CSE 8A: Intro to Programming in Python

Fall 2021

Lecture 3 - type casting-using functions-inputs

UC San Diego

Announcement

- PA1 released on Tuesday
- lab 1 on Thursday
- Email me for personal questions (yic242@eng.ucsd.edu)

Topics for Today

- Variables
- Type casting
- errors
- input

Variables

A storage location

- name
- value
- type
  - str, int, float
  - assignment statement: =
    - lhs = rhs

Exercise: Strings

What is the result of the statements below?

```
name = "cse 8a"
print("Hello" + name)
```

A. Hello cse 8a
B. Hellocse8a
C. Hello name
D. Hellocse 8a

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Exercise: Strings

What is the result of the statements below?

```
name = "cse 8a"
print("Hello" + "name")
```

A. Hello cse 8a
B. Hellocse8a
C. Hello name
D. Helloname

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Exercise: Strings

What is the result of the statements below?

```
name = 'Maria'
position = 'best'
print(name + ' is the ' + position)
```

A. Maria is the best
B. name is the position
C. Maria + is the + best

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Exercise: Strings

What is the result of the statements below?

```
print('CSE 8A is ' + 'so' * 3 + ' much fun!')
```

A. `CSE 8A is so much fun!`
B. `CSE 8A is so 3 much fun!`
C. `CSE 8A is so so so much fun!`
D. `CSE 8A is sososo much fun!`

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Type conversion (type cast)

- Each value has a type in python (use type to check)
- We might want to view a data from a different angle
  - treat an int into a float
  - treat a str as an int
- Note type conversion only views data as a different type for once, it doesn't change the type of the value or variable

- int - convert the data into an int (base 10)
- float - convert the data into a decimal
- str - convert the data into a string
- Python will try to convert if possible. If not possible, it will generate an error

Exercise: Type Conversions

Which among the following type conversions will result in an error?

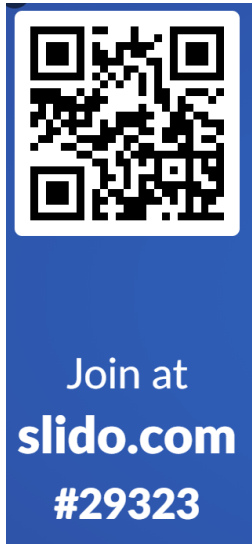
```
1. int("420")
2. float("42")
3. str(3.14)
4. int("1.13")
5. float("pi")
```

A) 1, 2, 3

B) 2, 3, 4

C) 3, 4, 5

D) 4, 5



Calling functions

Functions are tools

You can call a function just like you can use a tool

```
max (3, 5)
```

Exercise: Using Functions

How many function calls are there?

```
max(len("cse8a"), len("paul cao"))
```

A) 1
B) 2
C) 3
D) 4

len(s) - len takes a string s and returns its length as an integer

Exercise: Using Functions

What is printed out?

```
print(max(len("cse8a"), len("paul cao")))
```

A) 5
B) 7
C) 13
D) 8
E) I am not sure

len(s) - len takes a string s and returns its length as an integer

Exercise: The Input Function

What will be printed when the program below is executed? Assume the user enters 10 for num1 and 20 for num2 when the program prompts the user for input. The program is written in a file named add_num.py

```
num1 = input('Enter num1: ')
num2 = input('Enter num2: ')
total = num1 + num2
print(total)
```

A) 10 B) 20 C) 30 D) 1020

Coding exercise

Read in a person's age and name, print out this person's age 2 years later.