Topic 2: Variables, Expressions, and Spreadsheets

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Mon, June 21 2021

1. Homework 2 is posted:
   1. Due at 11pm (CST) this Friday (June 25)
   2. Covers two topics:
      1. Topic 2 - Today's lecture and your last reading
      2. Topic 3 - Wednesday's lecture.
   3. **Start homework early**
2. Post-Reading 3 and zyBook topic 3 participation activities due tommorow at 11:00pm (CST).
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   1. http://cbtf.engr.illinois.edu/sched/
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Muddiest Points

Poll Question: Spreadsheets

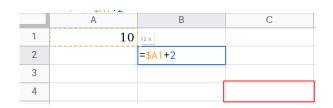If I copy the contents of B1 to C4 what formula will be in C4?

1. =$A0 + 2
2. =$A2 + 2
3. =$A3 + 2
4. =$C0 + 2
5. =$C2 + 2
6. =$C3 + 2

	A	B	C
1	10		
2		=$A1+2	
3			
4			

Poll Question: Python Naming

Which are legal python names?

- ____
- 12monkeys
- l33tCoder42

1. 1 and 2
2. 1 and 3
3. 2 only
4. 2 and 3
5. 1, 2, and 3

Poll Question: Program Tracing

What is the value of y after this code executes?

```
x = 2
y = x + 3
x = 5
```

① 2

② 3

③ 5

④ 8

⑤ 10

Poll Question: Program Tracing

What get outputted to the screen as a result of running the following
program if the user types in 5?

```
x = input(Enter a number: )
y = x + 3
print(y)
```

1. TypeError
2. SyntaxError
3. 53
4. 8

Poll Question: Program Tracing

Result of running this code if the user types in 2 and 10?

```
x = int(input())
y = int(input())
z = x + y
print(z)
```

1. TypeError
2. SyntaxError
3. 12
4. 210

Poll Question: Spreadsheets

What will be the expression when the cell at B0 is copied to D4?

1. =$C$1+$C2
2. =$A$1+$D4
3. =$A$5+$A2
4. =$A$1+$A4
5. =$A$1+$A5

	A	B	C	D
1	10	=$A$1+$A2		
2	2			
3	1			
4	0			
5	-1			

Poll Question: Whitespace

Which of the following are considered ẃhitespace?́

1. Spaces
2. Tabs
3. Newlines
4. Spaces and Tabs
5. Spaces, Tabs, and Newlines

Poll Question: Whitespace

Which of the following are considered ́whitespace ́?

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Whitespace is any character that takes up vertical or horizontal space bu does not produce an otherwise visible mark.

Topic Review: Escape Character

1. Treat backslash($\backslash$) as a special character
2. $\backslash$means that the character *immediatly* following it should be treated differently.
   1. $\backslash$' and $\backslash$" escape quotes within a string.
   2. $\backslash$t encodes a tab.
   3. $\backslash$n encodes a new line.
   4. $\backslash\backslash$ encodes a slash.

Poll Question:

How many of the following characters are visible on the screen?

```
print ( ' \ t \ \ n \ \ \ t ' )
```

1. 1
2. 2
3. 3
4. 4
5. 5

Announcements   Poll Questions   **Topic Review: Escape Character**   Topic Review: More Math Operators   Topic Review: Orders of O

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Poll Question: Python Literals

Which of the following is not a valid Python literal?

1. 1.00001

2. 1E-7

3. 1,097

4. -3.00

5. '\'\'''

Division, Floor Division, and Modulo

1. Division operator (/) gives best approximation to true result and *always return a float*.

2. Floor division (//) rounds down the closet whole number. The type of the result will follow the normal rules.

3. Modulo operator(%) performs a division and returns the remainder. The type of the result will always be the same.

4. For any numbers x and y, the following equality holds:
   $(y == (y // x) * x + (y \% x))$

Poll Question: More Math Operators

Which computes how many (whole) apples I can give to each friend?

1. num_friends / num_apples

2. num_apples / num_friends

3. num_friends // num_apples

4. num_apples // num_friends

5. num_friends % num_apppples

6. num_apples % num_friends

Order of Operations in Python

Highest

- Parentheses precedence
- Exponentiation
- Positive and negative
- Multiplication, Division, Modulo
- Addition, Subtraction precedence

Lowest

Note: Python evaluates from left to right within a precedence level

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