

Exam 1
COP3035 – Intro to Python Programming

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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.

$(x+y) / (z+w)$

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 $a = a + 1$

$x=13$ $y=42$

3. (10 points). Given the following Python objects, what is the type of each object?":

```
x = 7      Int
y = x / 2   Float
z = len("Wonderful World!")  string
m = (6, 7, 8, 9, 10)  Tuple
n = {"city": "Miami", "population": 500000}  Dictionary
p = [40, 50, 60]  List
q = (x != y)  Bool
r = n['population']  Int
s = set(p)  Set
```

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= → print('{0:=^6}'.format(text[4:8].upper()))
Z      → print(text[27].upper())
doubts → print(text[-15:-9])
ONLY LIMIT → print(text[4:8].upper(), text[9:14].upper())
```

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.

```
name = 'Dylan Liesenfelt'
zNum = 'Z23688417'
myString = f{'#' * 15 + " " + name} {zNum + " " + '#' * 15}'
```

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`. `myFruits = ['apple', 'banana', 'cherry', 'date', 'elderberry']`

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

c. Answer the following True or False questions:

i. `myFruits[0]` will delete the first element. `False`

ii. `myFruits.pop('apple')` will move the fruit 'apple' to index zero. `False`

iii. `myFruits.append('fig')` will add 'fig' to the end of the list. `True`

iv. `len(myFruits)` will give the total number of fruits. `True`

v. 'cherry' in `myFruits` will return the Boolean `True`. `False`

vi. `myFruits[-1]` will return the last fruit in the list. `True`

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 `fruitList[2]`

b) ['date', 'elderberry'] `fruitList[3:5]`

c) ['fig', 'grape'] `fruitList[5]`

d) {'type': 'citrus', 'quantity': 12} `{'type': fruitList[6][0], 'quantity': fruitList[6][1]}`

e) 12 `fruitList[6][1]`

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'"
```

```
print(f'{names[0]} says: "{quote[:12]}"')
```

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.

```
print(f'Total Students: {len(students)}, Average grade: {sum(grades)/len(grades):.2f}')  
print(f'Quote: {quote.title()}')
```