

Intro Class Activity - Week 5

Goals:

In this class activity we are going to create a new text file and write some pseudocode then upload the file to a new repository.

Tools Needed

- Computer
- Console / BaSh / Terminal / PowerShell
- Text Editor
- Web Browser

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Pseudocode Exercises

Setting up our project folder & GitHub repository.

1. On *GitHub.com* create a new repo named “**pscode-wk5**”.
2. Create a new project folder called “**pscode-wk5**”.
3. In the newly created folder create a new text file (**.txt**) named “**pscode-exercises**”
4. Open the file with a text editor and copy and paste the following code block:

Unset

```
// Exercise 1: Calculate the Sum of Two Numbers
```

```
(Your pseudocode here)
```

```
// Exercise 2: Check if a Number is Even or Odd
```

```
(Your pseudocode here)
```

```
// Exercise 3:
```

```
Write pseudo code that will perform the following.
```

- a) Read in 5 separate numbers.
- b) Calculate the average of the five numbers.
- c) Find the smallest (minimum) and largest (maximum) of the five entered numbers.
- d) Write out the results found from steps b and c with a message describing what they are

```
(Your pseudocode here)
```

```
-- END --
```

5. Save the file and upload it to the repo “**pscode-wk5**” you created for this exercise. *Please refer to the Week 3 Exercises if you need help adding, committing, and pushing your repo.*

Operators Guide

Arithmetic Operators

+	Addition (a+b)	This operation adds both the operands on either side of the + operator.
-	Subtraction (a-b)	This operation subtracts the right-hand operand from the left.
*	Multiplication (a*b)	This operation multiplies both the operands.
/	Division (a/b)	This operation divides the left-hand operand by the operand on the right.
%	Modulus (a%b)	This operation returns the remainder after dividing the left-hand operand by the right operand.

Logical Operators

&&	AND (a&&b)	This operator returns TRUE only if both the operands are TRUE or if both the conditions are satisfied. If not, it returns FALSE.
 	OR (a b)	This operator returns TRUE if either operand is TRUE. It also returns TRUE if both the operands are TRUE. If neither operand is true, it returns FALSE.
!	NOT (!a)	This unary operator returns TRUE if the operand is FALSE and vice versa. It is used to reverse the logical state of its (single) operand.

Relational Operators

===	Exact Equals (a===a)	This operator checks if both sides are equal but also cares if types are same and equal.
==	Equal (a==b)	This operator checks if the values of both operands are equal. If yes, the condition becomes TRUE.
!=	Not equal (a!=b)	This operator checks if the values of both operands are

		equal. If not, the condition becomes TRUE.
>	Greater than (a>b)	This operator checks if the left operand value is greater than the right. If yes, the condition becomes TRUE.
<	Less than (a<b)	This operator checks if the left operand is less than the value of right. If yes, the condition becomes TRUE.
>=	Greater than or equal (a>=b)	This operator checks if the left operand value is greater than or equal to the value of the right. If either condition is satisfied, the operator returns a TRUE value.

Vocabulary

Algorithm: a set of instructions that are followed to solve a problem. It's a computer's thought process.

Argument: is a way to provide more information to a function. The function can then use that information as it runs, like a variable (For more info on variables, see below.)

Arrays: are containers that hold variables; they're used to group together similar variables. You can think of arrays like shelves at a pet store. The array would be the shelf, and the animals in cages are the variables inside.

Arithmetic operators: are essential in almost every application, especially in games. If a game character earns experience, it needs to be added to the total earned. If an arrow hits an enemy, the damage the enemy takes needs to be calculated.

Assignment operators: (+=, -=, *=, /=) are operators that combine variable assignments (=) with arithmetic operators. They serve as a shortcut when coders have to perform an operation that changes the value of a variable. If a rock falls on a game player's head, health needs to be subtracted from their total, and so on.

Binary numbers: a binary number is a computer's way to represent information. Computers process millions of 1's and 0's a minute using different rules to interpret them as numbers, letters, operators, and everything else put into a computer.

Bit: individual 1's and 0's you see in binary are called bits.

Boolean: a result that can only have one of two possible values: **true** or **false**.

Computer Program: a group of instructions given to a computer to be processed.

Conditional Statement: tells a program to execute an action depending on whether a condition is true or false.

Control Flow: the order in which the computer executes statements in a script.

Data Type: refers to the type of value a variable has and what type of mathematical, relational or logical operations can be applied without causing an error.

Floating Point Number: a positive or negative whole number with a decimal point.

Function: a block of code that can be referenced by name to run the code it contains.

Integers: numbers without a fractional component, and don't support decimal points.

Loop: a sequence of instructions that is continually repeated until a certain condition is reached.

Operator: a character that represents a specific mathematical or logical action or process.

Pseudocode: informal way of programming that does not require any strict programming language syntax or underlying technology considerations.

String: a sequence of characters and or symbols.

Syntax: rules that govern the structure of the symbols, words, and punctuation found in programming languages.

Variable: is a storage location and an associated symbolic name which contains some known or unknown quantity or information, a value