while _____:

```python

```

for variable name in _____:

```python

```
To ensure termination:
- the guard must change in the body
- The guard must eventually become false

Guard checked at end
Collections

`hello`

Ordered repeated values OK

Count from 0

Set

dict

`{ 1, 2, 3, 4 }`

Unordered no repetition

Str

list

tuple

range

item at index 0

item/relem

0 1 2 3 4 indices
range(3, 8)
3, 4, 5, 6, 7

\[
\text{range}(5) \to \text{range}(0, 1, 2, 3, 4)
\]

\[
[\text{low, high}]
\]
\[
\text{low} \leq \text{thing} < \text{upper}
\]
\[ S = \text{'high'} \]

\[ S[1:] \rightarrow \text{'} \]

\[ r = \text{range}(3, 9) \]

\[ r[0] \rightarrow 3 \]