Building Brains

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Telling your Robot What to Think

```
def yoyo():
    forward(1, 2)
    turnLeft(1, .7)
```

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yoyo()
yoyo()
yoyo()
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```

Telling your Robot What to Think

```
def yoyo():
    forward(1, 2)
    turnLeft(1, .7)

for i in range(4):
    yoyo()
```

Python's **for** command

for VARIABLE **in** SEQUENCE:
    COMMAND
    COMMAND
    ...

Python's **for** command

```
for letter in "Hello":
    print(letter)
```

Python's **for** command

```
for letter in "Hello":
    print(letter)
```

h
e
l
l
o

Python's **for** command

```python
for letter in "Hello":
    print(letter)

for i in range(4):
    print(i)
```

Python's **for** command

```
for i in range(4):
    print(i)
```

0

1
2
3

What is range(4)?

What is range(4)?

```
>>> range(4)
```

What is range(4)?

```
>>> range(4)
[0, 1, 2, 3]
```

What is range(4)?

```
>>> range(4)
[0, 1, 2, 3]
```

New type: List

For Command

- Used for doing things N times (where N is the argument to range)

- Used for doing something to each item in the sequence

```
for i in range(N):
    dance()

for i in range(N):
    beep(.5, 440 * N)
```

Summary

- New type: "list"

- Lists and strings are both "sequences"

- New command: "for"

  - Used for doing things N times (where N is the argument to range)

  - Used for doing something to each item in the sequence