows)
Kayhan (3 rows)
walkway
Shreyas (Front)

Announcements

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



Grading

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

Project 2A

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

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

Exercises

- Assignment Statements

5tunes a valid variable name.

1. True
2. False

A bar chart with two bars. The left bar is yellow and labeled 'True' with '50%' above it. The right bar is green and labeled 'False' with '50%' above it. The bars are on a grey base.

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LASTname is the same as lastNAME.

1. True
2. False

A bar chart with two bars. The left bar is yellow and labeled 'True' with '50%' above it. The right bar is green and labeled 'False' with '50%' above it. The bars are on a grey base.

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"Donald" + "Duck" is

1. "Donald Duck"
2. "DonaldDuck"

A bar chart with two bars. The left bar is yellow and labeled '"Donald Duck"' with '50%' above it. The right bar is green and labeled '"DonaldDuck"' with '50%' above it. The bars are on a grey base.

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Conditionals, branches, or tests

Adding logic to an algorithm

D.A. Clements

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"Husky" + 10 is

1. Husky10
2. Not possible.

A bar chart with two bars. The left bar is yellow and labeled 'Husky10' with '50%' above it. The right bar is green and labeled 'Not possible.' with '50%' above it. The bars are on a grey base.

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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

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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

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Nested if/else Statements

<pre>if (<Boolean exp1>) { if (< Boolean exp2>) { <then-stmts for exp2>; } else { <else-stmts for exp2>; } }</pre>	<pre>if (<Boolean exp1>) { if (< Boolean exp2>) { <then-stmts for exp2>; } else { <else-stmts for exp1>; } }</pre>
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Nested if/else Statements

<pre>if (<Boolean exp1>) { if (< Boolean exp2>) { <then-stmts for exp2>; } else { <else-stmts for exp2>; } }</pre>	<pre>if (<Boolean exp1>) { if (< Boolean exp2>) { <then-stmts for exp2>; } else { <else-stmts for exp1>; } }</pre>
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The Espresso Program

Input:
 drink, a character string with one of the values "espresso", "latte",
 "cappuccino", "americano"
 ounces, 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 = 1.65;
4. if (drink == "latte" || drink == "cappuccino") {
    if (ounces == 8)
        price = 1.95;
    if (ounces == 12)
        price = 2.35;
    if (ounces == 16)
        price = 2.75;
    }
5. if (drink == "americano")
    price = 1.25 + .30 * (ounces/8);
6. price = price * (shots - 1) * .35;
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.*


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