



Definite Loops

- Quite often we have a **list** of items of the **lines in a file** - effectively a **finite set** of things
- We can write a loop to run the loop once for each of the items in a set using the Python **for** construct
- These loops are called “**definite loops**” because they execute an exact number of times
- We say that “**definite loops iterate through the members of a set**”



A Simple Definite Loop

```
for i in [5, 4, 3, 2, 1] :  
    print(i)  
print('Blastoff!')
```

5
4
3
2
1
Blastoff!



A Definite Loop with Strings

Program Output

```
friends = ['Joseph', 'Glenn', 'Sally']

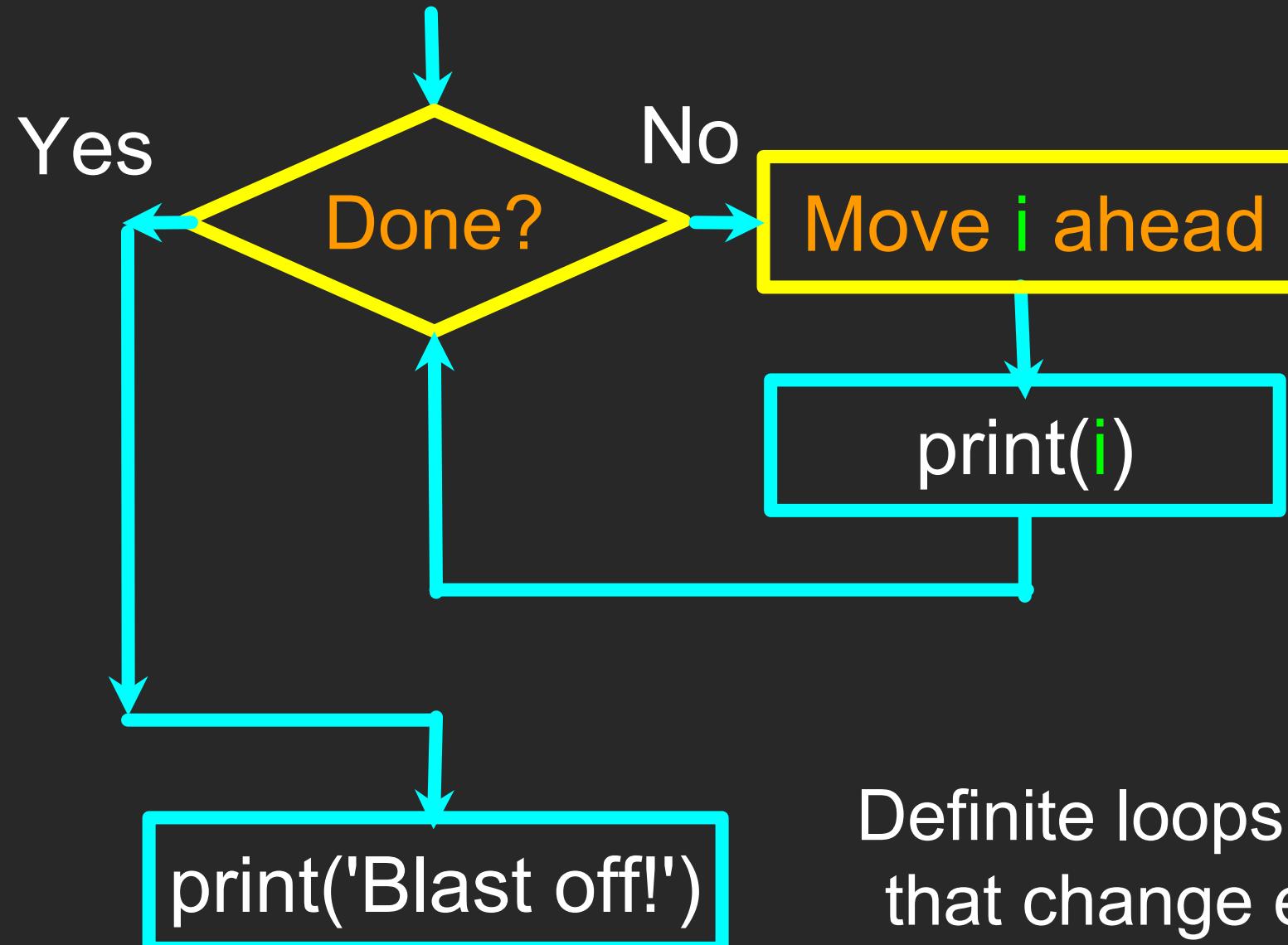
for friend in friends :
    print('Happy New Year:', friend)

print('Done!')
```

Happy New Year: Joseph
Happy New Year: Glenn
Happy New Year: Sally

Done!

A Simple Definite Loop



```
for i in [5, 4, 3, 2, 1] :  
    print(i)  
print('Blastoff!')
```

5
4
3
2
1
Blastoff!

Definite loops (for loops) have explicit **iteration variables** that change each time through a loop. These **iteration variables** move through the sequence or set.

Looking at `In...`

- The **iteration variable** “iterates” through the **sequence** (ordered set)
- The **block (body)** of code is executed once for each **value in the sequence**
- The **iteration variable** moves through all of the values **in the sequence**

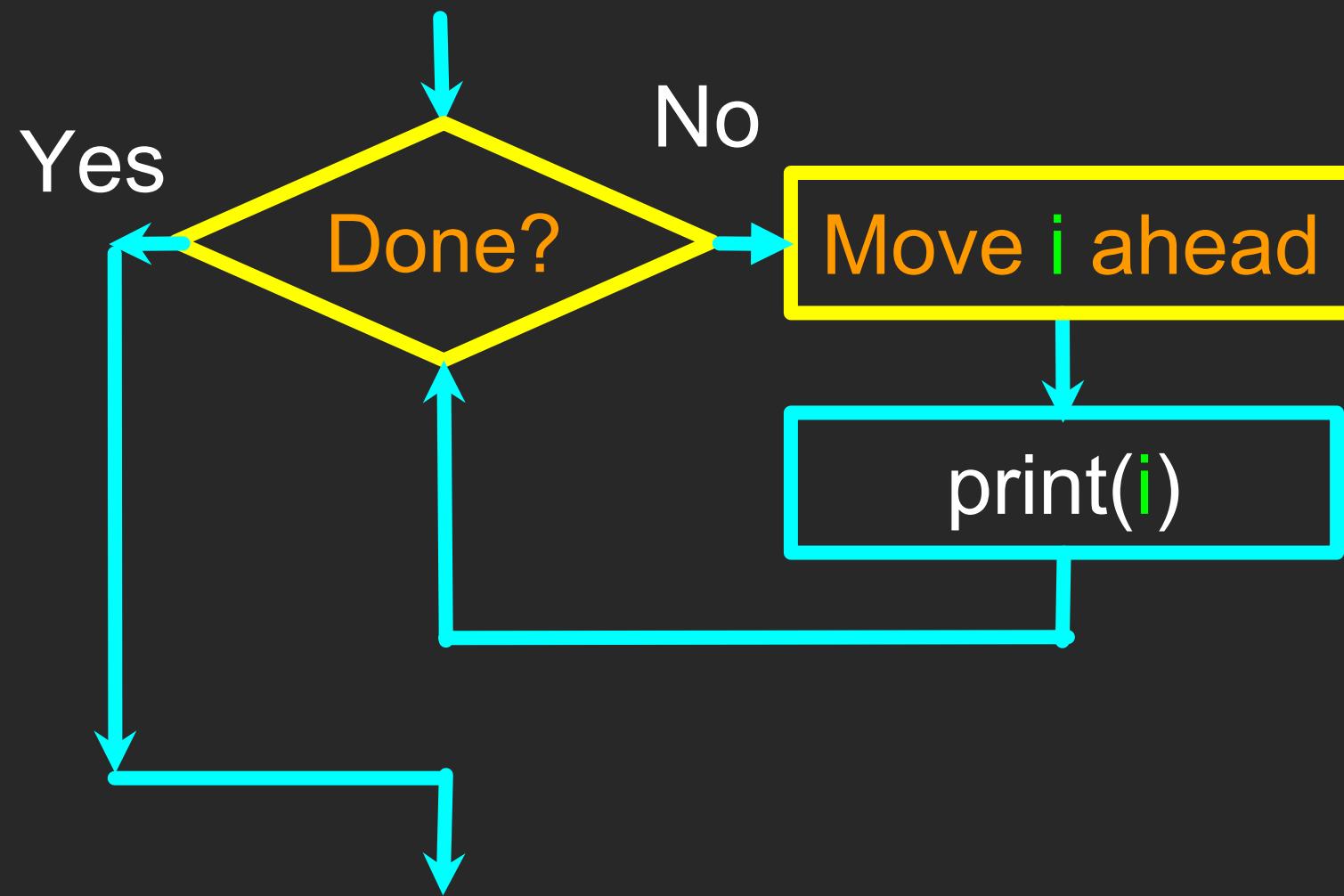
Iteration variable



```
for i in [5, 4, 3, 2, 1] :  
    print(i)
```

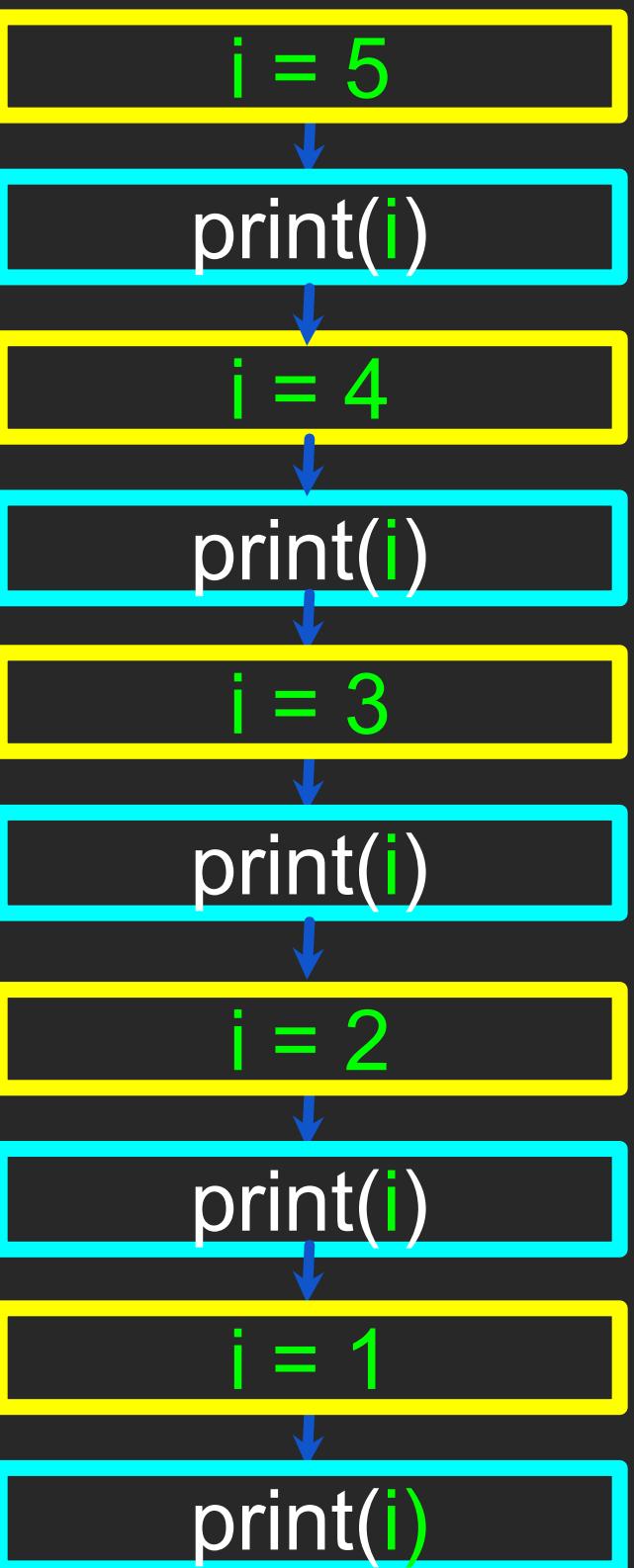
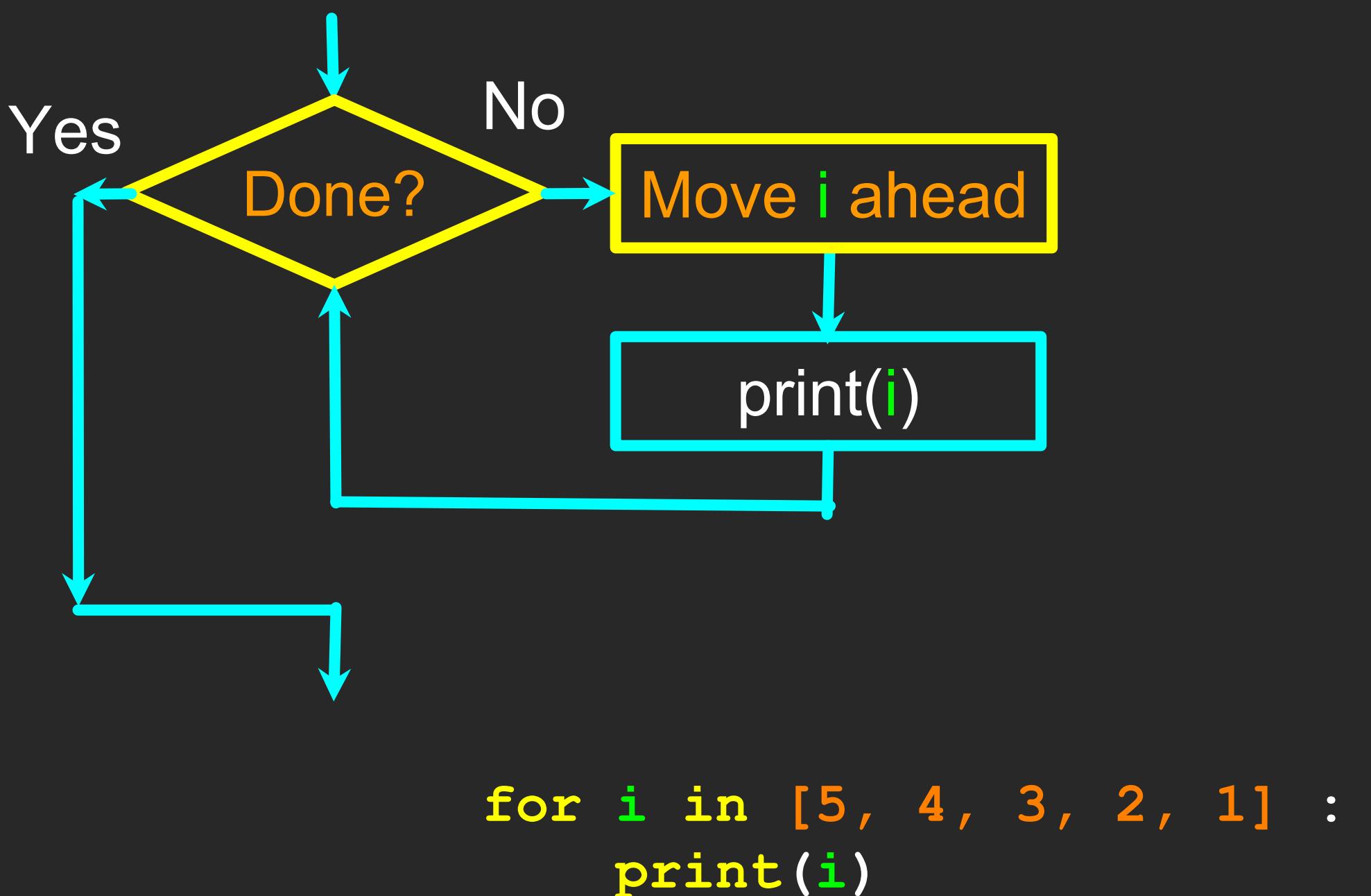
Five-element
sequence





```
for i in [5, 4, 3, 2, 1] :  
    print(i)
```

- The **iteration variable** “iterates” through the **sequence** (ordered set)
- The **block (body)** of code is executed once for each value **in** the sequence
- The **iteration variable** moves through all of the values **in** the sequence





Definite Loops

- Quite often we have a **list** of items of the **lines in a file** - effectively a **finite set** of things
- We can write a loop to run the loop once for each of the items in a set using the Python **for** construct
- These loops are called “**definite loops**” because they execute an exact number of times
- We say that “**definite loops iterate through the members of a set**”



Loop Idioms



Acknowledgements / Contributions



These slides are Copyright 2010- Charles R. Severance
(www.dr-chuck.com) of the University of Michigan School of Information and open.umich.edu and made available under a Creative Commons Attribution 4.0 License. Please maintain this last slide in all copies of the document to comply with the attribution requirements of the license. If you make a change, feel free to add your name and organization to the list of contributors on this page as you republish the materials.

...

Initial Development: Charles Severance, University of Michigan School of Information

... Insert new Contributors and Translators here