Iteration

Return

Return Statements

A return statement completes the evaluation of a call expression and provides its value. For a user-defined function $f$, switch to a new environment; execute $f$’s body. Return statement within $f$: switch back to the previous environment; $f(x)$ now has a value.

Only one return statement is ever executed while executing the body of a function.

```python
def end(n, d):
    """Print the final digits of N in reverse order until D is found."
    >>> end(3457, 5)
    7
    6
    5
    ""
    while n > 0:
        last, n = n % 10, n // 10
        print(last)
    if d == last:
        return None
``` (Demo)

Self-Reference

Returning a Function Using Its Own Name

```python
def print_all(k):
    print(k)
    return None
print_all(1)(3)(5)
``` (Demo)

```python
def print_sums(n):
    print(n)
    def next_sum(k):
        return print_sums(nk)
    return next_sum
print_sums(1)(3)(5)
``` (Demo)

Function Example: Sounds

WAV Files

The Waveform Audio File Format encodes a sampled sound wave. A triangle wave is the simple wave form with the most pleasing sound.

[Diagram of a triangle wave]