CSE8A - Lecture 2

Wednesday, April 3, 2024 9:00 AM

PA1 released - due next Wednesday @ 8am
Discussions - 4-450 & 5-550
Lab - Thursday - see webreg for your registered time

How to use Stepik?

Go to Stepik Course: https://stepik.org/course/100726/syllabus
Click "Join this course"
Click "Log in"
Note: Each section (e.g., 1.2) will have multiple steps with it

Topics for Today

- Expressions
- Order of Operations
- Numeric Data Types
  - int
  - float
- Variables

Lecture 2

https://webclicker.web.app/
Create account
or vote anonymously
Course Code: TFUKOZ

Review Exercise: What is Programming?

1) Which among the following statements are true. Choose all that apply.
- T Python is a text based programming language
- T A text editor is a tool that is used to write python code
- T A python interpreter is a software program that converts code written in Python into machine understandable binary format
- F A python interpreter is an optional tool to run a python program

A) True B) False

actually required

Exercise: Expressions

2) What is the result of the expression below?

```
>>> 5 + 7
```

5+7 → 12

A. 5 + 7 B. 12 C. '5 + 7' D. None of the above

3) What is the result of the expression below?

```
>>> "5 + 7"
```

" " → String

A. 5 + 7 B. 12 C. '5 + 7' D. None of the above

4) What is the result of the expression below?

```
>>> 7 / 2
```

division 7/2 → 3.5 → float

A. 3 B. 3.5 C. '7 / 2' D. None of the above

5) What is the result of the expression below?

```
>>> 7 // 2
```

floor division 7//2 → 3 → int, truncate the decimal

A. 3 B. 3.5 C. '7 // 2' D. None of the above

6) What is the result of the expression below?

```
>>> 7 % 2
```

mod modulus module 7%2 → 1 remainder, 3 r 1

A. 1 B. 2 C. 3 D. 3.5

7) What is the result of the expression below?

```
>>> 2 ** 4
```

exponent 2^4 → 2 * 2 * 2 * 2 → 16

A. 4 B. 8 C. 16 D. 32

Exercise: Order of Operations

8) What is the result of the expression below?

```
>>> 3 + 4 * 5
```

7+ 20 → 23

A. 12 B. 23 C. 35 D. 60

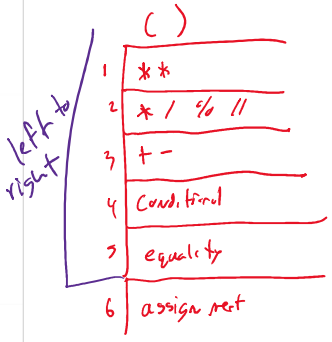
9) What is the result of the expression below?

```
>>> 3 - 2 ** 4 % 3 * (4 + 1)
```

A. 1 B. 0 C. -1 D. -2

Everyone try this on your own! - 1 minute
Vote!
Discuss with each other - 3 minutes

Name: _____ PID: _____ Code: 8150



>>> 3 - 2 ** 4 % 3 * (4 + 1)

3 - 16 % 3 * 5

1 * 5

3 - 5 → -2

3 - (((2 ** 4) % 3) * (4 + 1))

Exercise: Numeric Data Types

10) What is the data type of the expression below in

Exercise: Variables

14) What is the result of the statements below?

5 + 2.5 → 2.5 float

int

Exercise: Numeric Data Types

10) What is the data type of the expression below in Python?

```
>>> 42
```

↑ no decimal → int literal

A. int B. float C. string
D. Number

11) What is the data type of the expression below in Python?

```
>>> 42.0
```

→ decimal → float literal

A. int B. float C. string
D. Number

12) What is the data type of the expression below in Python?

```
>>> 5 / 2
```

→ 2.5 float

↑ float division

A. int B. float C. string
D. Number

13) What is the data type of the expression below in Python?

```
>>> 5 // 2
```

→ 2

↑ int division (floor division)

A. int B. float C. string
D. Number

Exercise: Variables

14) What is the result of the statements below?

```
>>> year = 2020
>>> year = year + 1
>>> year
```

year 2021

A. 2019 B. 2020 C. 2021
D. 2022

15) What is the result of the statements below?

```
>>> year = 2020
>>> next_year = year + 1
>>> year
```

year 2020

next_year 2021

A. 2019 B. 2020 C. 2021
D. 2022

16) What is the result of the statements below?

```
>>> year = 2020
>>> prev_year = year - 1
>>> prev_year + 2
```

A. 2019 B. 2020 C. 2021
D. 2022

17) Writing a program

- Write a Python program to compute the perimeter of a rectangle
- Given values: **width** and **height**
- Store the result in: **perimeter**
- The program should print the area of circle as shown below

```
>>> width = 10
>>> height = 5
...
>>>perimeter
30
```

```
width = 10
height = 5

perimeter = (2 * width) + (2 * height)

print(perimeter)
```

18) Writing a program

Write a Python program to calculate the weekly total pay for a student worker who is paid for each hour of work (no overtime).

```
pay_rate = 20
hours_worked = int(input("Hours worked: "))
total_pay = pay_rate * hours_worked
print(total_pay)
```

5 + 2.5 → float

5 + 2 → int

5 + 20 → float

5 * 2 → int