

COMP 110

Fall 2021 - Section 002 - Remote - 11:00am

Class 18 - Dictionary Practice

Announcements

- Reading 01 - Weapons of Math Destruction - Due Sat 11/8 at 11:59pm
- EX 07 - Data Utils - Out later Today - Due Mon 11/1 at 11:59pm
- Quiz 03 - Dictionaries, References, Lists and Function Calls
- Quiz 03 - Practice on Resources > Optional Practice
- Spooky Programming Mystery *Coming Soon for Fun and Street Cred*
- Hack 110! - Friday, November 12th!

COMP110 presents...

HACK 110

at UNC Chapel Hill

HACK110 is a beginner hackathon that you are all encouraged to participate in!

What is a hackathon?

A hackathon is an overnight event where you team up with others to make a code project!

Hackathons also have workshops, fun side events and lots of free food and goodies :)

DATE:

Friday, November 12 @ 7pm
to November 13 @ 7am

PLEASE MAKE SURE TO RSVP!!!!
(link to left)

<https://bit.ly/hack110-21f>

Diagram 1)

```
2 square_to_root: dict[int, int] = {}
3
4 i: int = 1
5 while i < 5:
6     square_to_root[i ** 2] = i
7     i += 1
8
9 print(square_to_root)
```

Check for understanding: why couldn't square_to_root be a list[int]?

Diagram 2)

```
1 a: dict[str, int] = {"k": 1}
2 b: dict[str, int] = a
3 c: dict[str, int] = b
4 a["k"] = 2
5 b = {"k": 3}
6 print(a["k"])
7 print(b["k"])
8 print(c["k"])
```

Diagram 3)

```
1 row_data: list[dict[str, str]] = [  
2     {"name": "UNC", "city": "Chapel Hill"},  
3     {"name": "Duke", "city": "Durham"}  
4 ]  
5  
6 col_data: dict[str, list[str]] = {  
7     "name": ["UNC", "Duke"],  
8     "city": ["Chapel Hill", "Durham"]  
9 }
```

```
1 row_data: list[dict[str, str]] = [  
2     {"name": "UNC", "city": "Chapel Hill"},  
3     {"name": "Duke", "city": "Durham"}  
4 ]  
5  
6 col_data: dict[str, list[str]] = {  
7     "name": ["UNC", "Duke"],  
8     "city": ["Chapel Hill", "Durham"]  
9 }
```

Diagram 4)

```
3 def invert(kvs: dict[str, int]) -> dict[int, str]:
4     result: dict[int, str] = {}
5     for key in kvs:
6         result[kvs[key]] = key
7     return result
8
9
10 counts: dict[str, int] = {"a": 1, "b": 2, "c": 1}
11 print(len(counts))
12
13 freqs: dict[int, str] = invert(counts)
14 print(freqs[1])
15 print(len(freqs))
```

```
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4     result: dict[int, str] = {}
5     for key in kvs:
6         result[kvs[key]] = key
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