**CSS 225 Module 2 Lab Activity – Good Programming Habits**

**Deliverables:**

* Within this document add pseudocode and flowcharts for problems 1, 2, and 3.
* Give naming scheme examples for problems 4, 5, and 6.
* Give found resources for problem 7

**Practice Pseudocode and Flowcharts:**

For the flowcharts we will be using a web app for drawing: [draw.io](file:///Users/alinura617gmail.com/Downloads/draw.io)

Write Pseudocode and draw flowcharts for the following programs:

1 – A program that prints “Hello World” to the screen.

1. Start

2. Display "Hello World" on the screen

3. End

+------------+

| Start |

+------------+

|

v

+---------------+

| Display "Hello World" |

+---------------+

|

v

+------------+

| End |

+------------+

2 – A program that asks the user for their name and greets them with their name.

1. Start

2. Input user's name

3. Display "Hello, " + name + "!"

4. End

+------------+

| Start |

+------------+

|

v

+------------------+

| Input user's name |

+------------------+

|

v

+--------------------------+

| Display "Hello, " + name + "!" |

+--------------------------+

|

v

+------------+

| End |

+------------+

3 – A program that asks the user for two numbers and gives the user the possibility to choose between computing the sum and computing the product.

1. Start

2. Input the first number

3. Input the second number

4. Display options: "1. Compute the sum" and "2. Compute the product"

5. Input the user's choice

6. If the choice is 1, then compute and display the sum of the two numbers

7. If the choice is 2, then compute and display the product of the two numbers

8. If the choice is neither 1 nor 2, display an error message

9. End

+------------+

| Start |

+------------+

|

v

+-------------------+

| Input first number |

+-------------------+

|

v

+--------------------+

| Input second number |

+--------------------+

|

v

+------------------------------------+

| Display options: "1. Compute the sum" |

| and "2. Compute the product" |

+------------------------------------+

|

v

+-------------------+

| Input user's choice |

+-------------------+

| (Choice = 1)

v

+--------------------------------+

| Compute and display the sum |

| of the two numbers |

+--------------------------------+

| (Choice = 2)

v

+-----------------------------------+

| Compute and display the product |

| of the two numbers |

+-----------------------------------+

| (Choice is neither 1 nor 2)

v

+-----------------------------------------+

| Display error message: Invalid choice |

+-----------------------------------------+

|

v

+------------+

| End |

+------------+

**Naming Schemes**

You are writing a new program and want to use an obvious and consistent naming scheme for each variable you will create.

4 – A program that calculates the users BMI (Body Mass Index). You will need to collect their height and weight. What would you name these input variables? What would you name the output variable?

Input variables:

* height\_cm (to collect the user's height in centimeters)
* weight\_kg (to collect the user's weight in kilograms)

Output variable:

* bmi (to store the calculated Body Mass Index)

5 – A program that checks if the user for their login and password and checks it against a database. What names would you give these variables?

Input variables:

* username (to collect the user's login/username)
* password (to collect the user's password)

6 – A program that automatically converts English text to Morse code and vice versa. What names would you give the variables in this program?

Input variable:

* text (to collect the user's input text)

Output variable:

* morse\_code (to store the converted Morse code)

**Resources**

It is important to develop a list of resources you can use to help you solve problems. Do a web search and find three sources that have not been mentioned in the slides or books.

7 –

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