LOOPS
Test on next Monday

- During the session on October 7, 2019.
- Covers topics from Weeks 1 to 5.
- First part is a quiz consisting of questions similar to those in weekly quizzes.
- Second part is programming consisting of tasks similar to those in homeworks and practice sessions.
- In the first part materials not allowed, in the second part materials allowed.
- Programming tasks must be solved in Thonny.
Possible exam dates

• Monday, January 6
• Monday, January 13
• Retake Monday, January 20

Format of the exam will be similar to that of the tests.
Indefinite loops (while)

while condition:
    statement
    statement
    statement

a = 0
while a < 5:
    print('Loop')
a += 1
Definite loops (for)

for variable in list:   for a in [1, 2, 3, 4, 5]:
  statement           print(a)
  statement

for name in ['Iko', 'Püü', 'Kõu']:
  print('Hello,', name)
print('Done!')
The `break` statement

```python
a = 100
while a < 107:
    if a % 7 == 0:
        break
    a += 1
print(a)
```
The `continue` statements

```python
while condition:
    statements
    continue
    statements
```

```python
a = 0
while a < 100:
    a += 1
    if a % 3 == 0:
        continue
    if a % 5 == 0:
        continue
    print(a)
```
Infinite loops

while True:
    s = input("Enter 'done': ")
    if s == 'done':
        break
print("Thank you!")
Shorthands for increment, decrement, etc

\[
x = x + 1
\]
\[
x = x - 1
\]
\[
a = a \times 2
\]
\[
a = a / 10
\]
\[
a = a \% 3
\]
\[
a = a ** 2
\]
\[
x += 1
\]
\[
x -= 1
\]
\[
a *= 2
\]
\[
a /= 10
\]
\[
a %= 3
\]
\[
a **= 2
\]
Constant None

```python
>>> type(None)
<class 'NoneType'>
```

Examples:

- Variable without a value
  ```python
  largest_so_far = None
  ```

- Function without return value
  ```python
def fun():
    print('A')
print(fun())
```
Review of homework

- H5.1. Product
- H5.2. Number of days
- H5.3. Dragons, snakes, and dinosaurs