

CS118

Command Line Interface Input

For each exercise, provide a separate .PY file that performs the specified task.

For each of the programs provided, use the command: `print('\x1b[2J')` to clear the console first.

Italicized questions should be answered in the code as a comment.

Once you have completed all programs, place them in a ZIP file and submit the ZIP file.

1. In a Python3 program, store (hardcode) your name in the variable name. Use a single `print()` function call to print to the command window the phrase “Hello, World!” (without the double quotes). Next, use the `%s` placeholder in the format string of another call to `print()` to print (in the command window) a new line that reads “<your name> is glad to be here.” where <your name> represents the value stored in the variable name.

```
Console 3/A x
Hello, World!
Matthew Kindy is glad to be here.
```

2. Create a duplicate of the program from #1 and modify it: do NOT hardcode the name this time – collect the name from the user using the `input()` function and store the provided name in the variable name again. Have this program provide output just like #1.

```
What is your name? Matthew Kindy
Hello, World!
Matthew Kindy is glad to be here.
```

3. Write a Python3 program that will use the `input()` function to collect from the user their birthdate (as a string) and store it in the variable `birthdate`. Display the variable's value using `print()` with the `%s` placeholder.

```
What is your birthdate? January 1, 2020
The user's birthdate is January 1, 2020
```

4. Combine #2 and #3 to collect both a name and birthdate. In the second line of output produce, display both values on a single line using a single `print()` command and `%s` placeholders.

```
What is your name? Matthew Kindy
What is your birthdate? January 1, 2020
Hello, World!
Matthew Kindy was born on January 1, 2020 and is glad to be here.
```

5. Make a copy of #4 and modify it so that the program also collects an age (*typecast* as an integer) and stores it in the variable `age`. Display all collected values on a single line using a single `print()` command with appropriate placeholders.

```
What is your name? Matthew Kindy
What is your birthdate? January 1, 2020
How old are you (years)? 29
Hello, World!
Matthew Kindy was born on January 1, 2020, is 29 years old, and is glad to be here.
```

6. Make a copy of #5 and modify it so that the age displayed is twice what the user entered (changing nothing else). This can be done by multiplying the `age` variable and storing it back into the same variable, or by multiplying the `age` variable when using it in the `print()` statement.

```
What is your name? Matthew Kindy
What is your birthdate? January 1, 2020
How old are you (years)? 3
Hello, World!
Matthew Kindy was born on January 1, 2020, is 6 years old, and is glad to be here.
```

7. Make a copy of program #5 and modify it so that the user also provides an income (*typecast* as a floating point value) and that value is stored in the variable `income`. Modify the `print()` statement to also show the value in the `income` variable to two decimal places. *When the user enters numeric values, should s/he use symbols such as dollar signs or commas (e.g. \$10,000.32)? What can you do to help the user provide the correct entry?*

```
What is your name? Matthew Kindy
What is your birthdate? January 1, 2020
How old are you (years)? 3
How much is your income? ($) 25000
Hello, World!
Matthew Kindy was born on January 1, 2020, is 3 years old, makes $25000.00 and is glad to be here.
```

8. Make a copy of program #7 and modify it so that all values are displayed to a width of 10 characters. Be sure to keep the income value at two decimal places. *Determine what happens if the user-provided name is shorter or longer than 10 characters. Also, what happens to the display of the income value if a large income (say, 10000000000) is entered?*

```
What is your name? Matthew Kindy
What is your birthdate? 1/1/20
How old are you (years)? 3
How much is your income? ($) 2000
Hello, World!
Matthew Kindy was born on    1/1/20, is          3 years old, makes $   2000.00 and is glad to be here.
```