



## Test Your Tech

JavaScript is:

- A. The earliest known writing by Java Man.
- B. Programming language for Web pages.
- C. Instructions in the Starbucks bag on how to brew good coffee.

1



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## Announcement

- Project 1B is due Monday before Noon
  - \* How is everybody doing?



## Announcement

- Where to get help between now and Monday:
  - \* Office Hours 4:30-5:20 pm (MGH 3330K)
    - Hallway doors lock at 5pm
    - Two computers for students to use
  - \* Class Bulletin Board
  - \* Class Listserv Mailing list
    - Someone will have the answer you need




## Help in HTML

- W3 Schools
  - \* HTML tag reference
    - [http://www.w3schools.com/tags/ref\\_byfunc.asp](http://www.w3schools.com/tags/ref_byfunc.asp)
  - \* Tutorials
    - Find links in Course Web site's navigation bar
      - Tizag
      - W3 Schools





## Announcement

- Home or laptop
    - \* Dreamweaver
      - Adobe has a special deal for UW students
        - If you expect to do a lot of Web or Design work
      - Download free 30-day trial from Adobe
      - Computing Commons:
        - Macromedia Dreamweaver MMX
    - \* Free download of a plain text editor
      - NotePad2, NotePad++, jEdit, TextWrangler
- Links on Course Web site's Computing page




## Announcements

- Chapters 18 and 19 for today
- For Monday
  - \* Chapter 21
  - \* Chapter 1, *QuickStart to JavaScript*

## Announcement


- Extra-Credit Opportunities
  - \* Survey and Usability studies
    - Huh? What's that?
      - Check your email inbox or your spam filter
    - Usability studies
      - Weekly, each with several students
      - Jay will contact you as needed
      - Watch your email for that



## Get With the Program:


*Fundamental Programming  
Concepts Expressed in JavaScript*

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## Overview: Programming Concepts

- Programming: Act of formulating an algorithm or program
- Basic concepts have been developed over last 50 years to simplify common programming tasks
- Concepts will be expressed in JavaScript




### At the Espresso Stand

Espresso is concentrated liquid coffee produced by passing steam through finely ground coffee beans. Some people enjoy drinking espresso straight, but others prefer a café latté, espresso in steamed milk; a cappuccino, espresso in equal parts of steamed milk and milk foam; or an Americano, espresso in near-boiling water. Espresso drinks are sold in three sizes: short (8 oz.), tall (12 oz.), and grande (16 oz.). These drinks are made with a single unit of espresso, called a shot, but coffee addicts often order additional shots. The price of additional shots is added to the base price of the drink, and tax is figured in to produce the charge for the drink. The program to compute the price of an espresso drink is:

**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


Figure 18.1. Sample JavaScript computation to figure the cost of espresso drinks. (continues next page).



```


Program:
var price;
var taxRate = 0.088;
if (drink == "espresso")
    price = 1.40;
if (drink == "latte" || drink == "cappuccino") {
    if (ounce == 8)
        price = 1.95;
    if (ounce == 12)
        price = 2.35;
    if (ounce == 16)
        price = 2.75;
}
if (drink == "Americano")
    price = 1.20 + .30 * (ounce/8);
price = price + (shots - 1) * .50;
price = price + price * taxRate;
    
```

Figure 18.1 (continued). Sample JavaScript computation to figure the cost of espresso drinks.




## Names, Values, and Variables

- Names Have Changing Values
  - \* Example: U.S. President has current value of George W. Bush, previous values of Bill Clinton, George Washington
  - \* Example: Office Manager was Julie; now it's Jake
- Names in a Program Are Called *Variables*
  - \* Values associated with a name change in programs using the *assignment* statement ( something = something else)




## Identifiers and Their Rules

- A variable name refers to the present value of the variable, just like "The President" refers to the current president.
- Case sensitive
  - HOME ≠ Home ≠ home




## Identifiers and Their Rules

Valid	Invalid	Why Name is Invalid
firstOne	1stOne	Begins with number
first1	first-1	JS thinks hyphen is a minus sign
first_1	first\$1	\$ not allowed
first_One	first One	Space not allowed
FirstOne	First!1	Exclamation point





## A Variable Declaration Statement

- Declaration: State what variables will be used
  - \* Command is the word *var*
  - \* For example, a program to calculate area of circle given radius, needs variables area and radius:
    - `var radius, area;`
  - \* Put variable declarations at the top of your script
- The declaration is a type of *statement*



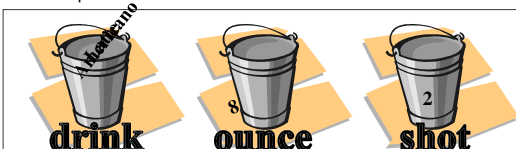
## The Statement Terminator

- A program is a list of statements
- The statements may run together on a line
  - \* Use white space to help you
    - read your code
    - understand your program
- End each statement with the *statement terminator* symbol
  - \* In JavaScript, all statements terminate with the *semicolon* (;)

## Names, Values, And Variables

- Declaring a variable
  - \* Names a particular area in computer memory where you can store values
  - \* Gives you a name, or handle, that is independent of the current value





## Rules for Declaring Variables

- Every variable used in a program must be declared (before it is used)
  - \* In JavaScript declaration can be anywhere in the program
  - \* Programmers prefer to place them first
- Undefined values
  - \* Variable has been declared but does not yet have a value
 

```
var number1;           // undefined value
var number2 = 42;     // initialized to the value 42
```



## Initializing a Declaration

- We can set an initial value as part of declaration statement:
  - \* `var taxRate = .088;`
- Related variables may be grouped in one declaration/initialization; unrelated variables are usually placed in separate statements

```
var num1 = 42, num2, num3;      var num1 = 42;
                                var num2;
                                var num3;
```



## Quick Write

- You will have five minutes to write.