Exam 1 Instructions
COP3035 – Intro to Python Programming

Instruction page – please read very carefully.

Date: Friday, May 31
Time Window: 9:00 AM - 9:00 PM

Format:
Location: This test is administered remotely; there's no need to come to the classroom.
The test will be accessible on Canvas during the designated window.
This is an open-book test. You may use textbooks, lecture notes, personal notes, formulae pages, handouts, other supplementary materials prepared in advance. These materials can be either paper or electronic format.
You might be required to write code and produce output. Ensure you have a working Python environment ready.
Individual Work: This test is meant to be completed independently. Collaboration is strictly prohibited. Do not discuss or share any details about the test or its solutions with anyone.

Submission:
Download the test and print it to answer. If you cannot print it, write your answers clearly on separate sheets of paper. (You can submit handwritten, typed, or mixed).
Clearly show and explain your work for each question, where necessary.
After completion, scan your test and submit it online via Canvas. Set aside at least 10 minutes for this process.
Use a scanning app to convert your test into a single PDF.
Ensure your submission is in the form of a single PDF file.
Clearly write your name and Z number on your test.
File Naming Convention: [Your Name] _[Z Number].pdf
While Canvas does allow multiple submissions, only the last one will be considered for grading.
Do Not share any information about the test or its solutions with others.
Exclude the instruction page from your submission.
Do not include your formula sheets in your test submission.

Note: Inquiries about test results, homework and extra credit grades must be sent to the instructors within 3 days after grades are published.

Please review these instructions thoroughly to ensure a smooth testing experience. Best of luck!

Name: _____

zNumber: _____

Questions

1. (10 points). Consider the expression: x + y / z + w. Given the values: x = 25, y = 35, z = 5, w = 10. The straightforward evaluation using the order of operations yields a result of 42. However, your task is to modify the expression by adding parentheses in such a way that the result becomes 4. You can only add parentheses; you cannot change the order of the numbers or the operations.

2. (10 points). Given the following Python code, what are the values printed for the variables x and y?
```
x = 7
y = 3
x += y + y
print(x)
y *= 1 + x
print(y)

TIP: a += 1 is the same as a = a + 1
```

3. (10 points). Given the following Python objects, what is the type of each object?":
```
x = 7
y = x / 2
z = len("Wonderful World!")
m = (6, 7, 8, 9, 10)
n = {"city": "Miami", "population": 500000}
p = [40, 50, 60]
q = (x != y)
r = n['population']
s = set(p)
```

4. (15 points). Consider the following string definition:
```
text = 'The only limit to our realization of tomorrow is our doubts of today'
```

Write a line of code that will produce each substring shown below:

```
=ONLY=
z
doubts
ONLY LIMIT
```

5. (10 points). Complete the command myString = <your command here>. Your task is to write a command that forms a string by concatenating 15 hashtag characters, then your name, a space, your zNumber, another space, and finally 15 more hashtag characters.

6. (15 points). Consider a list containing your five favorite fruits: apple, banana, cherry, date, and elderberry.

   a. Create the list using the variable name myFruits.

   b. How would you add a sixth fruit (mango) to this list?

   c. Answer the following True or False questions:
   i. myFruits[0] will delete the first element.
   ii. myFruits.pop('apple') will move the fruit 'apple' to index zero.
   iii. myFruits.append('fig') will add 'fig' to the end of the list.
   iv. len(myFruits) will give the total number of fruits.
   v. 'cherry' in myFruits will return the Boolean True.
   vi. myFruits[-1] will return the last fruit in the list.

7. (15 points). Consider the following list. What command will produce each output?

   ```
   fruitList = ['apple', 'banana', 'cherry', 'date', 'elderberry', ['fig',
   'grape'], ['citrus', 12]]
   ```

   a) cherry

   b) ['date', 'elderberry']

   c) ['fig', 'grape']

   d) {'type': 'citrus', 'quantity': 12}

   e) 12

8. (15 points). Consider the following list and string:
   ```
   names = ['Alice', 'Bob', 'Charlie', 'David']
   quote = "The only way to do great work is to love what you do."
   ```
   Write a line of code that formats and prints the following string using the first name from the list and the first three words from the string:

   ```
   "Alice says: 'The only way'"
   ```

9. (BONUS 10 points) Consider the following list and string:

```
students = ['Alice', 'Bob', 'Charlie', 'David']
grades = [85, 92, 78, 90]
quote = "Success is not the key to happiness. Happiness is the key to
success."
```

Creates and prints a message that includes the total number of students, the average grade, and the quote formatted with each word starting with an uppercase letter. Use f-strings for formatting.

Example:
```
Total students: 4, Average grade: 86.25
Quote: Success Is Not The Key To Happiness. Happiness Is The Key To
Success.
```