Python Programming

Practice

Mostafa S. Ibrahim
Teaching, Training and Coaching since more than a decade!

Artificial Intelligence & Computer Vision Researcher
PhD from Simon Fraser University - Canada
Bachelor / Msc from Cairo University - Egypt
Ex-(Software Engineer / ICPC World Finalist)

Practice: Reverse in place

- Read a line of N integers
- Recall: list.reverse()
  - It performs in-place reverse for the list
  - In-place: Change the current list, don’t create another one
- We will implement our own reverse function in an iterative style
- def our_reverse(list)
  - It doesn’t have a return
- Stop and think!

Practice: Reverse in place

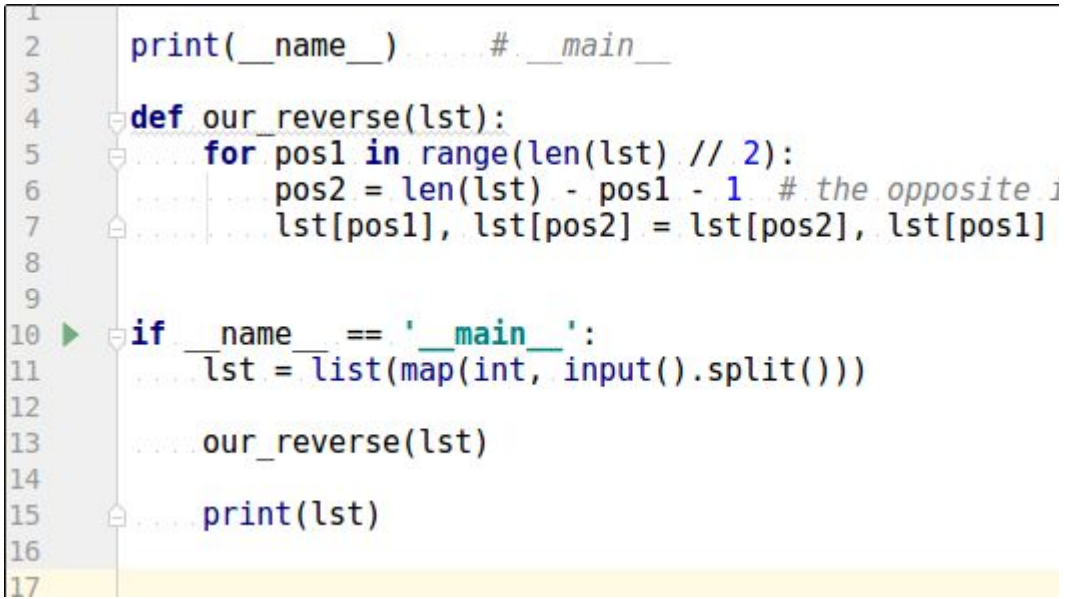
- Simple idea: Iterate from the begin and end in same time
  - Swap the 2 positions
  - Do this tell the middle only
- Let say list is 1 2 3 4 5 6 7 8
  - Step 1: swap (1, 8) ⇒ 8 2 3 4 5 6 7 1
  - Step 2: swap (2, 7) ⇒ 8 7 3 4 5 6 2 1
  - Step 3: swap (3, 6) ⇒ 8 7 6 4 5 3 2 1
  - Step 4: swap (4, 6) ⇒ 8 7 6 5 4 3 2 1
    - Stop after n/2 steps

Our reverse

```
2
3   def our_reverse(lst):
4       for pos1 in range(len(lst) // 2):
5           pos2 = len(lst) - pos1 - 1  # the opposite in the list
6           lst[pos1], lst[pos2] = lst[pos2], lst[pos1]
7
8
9   def main():
10      lst = list(map(int, input().split()))
11
12      our_reverse(lst)
13
14      print(lst)
15
16
17  main()
```

__name__

- Whenever the Python interpreter reads a source file, it sets a special variable __name__
  - The value will be "__main__" if you are running this file
  - In big syetm with several variables, the if condition will be True only when you run from this file
  - Future reading



"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."