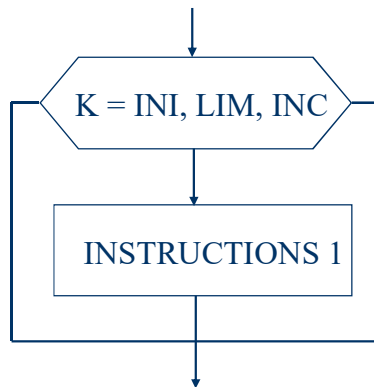# Repetition structure

For loop

- Repeats (loop) a block of instructions for a certain number of times based on a sequence. A loop variable takes each value of the sequence one by one. A typical use of a for loop is to repeat a block of instructions for each value of a variable (**k**) starting on a value (**ini**) and incrementing its value by (**inc**) until its value is greater or equal to the value (**lim**)

FLOWCHART	PSEUDOLANGUAGE	PYTHON

FLOWCHART

```
        │
        ▼
  ⬡ K = INI, LIM, INC ⬡
        │
        ▼
  ┌─────────────────┐
  │  INSTRUCTIONS 1 │
  └─────────────────┘
        │
        ▼
```

PSEUDOLANGUAGE

FOR K = INI TO LIM STEP INC

   INSTRUCTIONS 1

FOR END

PYTHON

for k in range(ini, lim, inc):

   INSTRUCTIONS 1

Repetition structure

break and continue statements and else clause

- The **break** statement breaks out the loop

- The **continue** statement continues with the next iteration of the loop

- The **else** clause is executed when the loop terminates normally but not when the loop is terminated by a **break** statement

while

```python
n = int(input("Value ="))
i = 2
while i < n:
    if n % i == 0:
        print(n,"is not a prime number")
        break
    i = i + 1
else:
    print(n,"is a prime number")
```

for

```python
n = int(input("Value ="))
for i in range(2, n):
    if n % i == 0:
        print(n,"is not a prime number")
        break
else:
    print(n,"is a prime number")
```