

COMP 110

Fall 2021 - Section 002 - In-person - 11am
Class 12 - Lists Practice

Today's Goals

1. Announcements

- Tonight: Considering / definitely majoring or minoring? Attend the panel **What I Wish I Knew in COMP110** hosted by current COMP110 UTAs.
Sitterson 014 - 7pm!
- EX05 - More list utilities, will be released today!
- Quiz 02 - Lists, references, and scopes.

2. Practice and review lists and diagrams

Challenge Question #1

```
1  """CQ1) Scopes."""
2
3
4  def f(x: float) -> float:
5      x += 1.0
6      y: float = x + 2.0
7      return x + y
8
9
10 def g() -> None:
11     global y
12     x: float = f(3.0)
13     y = f(x + 4.0)
14
15
16 x: float = 0.0
17 y: float = 0.0
18 g()
```

Challenge Question #2

```
1  """CQ2) Move back."""
2
3
4  def main() -> None:
5      message: list[str] = ["T", "G", "D", "H"]
6      moveBack(message, 0)
7      moveBack(message, 2)
8      print(message)
9
10
11 def moveBack(xs: list[str], index: int) -> None:
12     temp: str = xs[index]
13     xs[index] = xs[index + 1]
14     xs[index + 1] = temp
15
16
17 if __name__ == "__main__":
18     main()
```

Challenge Question #2

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1  """CQ2) Move back."""
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4  def main() -> None:
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7      moveBack(message, 2)
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13     xs[index] = xs[index + 1]
14     xs[index + 1] = temp
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16
17 if __name__ == "__main__":
18     main()
```

Challenge Question #3

```
4 def differences(a: list[int], b: list[int]) -> int:
5     """Count the differences between two lists."""
6     result: int = 0
7     short: list[int]
8     if len(a) >= len(b):
9         result = len(a) - len(b)
10        short = b
11    else:
12        result = len(b) - len(a)
13        short = a
14
15    i: int = 0
16    while i < len(short):
17        if a[i] != b[i]:
18            result += 1
19            i += 1
20
21    return result
22
23
24 xs: list[int] = [1, 3, 3, 4, 5]
25 ys: list[int] = [1, 2, 3]
26 print(differences(xs, ys))
```

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```