

Review(ish)

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Reminders

Reminders

- Last homework of the quarter is due Thursday by the end of the day.

User Input

Poll Question: Data Types

What is the type of `x` after the following segment of code runs if the user inputs a 5 and then a 4?

```
1 a = input()  
2 b = input()  
3 x = a + b
```

- ☐ A String
- ☐ B Integer

Poll Question: Data Types

What is the result of running the following code if the user types in `world` and then `hello`?

```
1 a = int(input())  
2 b = int(input())  
3 x = a + b
```

- ☐ A SyntaxError
- ☐ B NameError
- ☐ C ValueError
- ☐ D TypeError

Poll Question: Data Types

What is the result of the following code?

```
1 def foo(a, b):  
2     a = int(input())  
3     b = int(input())  
4     return a + b  
5 foo(5, 6)
```

- ☐ A Error
- ☐ B 11
- ☐ C "11"
- ☐ D Nothing

Data Types

Poll Question: Changing Strings

What is the value of `str1` after the following segment of code executes?

```
1 str1 = "urbana"  
2 str1[0] = "e"
```

- ☐ A SyntaxError
- ☐ B IndexError
- ☐ C TypeError
- ☐ D 'erbana'
- ☐ E 'eurbana'

Poll Question: Indexing with Lists

What is the result of the following code?

```
1 l = [1, 2, 3, 4]
2 x = l.pop(1)
3 y = l.pop(1)
4 z = l.remove(1)
5 print(x, y, z)
```

- ☐ A 2 3 None
- ☐ B None None 4
- ☐ C 2 3 4
- ☐ D IndexError

Poll Question: Appending

What is the the value of `x` after the following code runs?

```
1 x = [1, 2, 3]
2 x = x.append(4)
```

- ☐ A [1, 2, 3, 4]
- ☐ B AttributeError
- ☐ C [1, 2, 3, [4]]
- ☐ D None

Poll Question: Extending

What is the result of the following code if the user types in `hello` and `world`?

```
1 x = list(input())  
2 y = list(input())  
3 x.extend(y)
```

- ☐ A ["hello", "world"]
- ☐ B ["h", "e", "l", "l", "o", "w", "o", "r", "l", "d"]
- ☐ C [["hello"], ["world"]]
- ☐ D [["h", "e", "l", "l", "o"], ["w", "o", "r", "l", "d"]]

Poll Question: Modify Tuple

What is the result of the following code?

```
1 x = (1, 2, 3, 4)
2 x[1] = 5
3 print(x)
```

- ☐ A (5, 2, 3, 4)
- ☐ B (1, 5, 3, 4)
- ☐ C TypeError
- ☐ D SyntaxError

Poll Question: Creating Tuples

What is the result of the following code?

```
1 x = (1, 2, 3, 4)
2 y = (1, 2)
3 z = x + y
4 print(z)
```

- ☐ A ((1, 2, 3, 4), (1, 2))
- ☐ B (1, 2, 3, 4, 1, 2)
- ☐ C [(1, 2, 3, 4), (1, 2)]
- ☐ D TypeError

Poll Question: Updating Sets

```
1 x = {1, 2, 3}
2 y = set("aeiou")
3 x.append(4)
4 z = x + y
5 print(z)
```

- ☐ A {1, 2, 3, 4, "aeiou"}
- ☐ B {1, 2, 3, 4, "a", "e", "i", "o", "u"}
- ☐ C ValueError
- ☐ D AttributeError

Order and Mutability

	Ordered	Mutable
String		
List		
Tuple		
Set		
Dict		

Order and Mutability

	Ordered	Mutable
String	Green	Red
List	Green	Green
Tuple	Green	Red
Set	Red	Green
Dict	Red	Green

This is a lot to remember. So memorize it through practice rather than through standard memorization.

Conditionals

Poll Question: If Statements

What's the result of running the following code?

```
1 x = 5
2 y = bool(x == 3 or 4)
```

- ☐ A True
- ☐ B False
- ☐ C SyntaxError

Poll Question: If Statements

What's the result of running the following code?

```
1 x = 5
2 y = bool(x == 3 or 4)
```

- ☐ A True
- ☐ B False
- ☐ C SyntaxError

Will it ever be false?

Boolean Operators

A Why is `x == 3 or 4` always True?

B Alternatives:

① `x == 3 or x == 4`

② `x in [3, 4]`

C Types of operators:

① **Binary operators:** and, or

② **Unary Operators:** not

Loops

Task: Validate User Input

Problem Statement: Create a function that gets 10 words that contain the letter "e", stores them in a list, then returns them. Note that this problem uses nested loops but not break or enumerate.

Task: Validate User Input

Problem Statement: Create a function that gets 10 words that contain the letter "e", stores them in a list, then returns them. Note that this problem uses nested loops but not break or enumerate.

```
1 def no_e():  
2     l = []  
3     for i in range(0, 10):  
4         word = input("Enter a word with the letter e: ")  
5         while "e" not in word:  
6             word = input("Enter a word with the letter e: ")  
7         l.append(word)  
8     return l
```


Task: Validate User Input

Problem Statement: Create a function that keeps asking the user for strings of an even length and adding them to a list until the user enters a string of an odd length. Then return the final list. You'll want to use a "while True:" loop here.

Task: Validate User Input

Problem Statement: Create a function that keeps asking the user for strings of an even length and adding them to a list until the user enters a string of an odd length. Then return the final list. You'll want to use a "while True:" loop here.

```
1 def get_even_words():
2     l = []
3     while True:
4         user_in = input("Enter a word with an even number of vowels: ")
5         if len(user_in) % 2 != 0:
6             print("That word has an odd number of letters. Terminating!!")
7             break
8         l.append(user_in)
```

OS and Files

Poll Question: Opening a File

What is returned by `os.getcwd()` when called in `myfile.py`?

```
1  home
2  |__tracertong
3      |---mydata.csv
4      |___dev_website
5          |---index.html
6          |___elements
7              |--- myfile.py    <-- You are here
8
```

- ☐ A `"/home/tracertong/dev_website/elements"`
- ☐ B `"/home/tracertong/dev_website/elements/myfile.py"`
- ☐ C `"dev_website/elements/myfile.py"`
- ☐ D `"elements/myfile.py"`

Poll Question: Opening a File

My data.csv contains three rows. What is the result of:

`len(open("mydata.csv").readlines()).`

```
1  home
2  |__tracertong
3      |---mydata.csv
4      |__dev_website
5          |---index.html
6          |__elements
7              |__ myfile.py    <-- You are here
8
```

- ☐ A 2
- ☐ B 3
- ☐ C 4
- ☐ D FileNotFoundError
- ☐ E SyntaxError

Poll Question: Opening a File

We are script myfile.py and we want to open mydata.csv.

```
1  home
2  |__tracertong
3      |---mydata.csv
4      |___dev_website
5          |---index.html
6          |___elements
7              |___ myfile.py    <-- You are here
8
```

- ☐ A fo = open("../../mydata.csv")
- ☐ B fo = open("/../../mydata.csv")
- ☐ C fo = open("/tracertong/mydata.csv")
- ☐ D fo = open("../../../mydata.csv")