

# 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

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

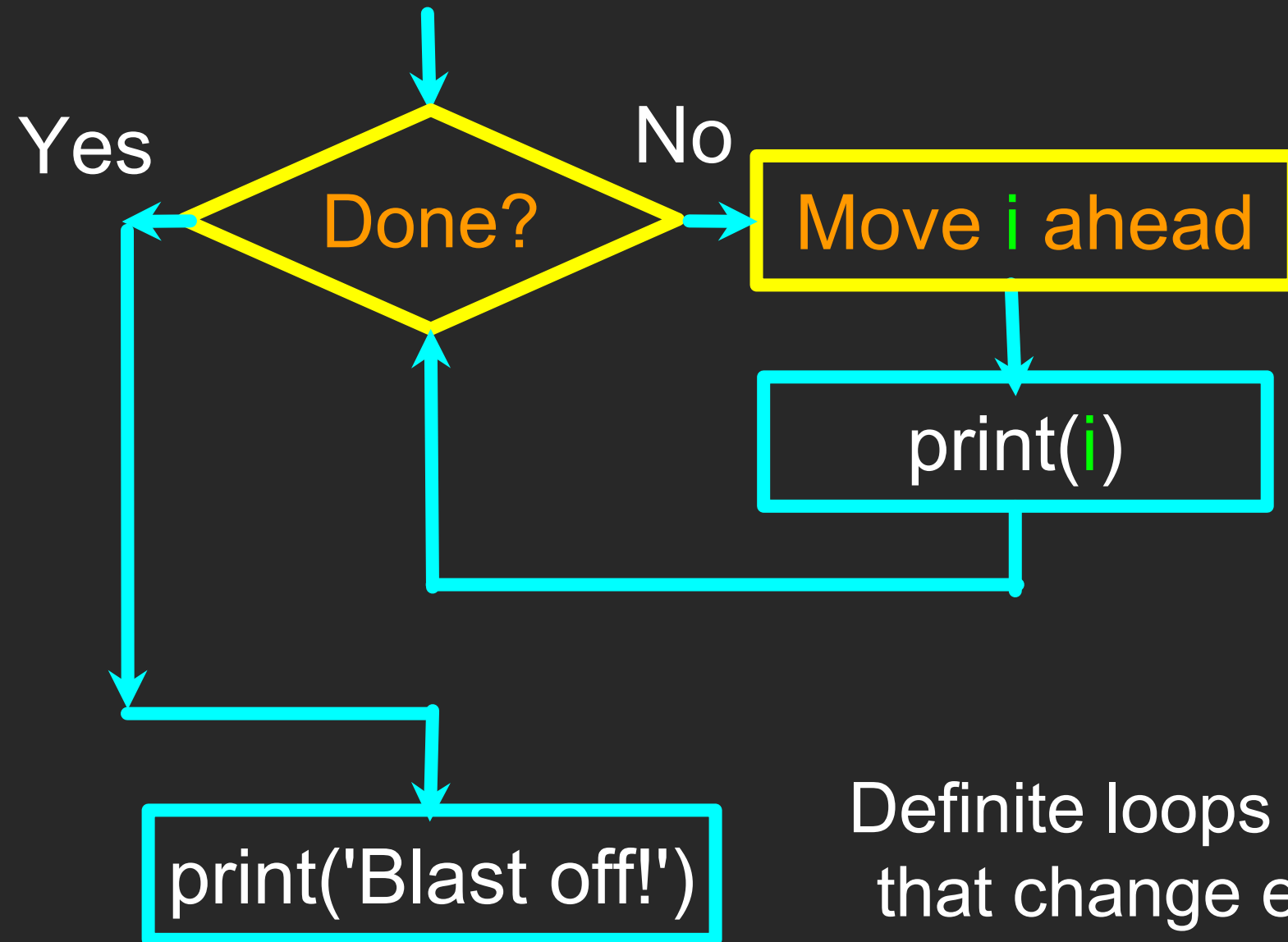
```
for friend in friends :  
    print('Happy New Year:', friend)
```

```
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**

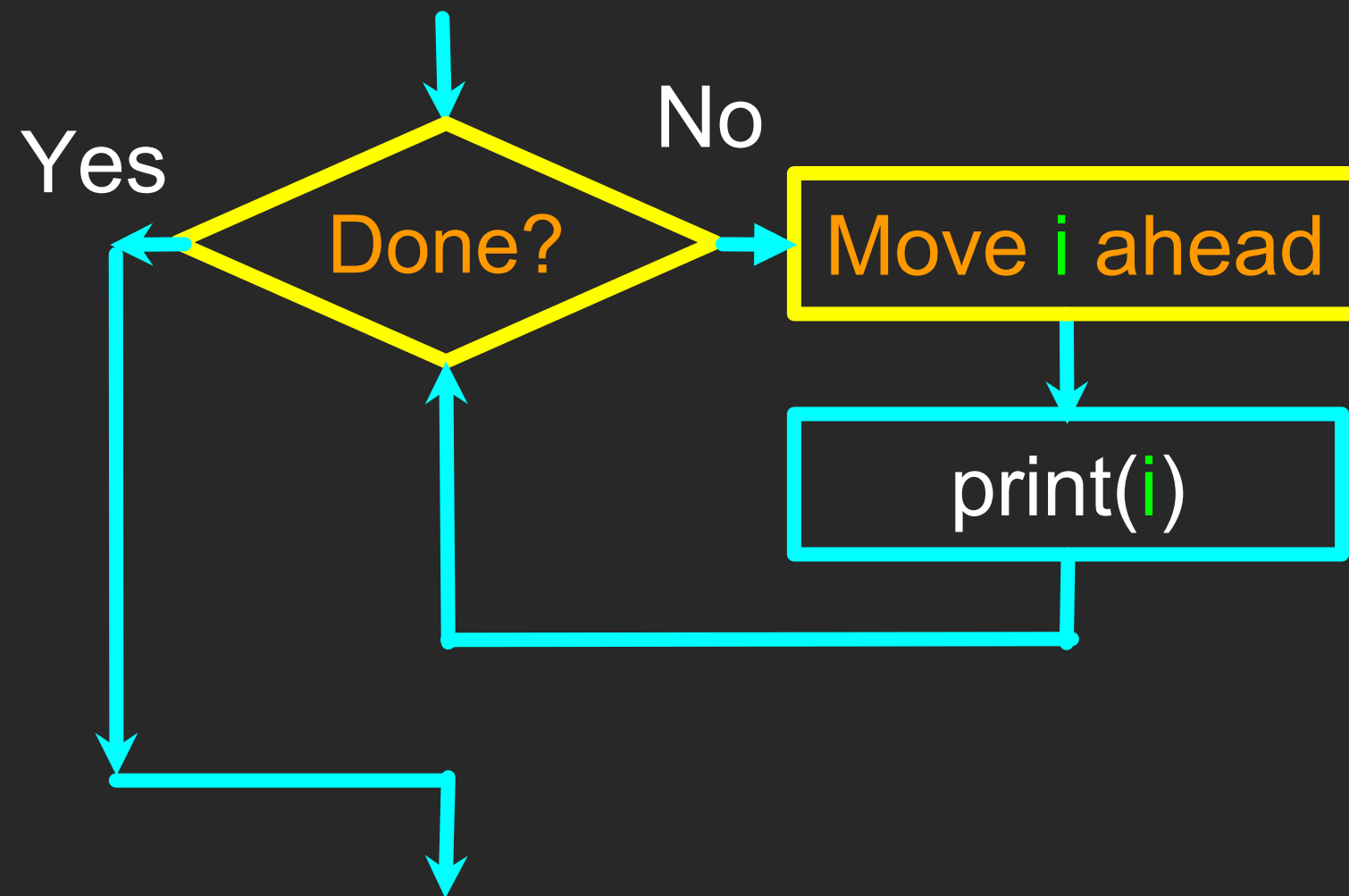
Iteration variable



Five-element  
sequence

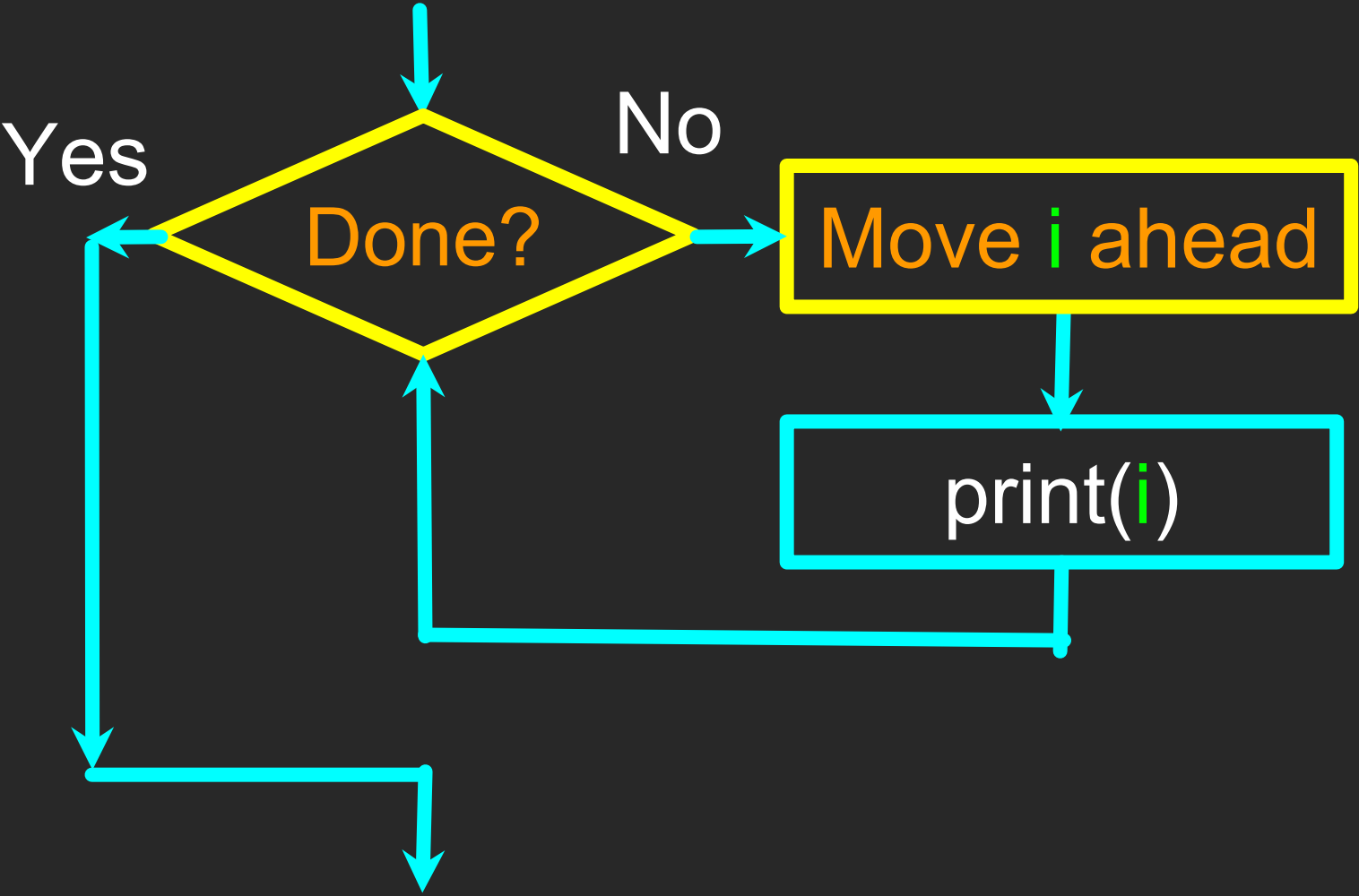


```
for i in [5, 4, 3, 2, 1] :  
    print(i)
```

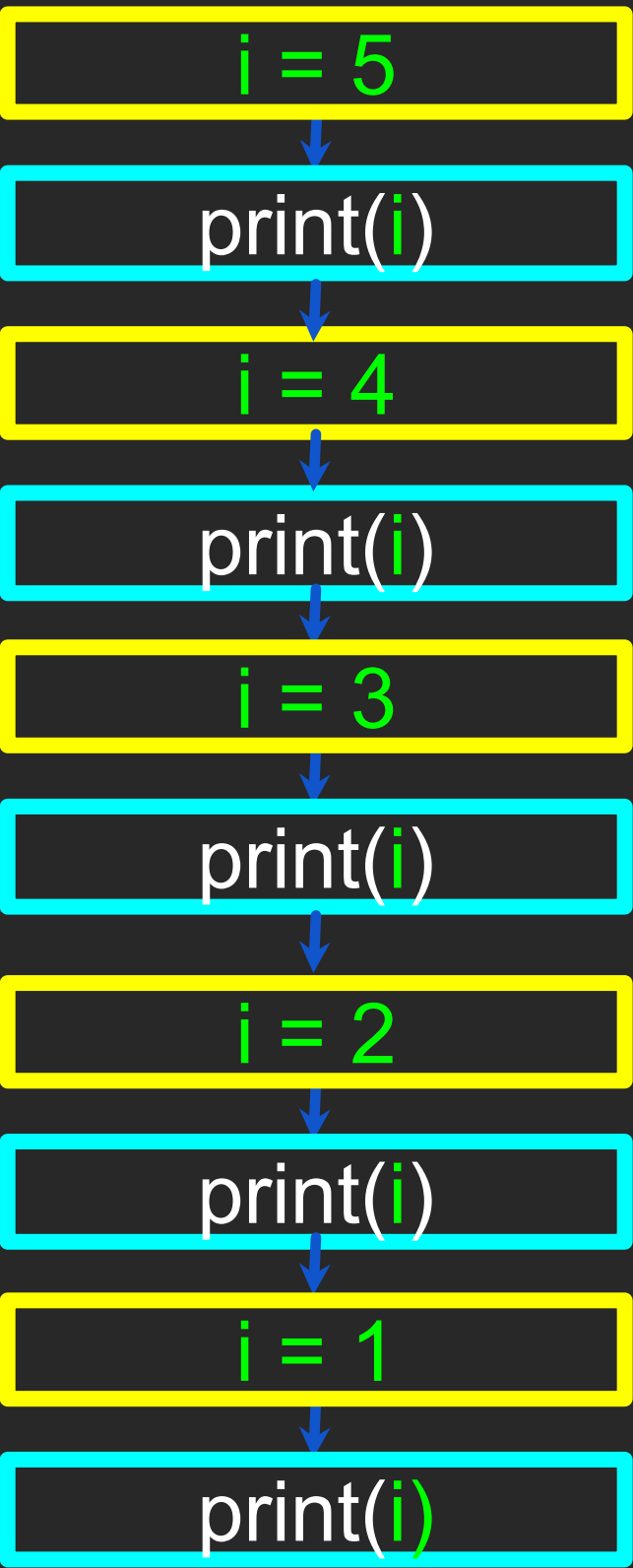


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# Loop Idioms



## Acknowledgements / Contributions



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