
AFRO
PIX
2026
COMMUNITY CENTER
FEBRUARY 28, 2026
REGISTRATION OPEN NOW

Reference Types & Practice with Lists

Announcements

Re: **Quiz 01**

- Great job!! Median was ~85%
- Graded quizzes will be available on Gradescope soon! Once they're released:
  - *Please review what you missed ASAP*; we will build on the topics covered in Quiz 01 throughout the course, and these foundational concepts are vital!
  - Don't understand a particular question/part of a memory diagram? Please visit us in Office Hours or Tutoring! Full list of hours on the site's support page
  - Please submit a regrade request *if you believe your quiz was not graded correctly according to the rubric*

Primitive Types vs. Reference Types

```python
"""An example of primitive vs. reference types."""

a: int = 0
b: int = a
b += 1
print(f"a is: {a}")
print(f"b is: {b}")

c: list[int] = [b, 4]
d: list[int] = c

d.append(13)
c.pop(1)
d[0] += 1

print(f"c is: {c}")
print(f"d is: {d}")
```

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"""An example of primitive vs. reference types."""

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```

Takeaways

Your turn: write a function called **`gen`** that takes as input an int called **`n`**, and returns a **`list`** of integers from 0 up to, but not including **`n`**

```python
def gen(stop: int) -> list[int]:
    """Generate a list from 0 to stop, not inclusive."""
    i: int = 0
    acc: list[int] = []
    while i < stop:
        acc.append(i)
        i = i + 1
    return acc


print(gen(3))
```

Diagramming a Nested List

```
1   def sum2d(xs: list[list[int]]) -> int:
2       """Calculate the sum of a 2-dimensional list of lists."""
3       total: int = 0
4       row_i: int = 0
5       while row_i < len(xs):
6           col_i: int = 0
7           while col_i < len(xs[row_i]):
8               total += xs[row_i][col_i]
9               col_i += 1
10          row_i += 1
11      return total
12
13
14  values: list[list[int]] = [[1, 2, 3], [3, 4, 5]]
15  print(sum2d(values))
```