CIST 1305 Variables

A variable is a container used for holding data in the computer’s memory. You can store data in and get data out of a variable. Variables are used by programming languages as a tool to manage data.

Example of use: greeting = “Hello Joe what do you know?”;

Every computer language provides some kind of support for variables.

In JavaScript, the **var** statement is used to create a variable. When you create a variable you need to give it a name. JavaScript example statement: var userName ; Note the semicolon at the end of the line. Each single instruction should end with a semicolon (;).

Naming Variables (Naming Conventions)

Example: varName

Case is important – varName and varname are two different variables. Watch your spelling!

* PHP and JavaScript are case sensitive

Make name descriptive

Don’t use spacing or punctuation – most languages allow multi-name variables, some punctuation marks have special meaning.

Keep names short – but long enough to be descriptive

When using multiple word names combined, capitalize the first letter of the second word.

Example: userName

When a user submits a form to a PHP program, the PHP processor automatically creates a variable with the same name as every form element on the original HTML page. The value of that variable id whatever the user has entered into the field before pressing the submit button. The PHP variable value comes from the value property of the form object.

Assigning a value to a variable

JavaScript Example: userName = “plong”;

This line assigns the value plong to the variable userName. It is a string variable, computers handle text as a string of characters. The equal sign (=) is used for assignment purposes. Note: It does not actually mean equal to it’s more like get. With a string literal you specify the literal value.

PHP Example: $userName = “plong” Note: In PHP, all variables begin with a dollar sign ($).

It creates a variable named $userName and it assigns the value plong to the variable.

There are two basic data types: string (text) and numeric (numbers). String includes text and alpha numeric (text and numbers combined). Numeric includes integers (whole numbers) and floating point real numbers (numbers with decimals).

Alert box: alert(userName); will generate an alert box (pop up) that states the content of the value of the variable userName.

You can enter data into a variable using a prompt statement.

Example: userName = prompt(“What is your name?”)

The prompt statement causes a dialog box to pop up. It sends a message to the user (a question) and it also provides a place for the user to type a response (answer).

String Concatenation – combining two or more strings. It can be a combination of string literals and/or string variables.

In JavaScript, you concatenate strings using the plus sign (+).

In PHP, you concatenate strings using the period (.).

JavaScript example: hiUser = “Hi, “ + username + “!!” It yields, the following: Hi, plong!!

Working with Numbers

Text and numbers are stored the same way on a computer; programmers use many schemes and conventions to encode data.

Example: var book = 49.99; Note: No quotation marks

You can combine the var statement with an assignment statement.

Example: var tax = book \* 7; (\* means multiplication)

Example part 2: alert(“Total cost of the book $” + Total);

Note: The alert statement automatically converts numbers to text.

A prompt statement asks for a value and saves it as text (string variable). It must be converted to a number before math can be applied to it.

JavaScript Example: book = prompt(“How much was the book?”); brings in value

JavaScript Example part 2: book = eval(book); convert value saved as text to a number

Using string methods (things strings can do – called methods)

Most programming languages allow you to manipulate text inside string variables

You can change a variable to uppercase or lowercase.

JavaScript Example: capName = username.toUpperCase()

Determine the length of a string, etc.

JavaScript Example: nameSize = username.length Note: The reason length doesn’t have () at the end is because it is not a method but a property.

Writing the Variable Creation Lines

Programs typically begin with some comments followed by statements that create the variables (It makes them easier to find). It’s a good idea to give the variables a value but it is not usually required. Note: with a string, ”” gives them a null value; number, give them a value of 0.

Examples: var firstName = “”; var num = 0;