LØKKER

INF100

HØST 2024

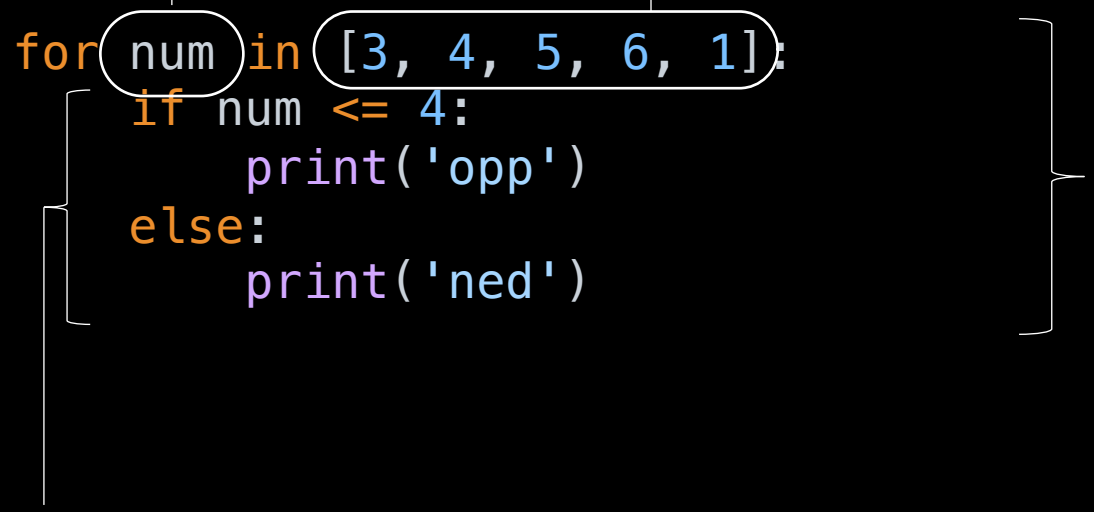
Torstein Strømme

I filen *joker.py*, skriv et program som ber brukeren om 5 tall. Disse representerer grunntallene vi får oppgitt når vi begynner å spille Joker. Deretter skal programmet skrive ut enten "opp" eller "ned", for hvert av de fem grunntallene. En kjøring av programmet kan se slik ut:

```
tall1 = 3
tall2 = 4
tall3 = 5
tall4 = 6
tall5 = 1
opp
opp
ned
ned
opp
```

iterand. variabel som viser til et nytt element i den iterable for hver iterasjon av løkken

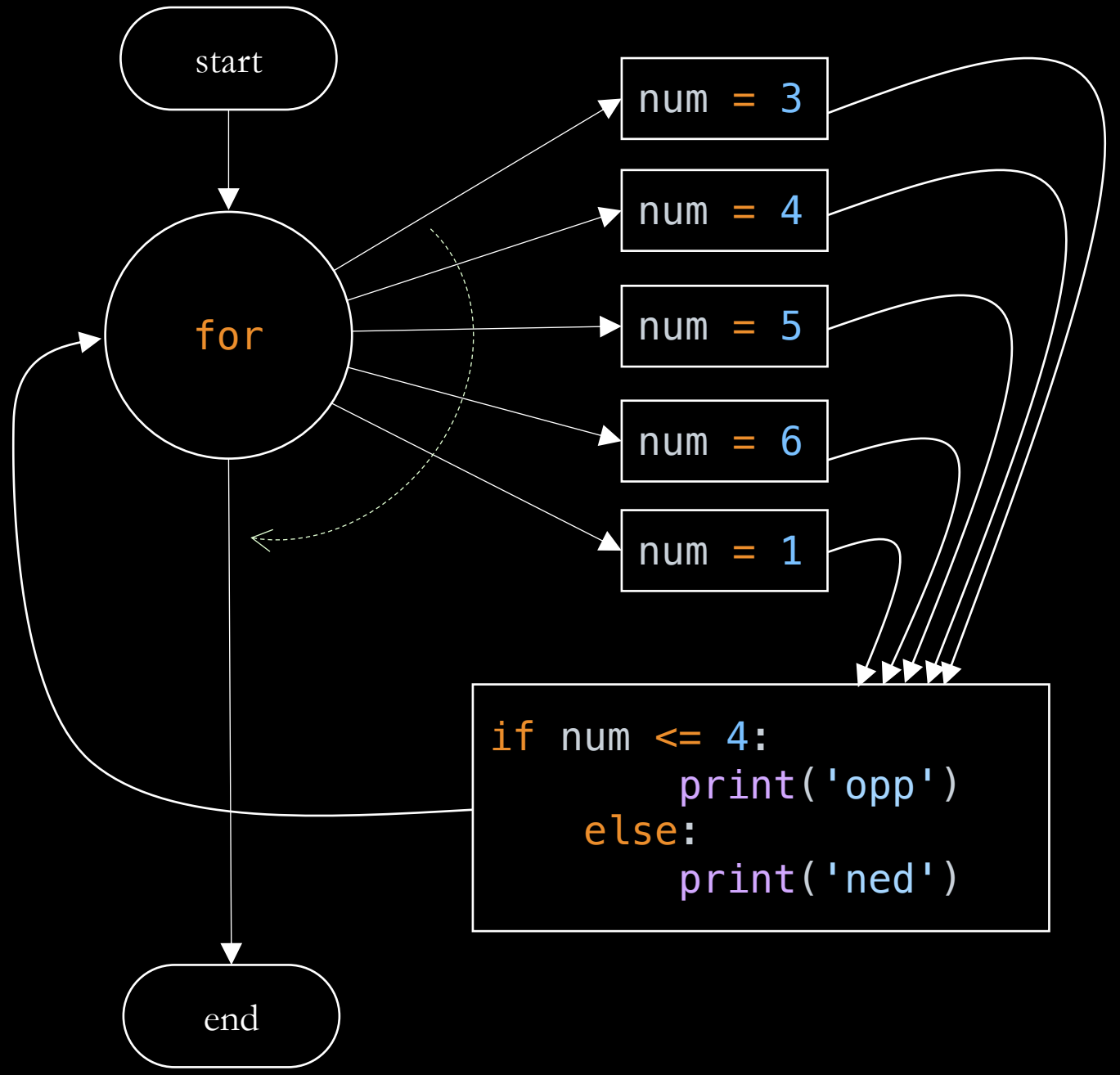
iterabel. en samling av elementer (f. eks. en liste) som skal itererers over



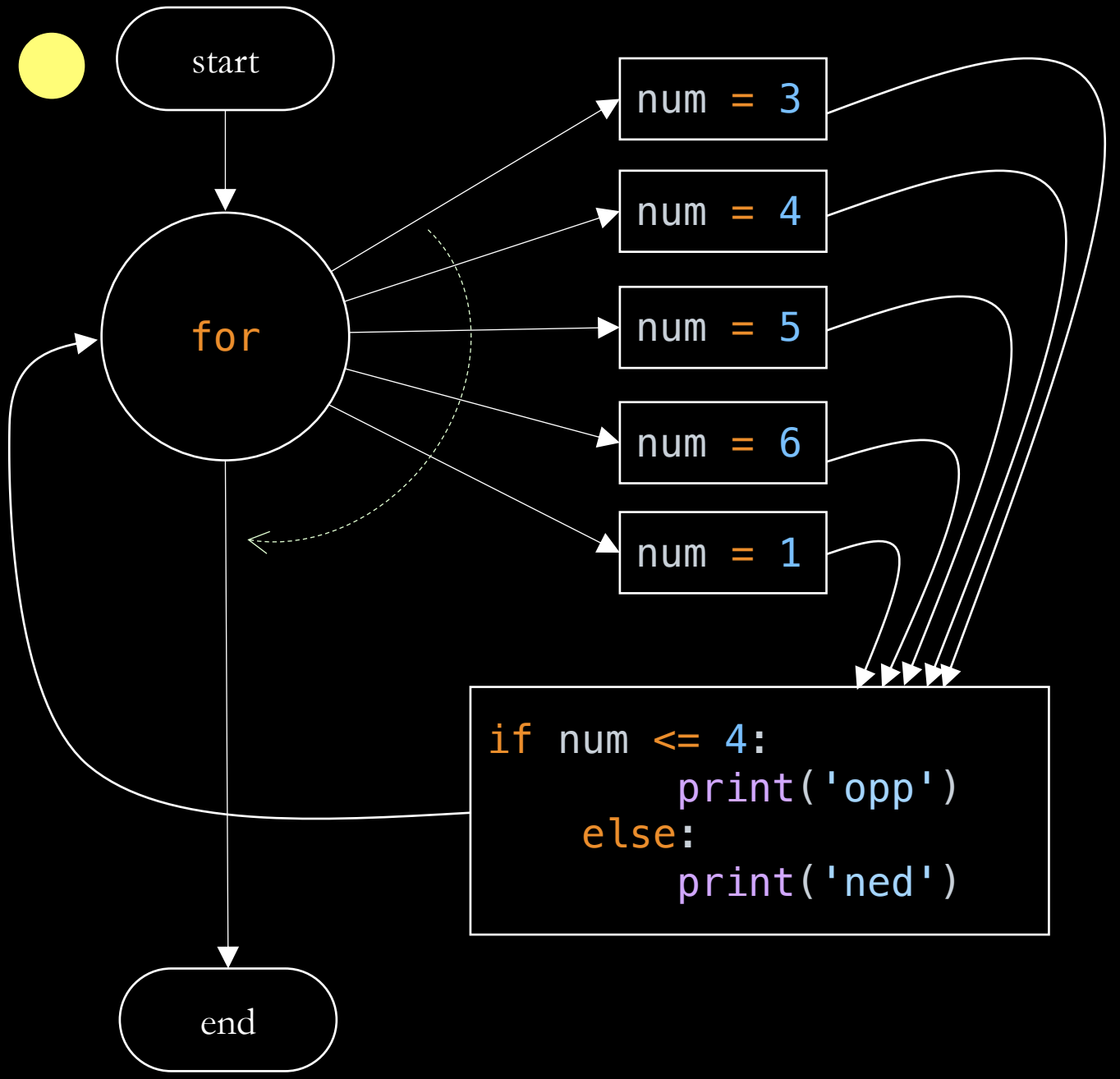
for-løkke. en setning med en løkkekropp som utføres én gang for hvert element i en iterabel.

løkkekropp. innrykket blokk av setninger som utføres én gang for hvert element i iterabelen.

```
for num in [3, 4, 5, 6, 1]:
    if num <= 4:
        print('opp')
    else:
        print('ned')
```



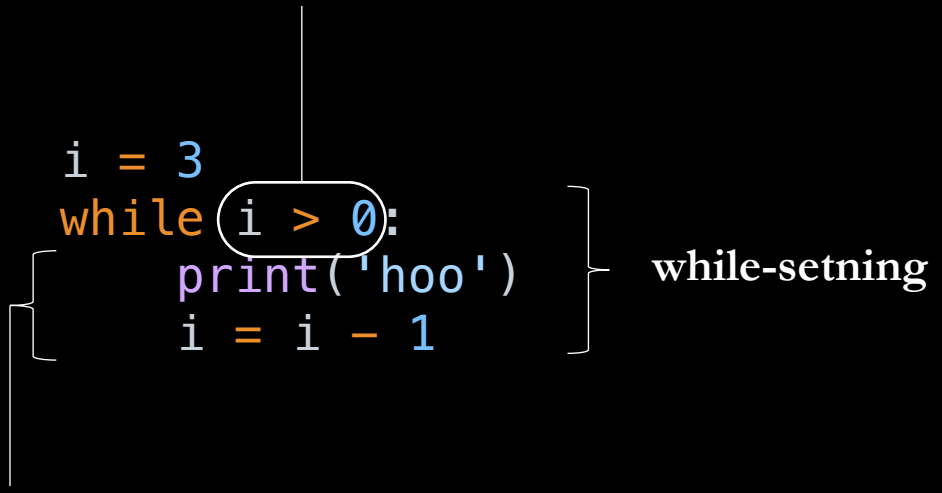
```
for num in [3, 4, 5, 6, 1]:
    if num <= 4:
        print('opp')
    else:
        print('ned')
```



hoo
hoo
hoo

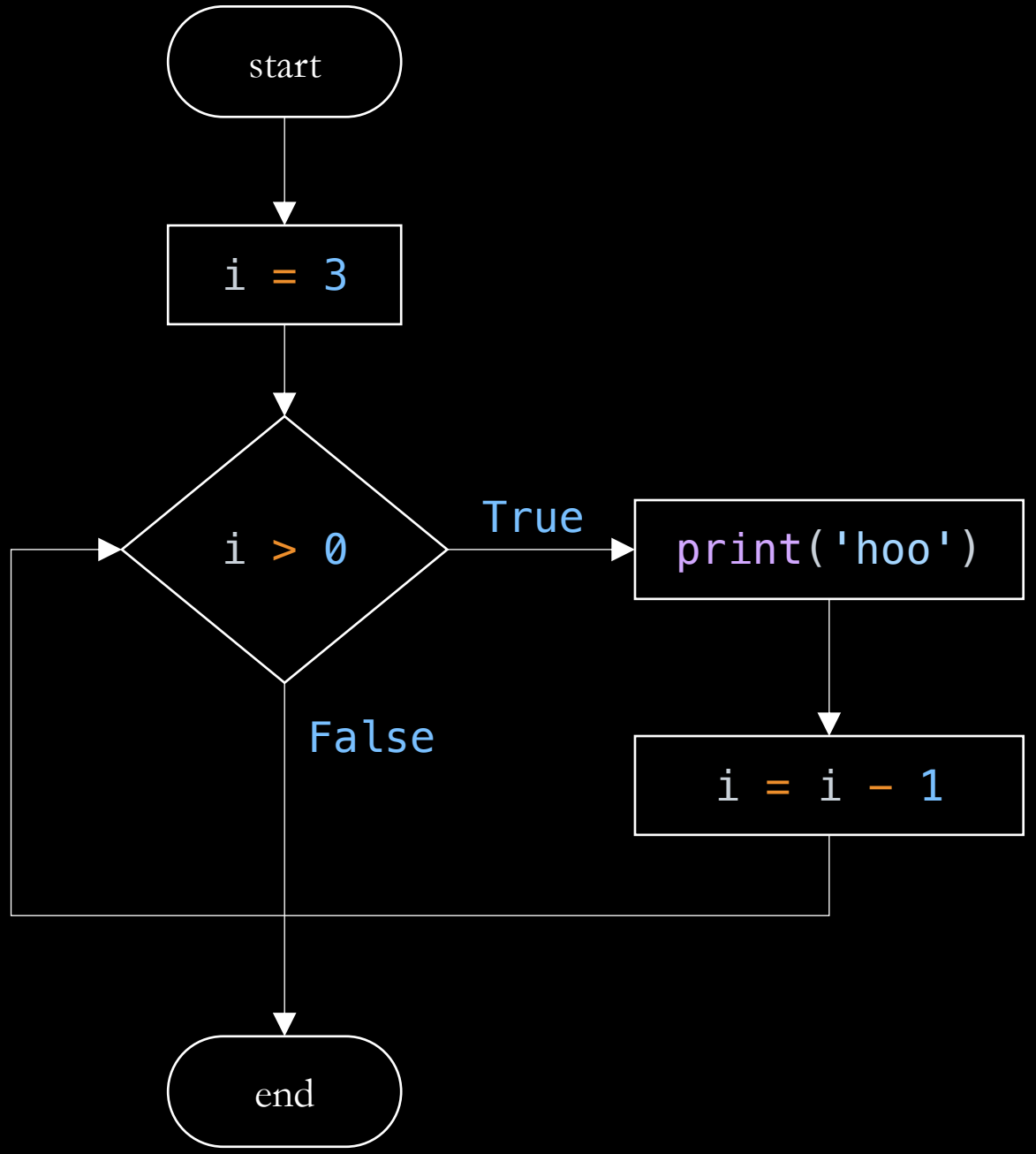
```
print('hoo')
print('hoo')
print('hoo')
```

betingelse. et uttrykk som evaluerer til en boolsk verdi (True eller False)

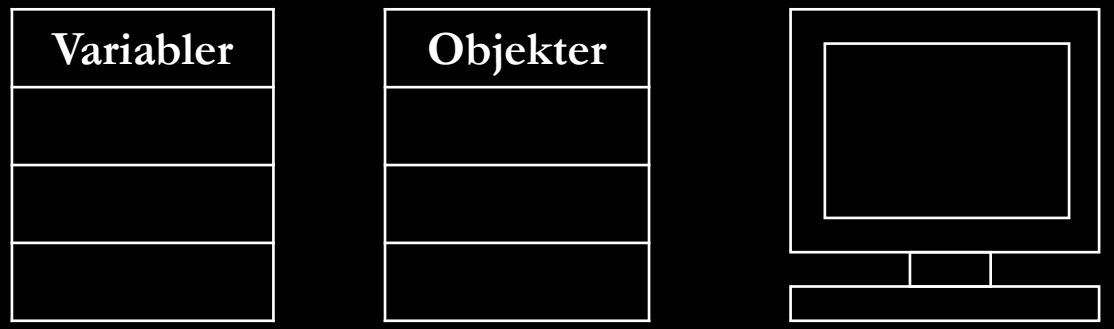


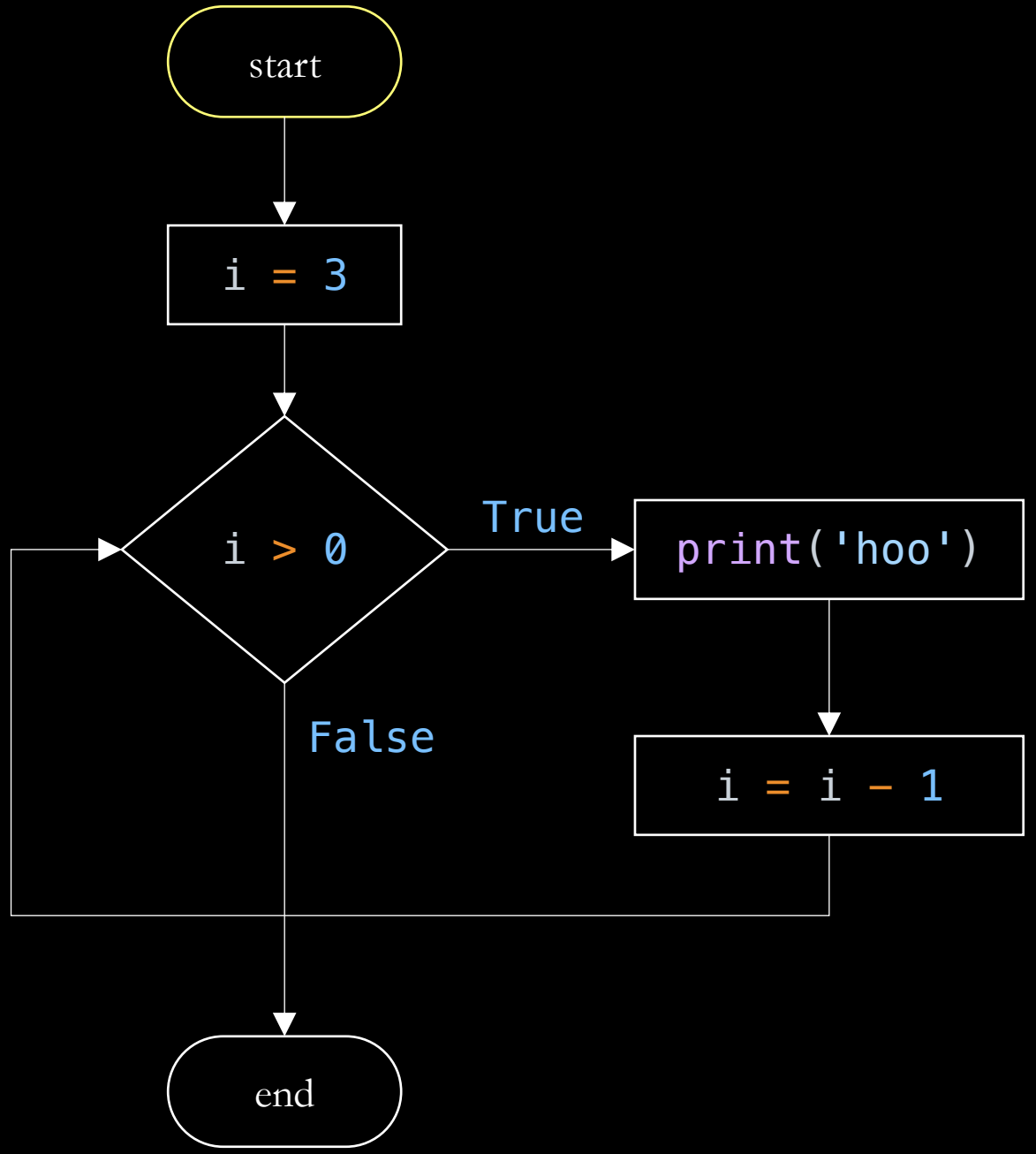
løkkekropp. innrykket blokk av setninger som utføres så lenge betingelsen er True.

```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```

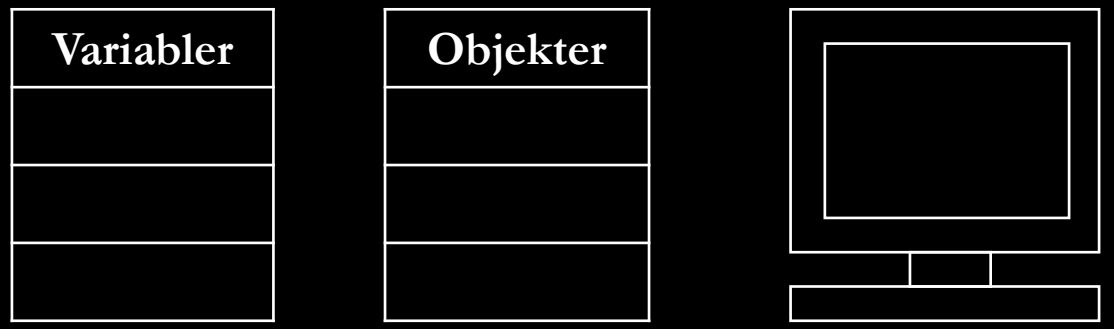


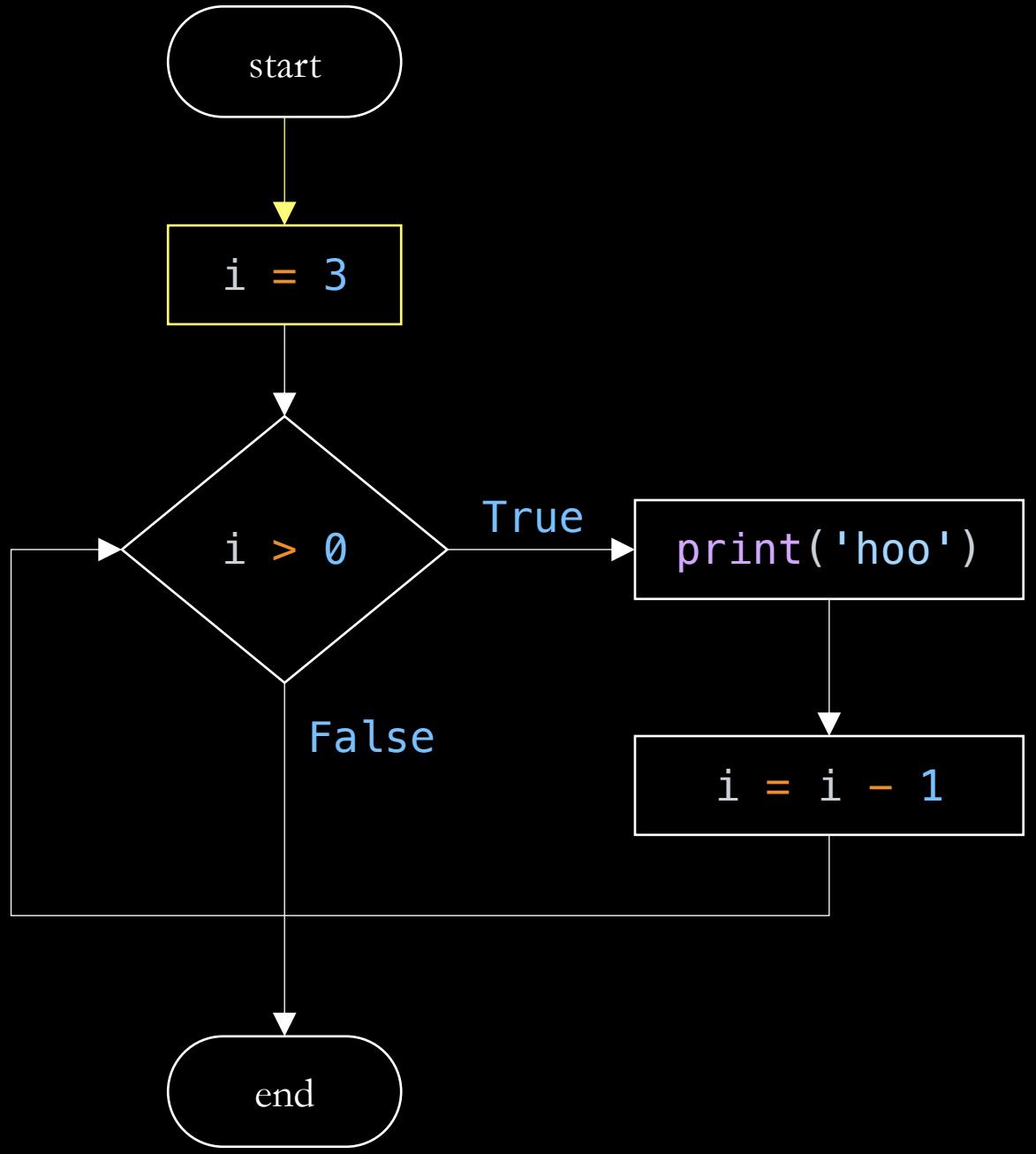
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```



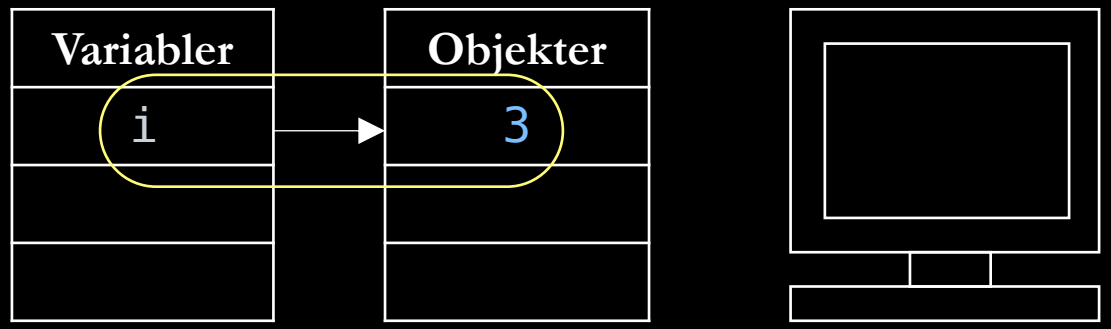


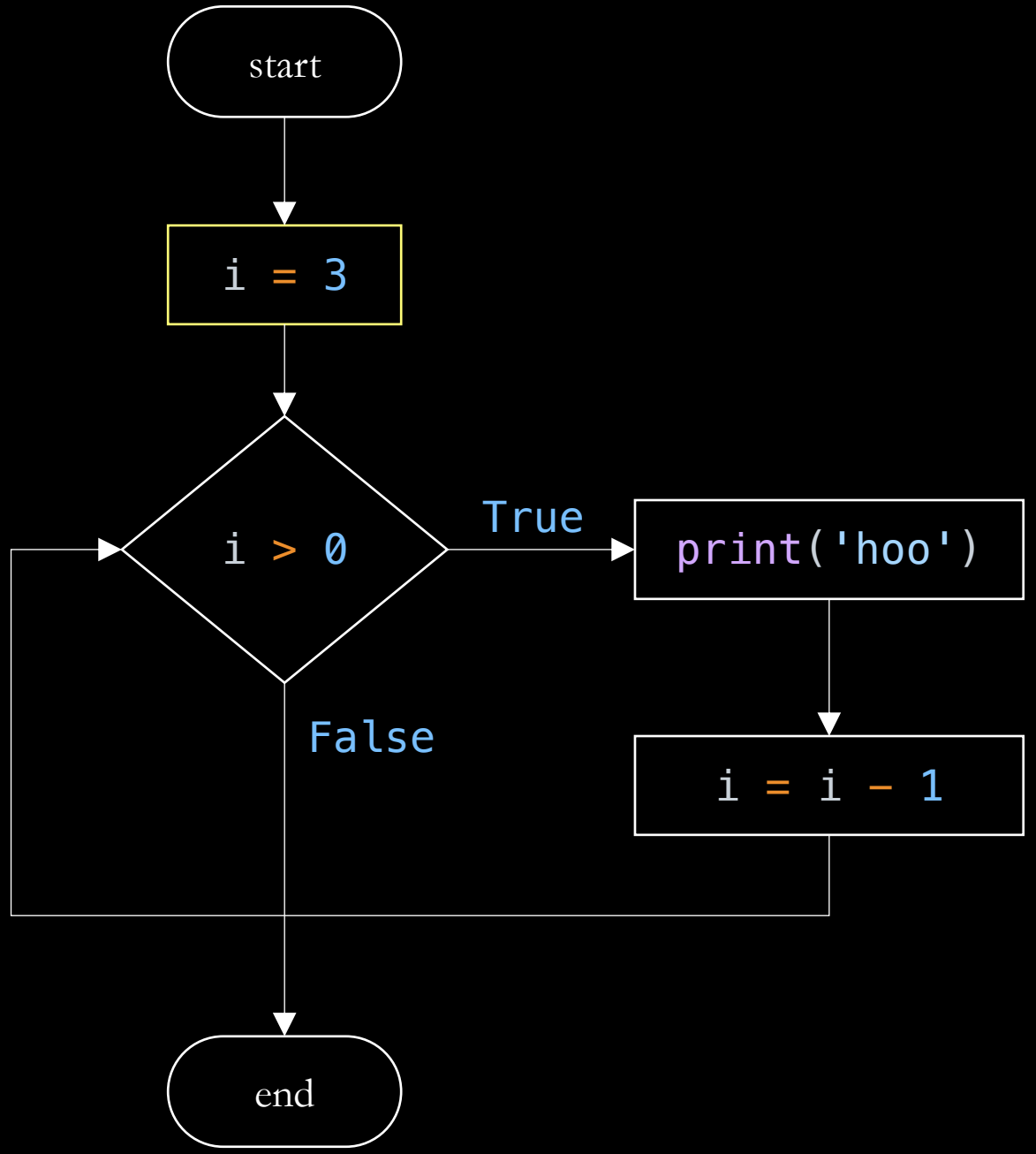
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```



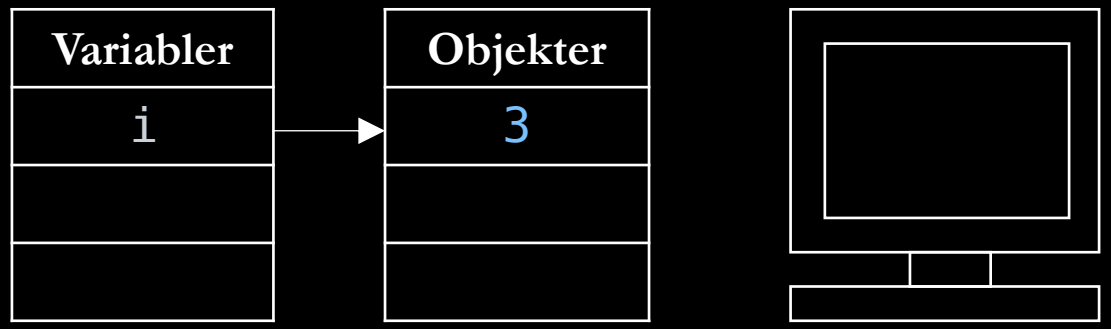


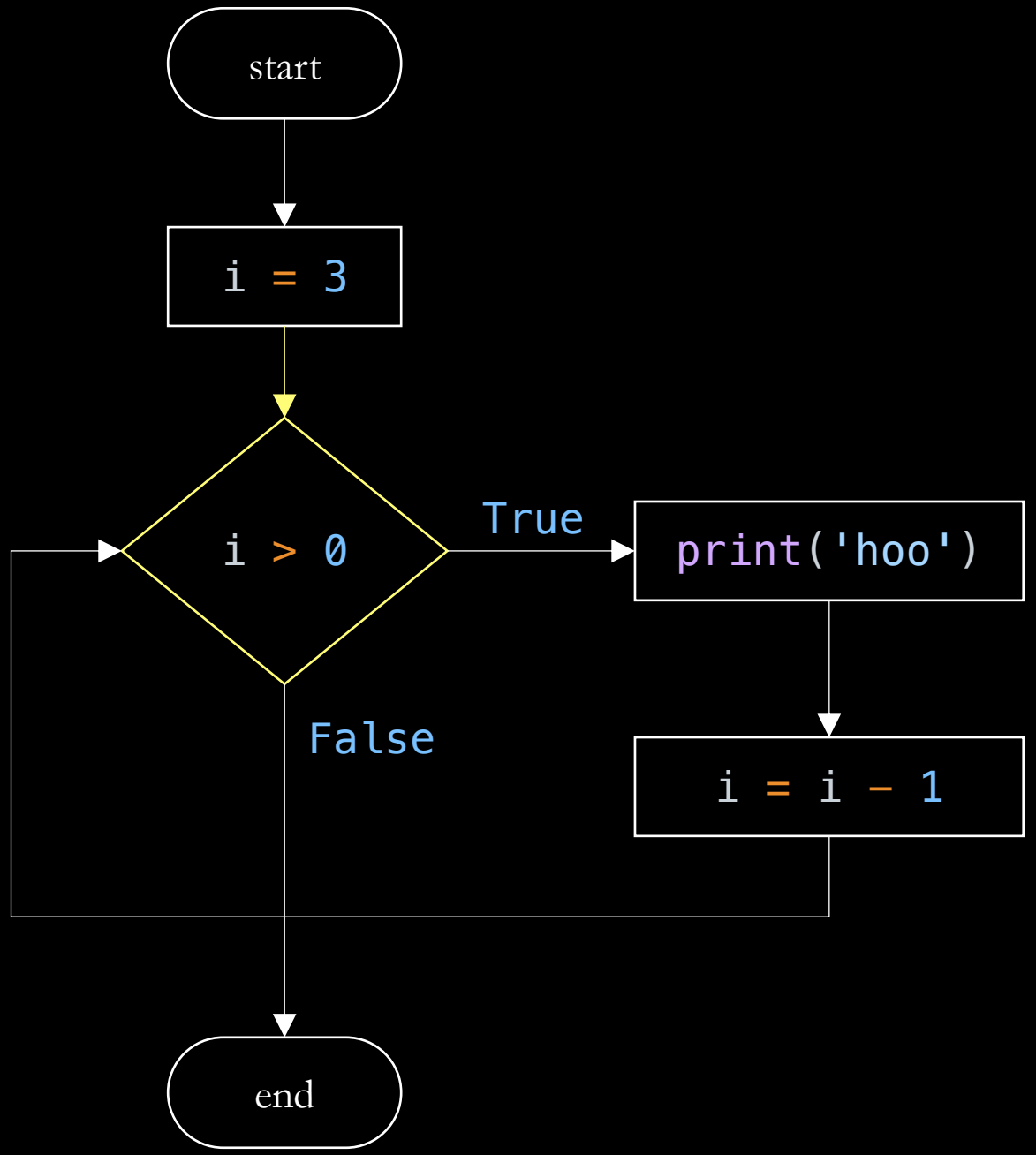
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```

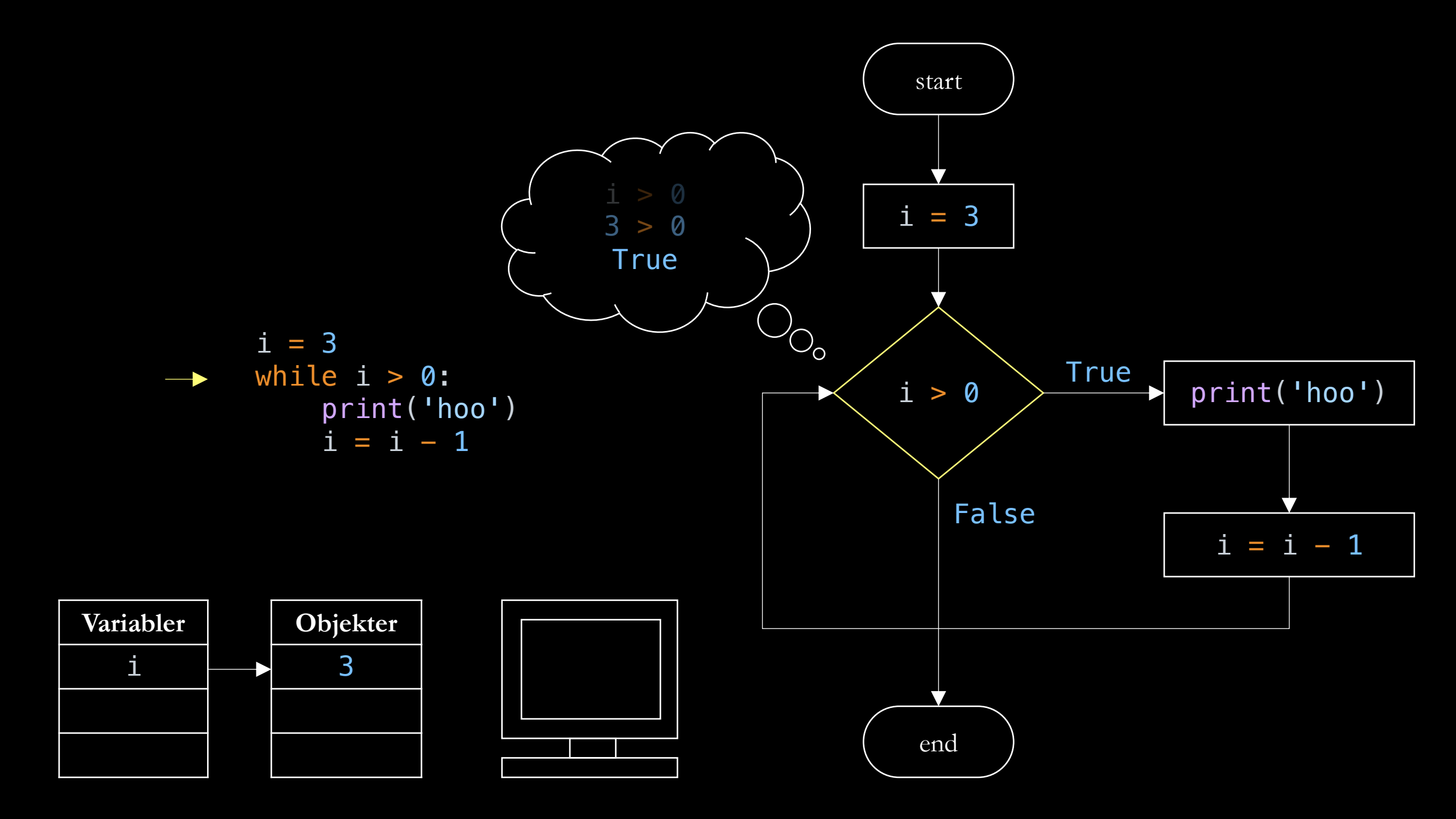


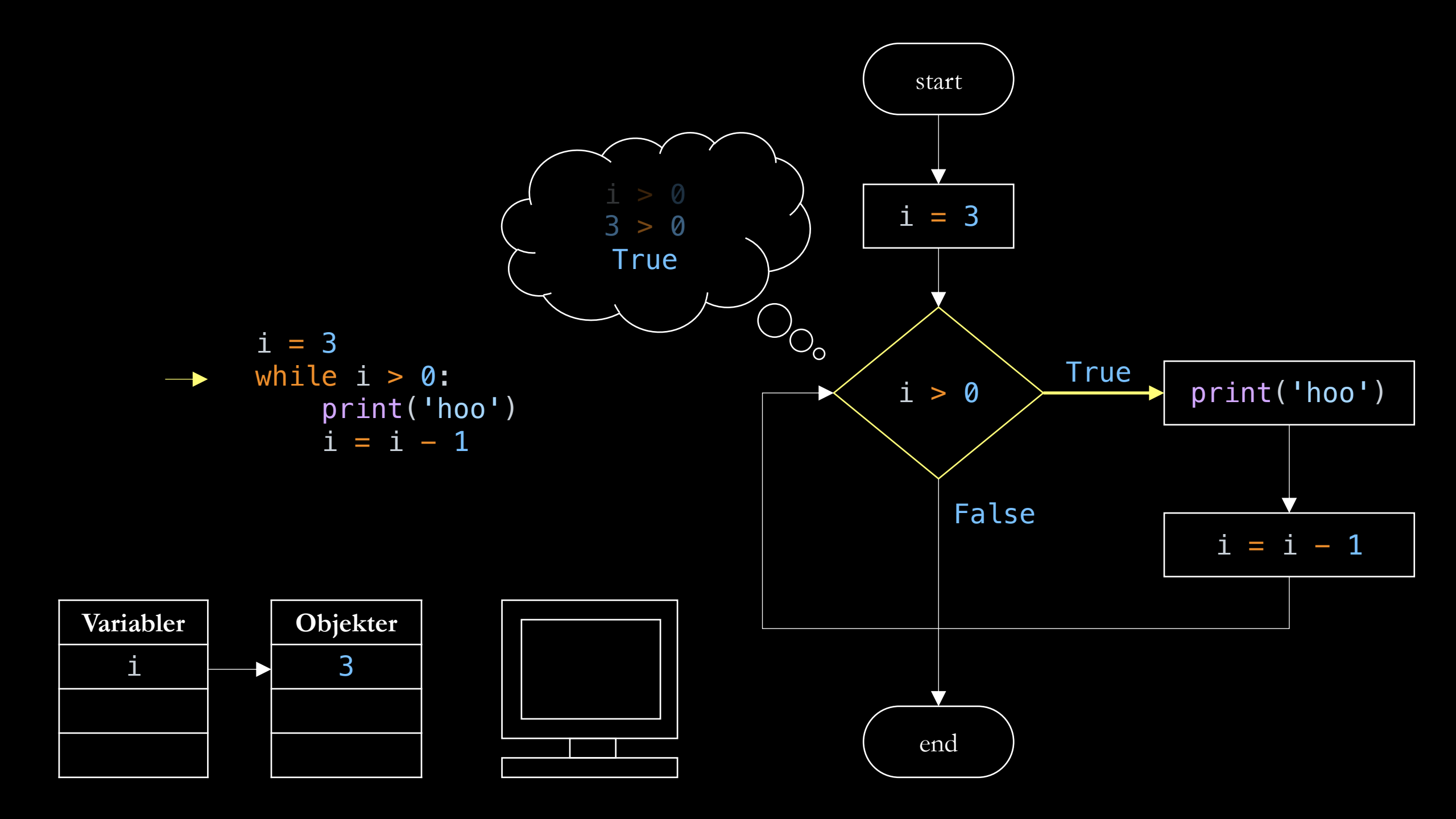


```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```

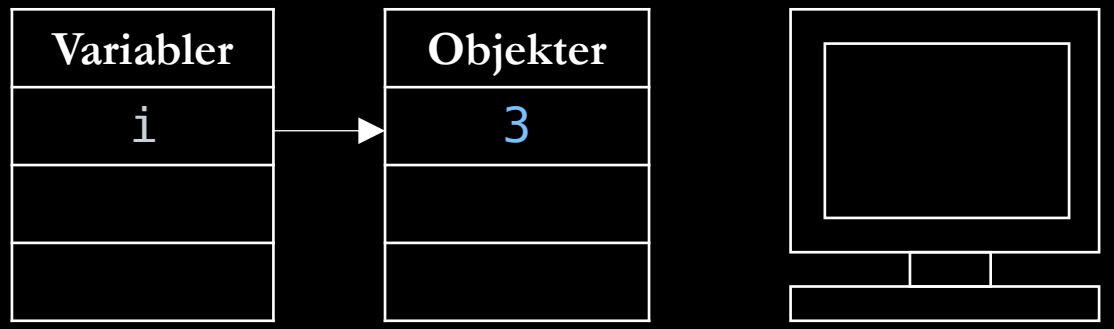


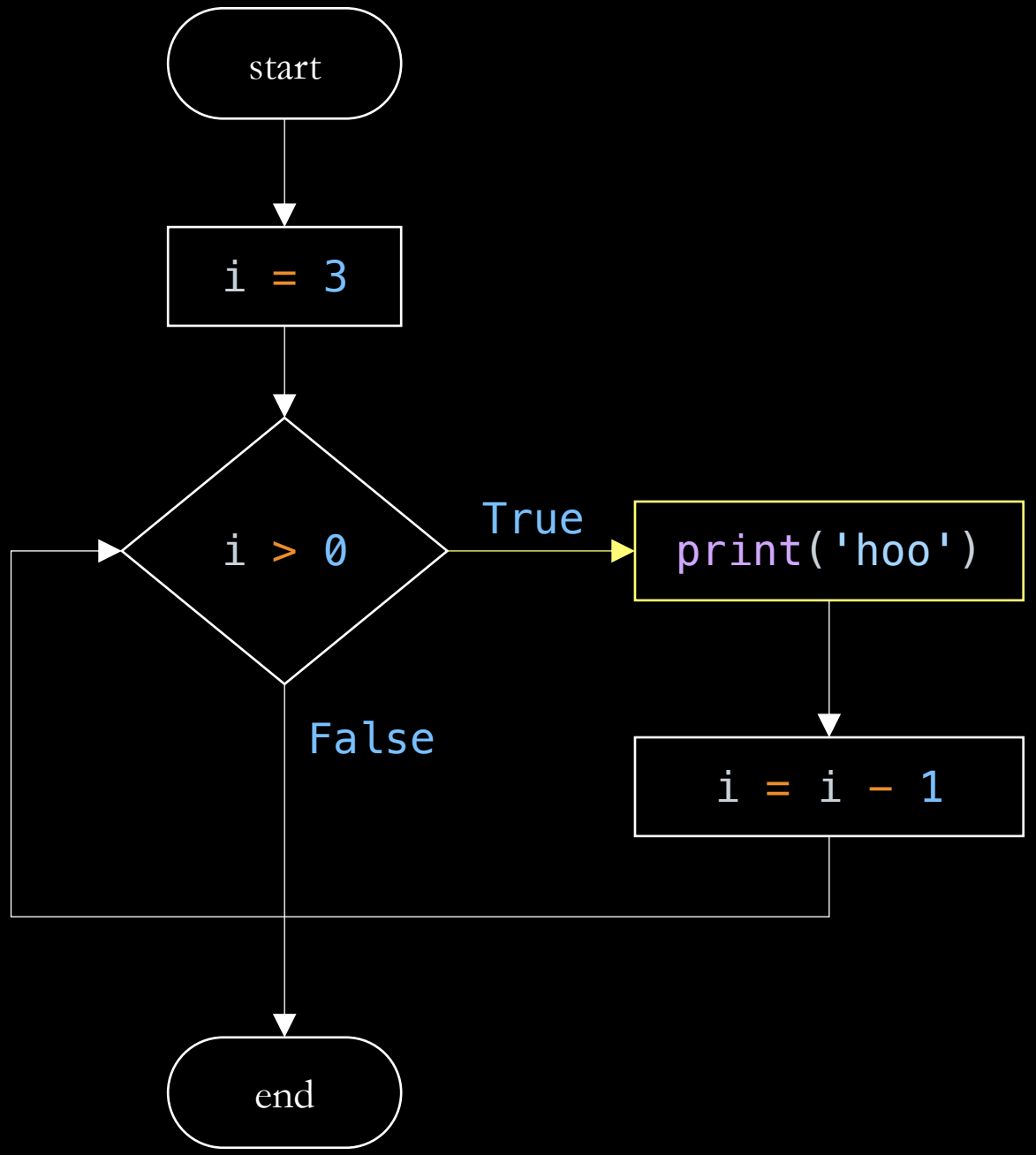



i = 3
while i > 0:
print('hoo')
i = i - 1
i > 0
3 > 0
True
start
i = 3
i > 0
True
print('hoo')
i = i - 1
False
end
Variabler
i
Objekter
3

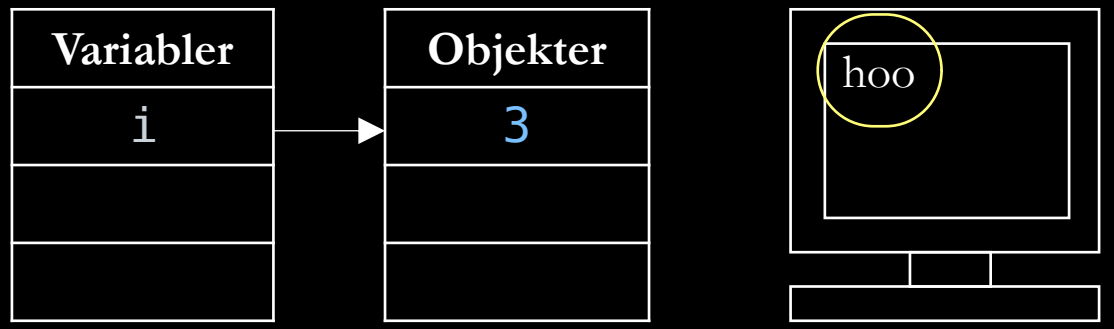

start
i = 3
i > 0
3 > 0
True
i = 3
while i > 0:
print('hoo')
i = i - 1
i > 0
True
print('hoo')
False
i = i - 1
end
Variabler
i
Objekter
3

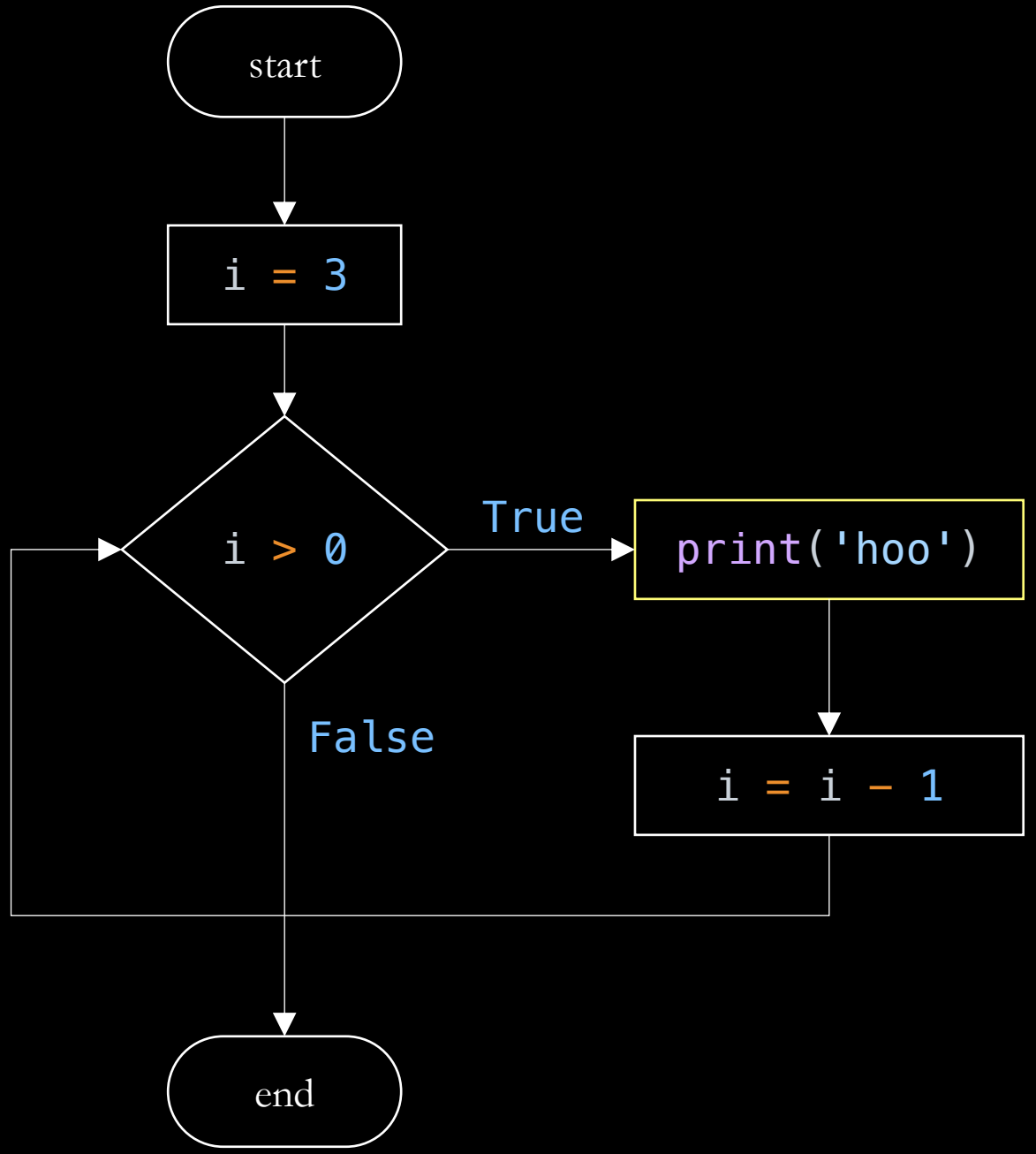
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```



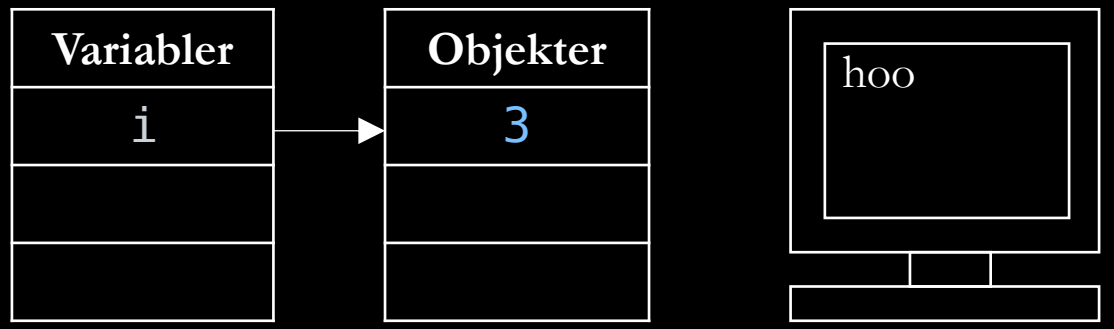


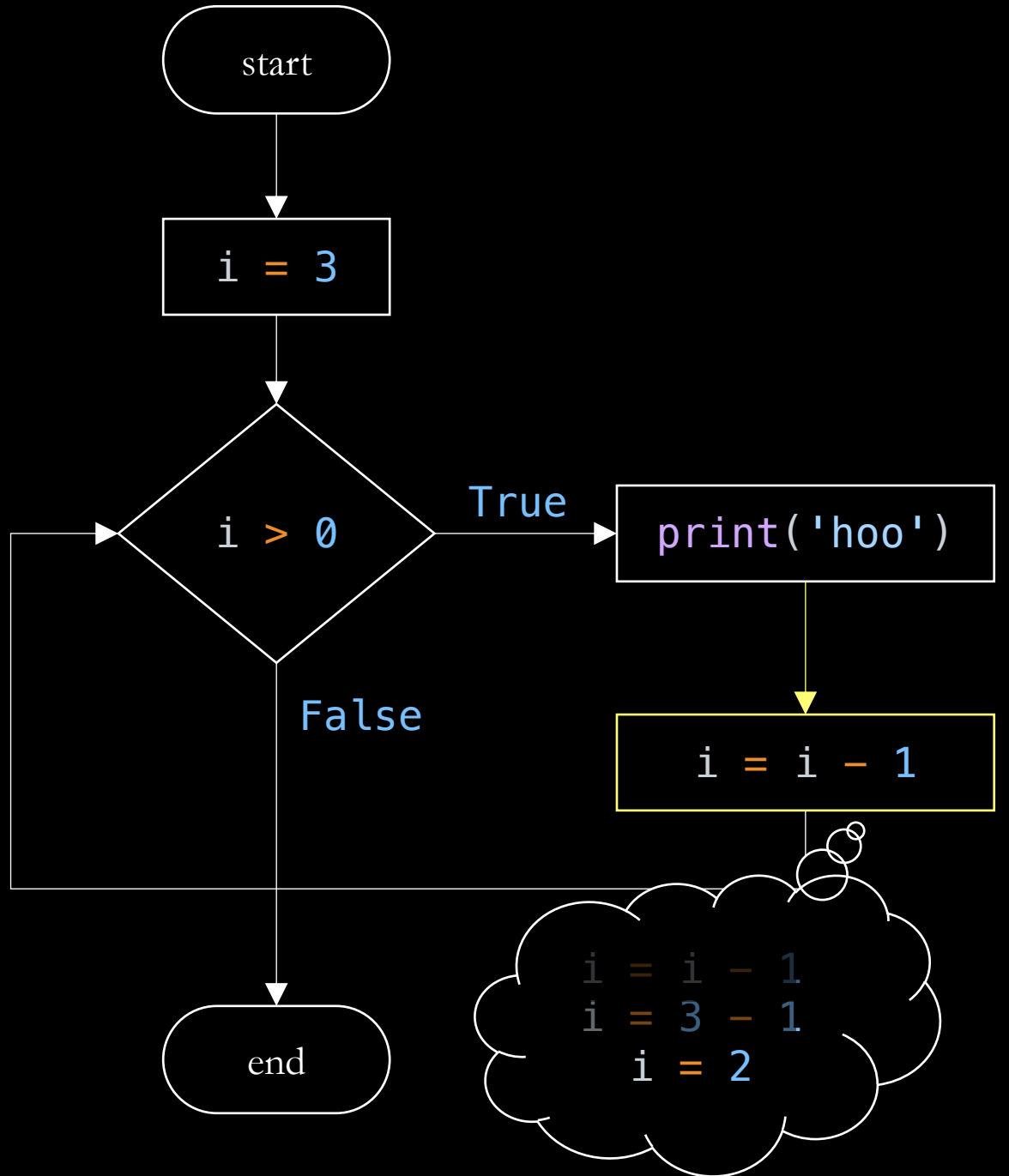
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```



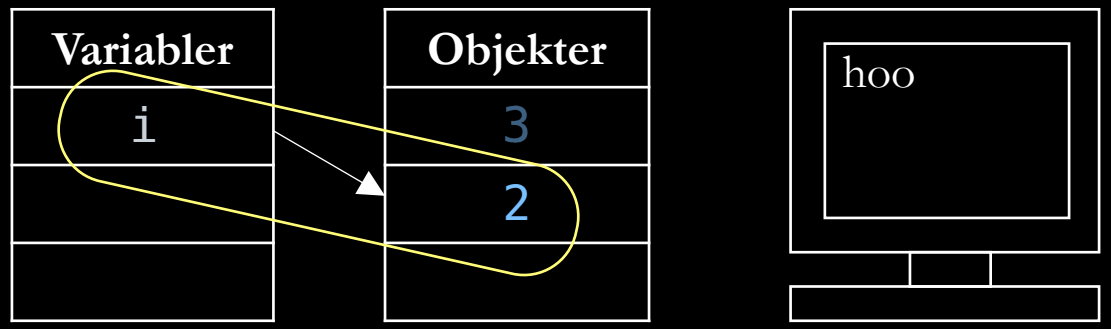


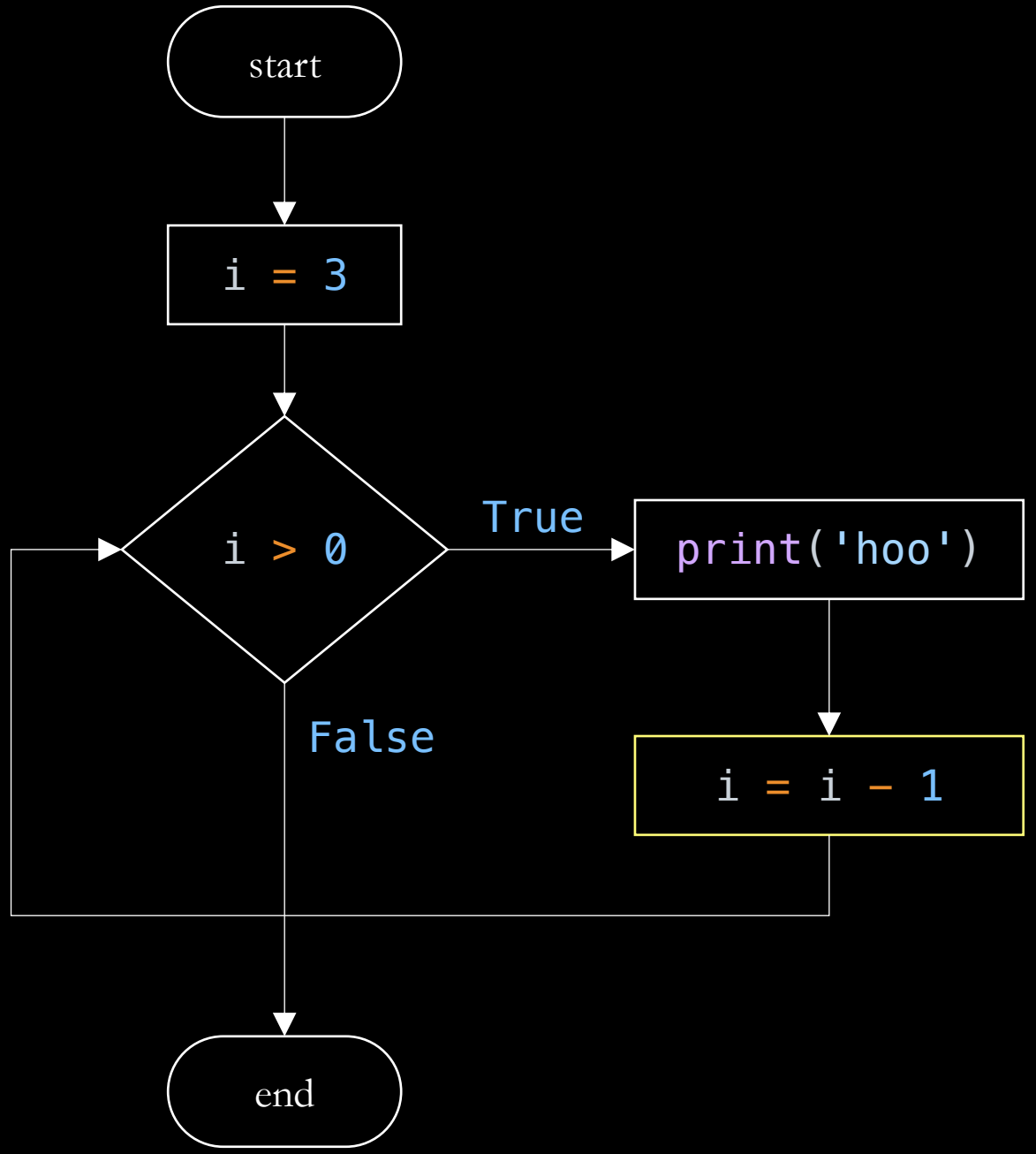
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```



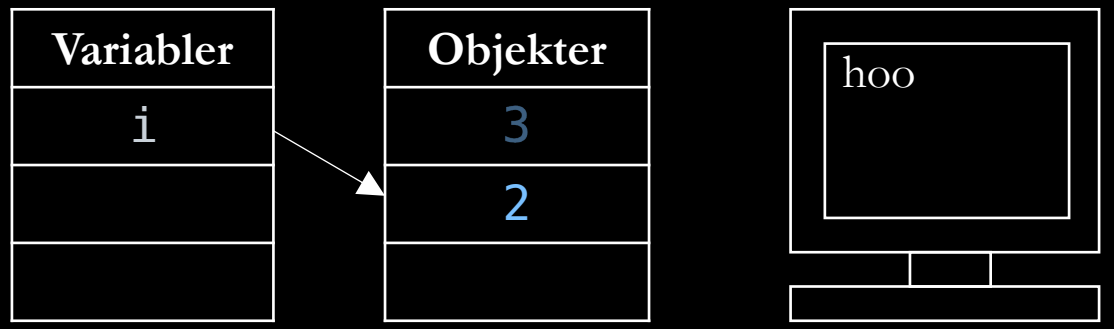


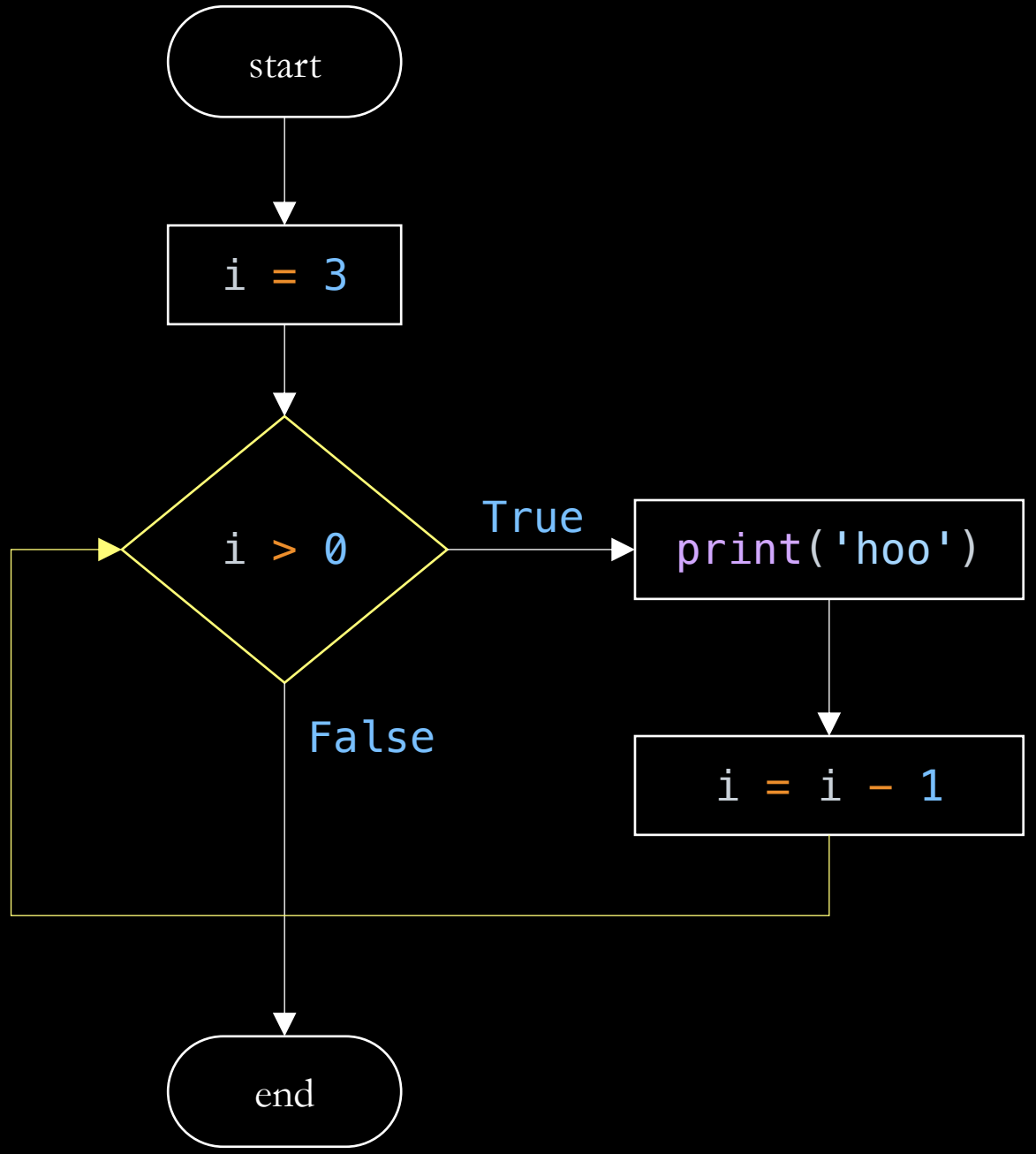
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```

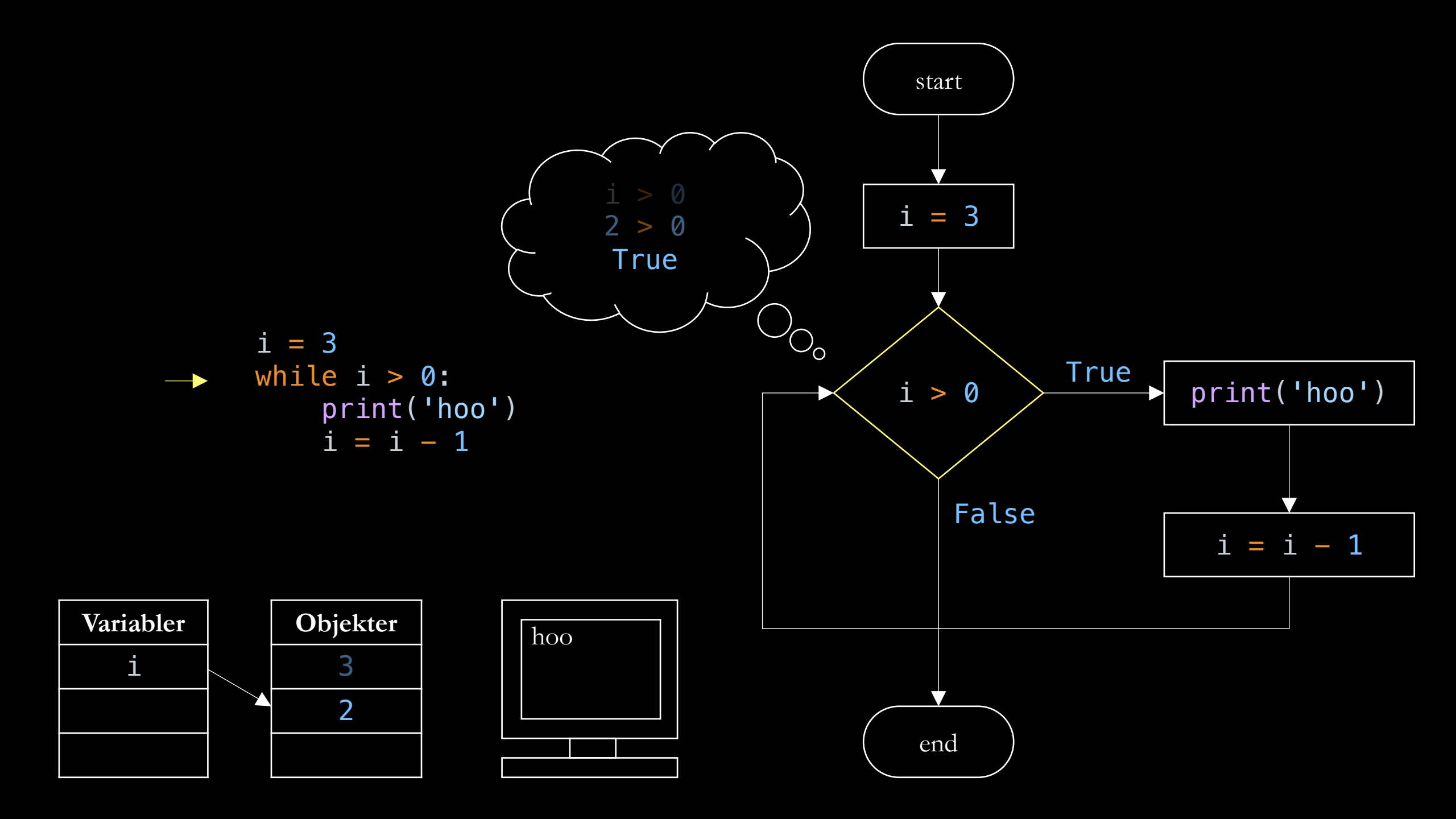


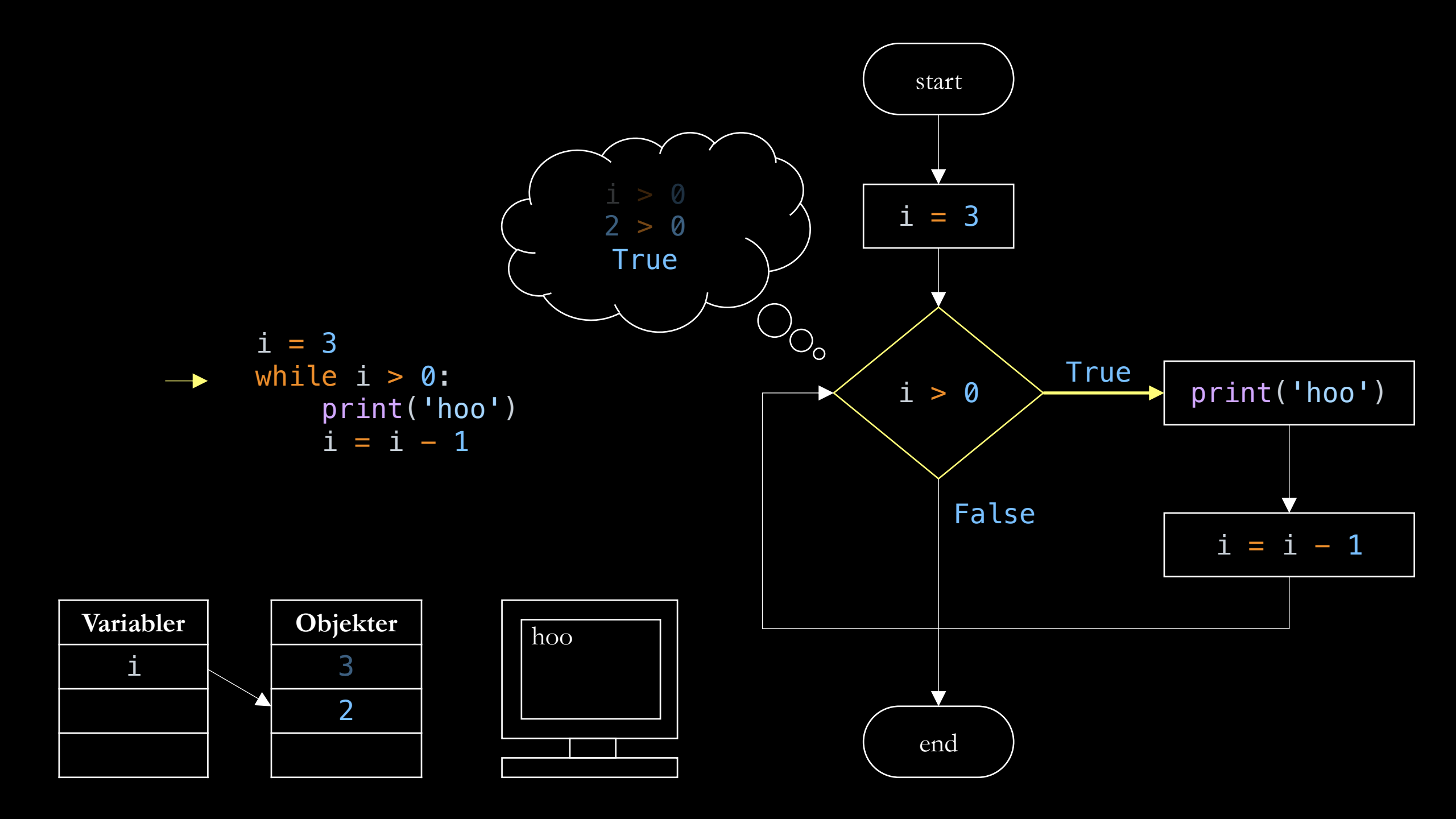


```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```

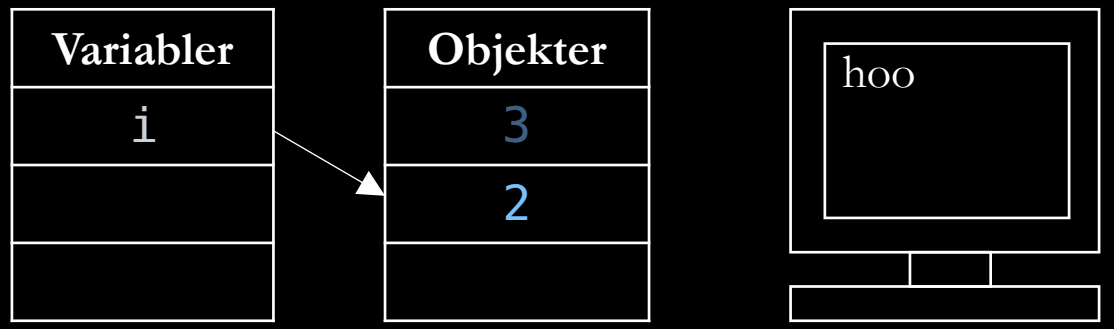


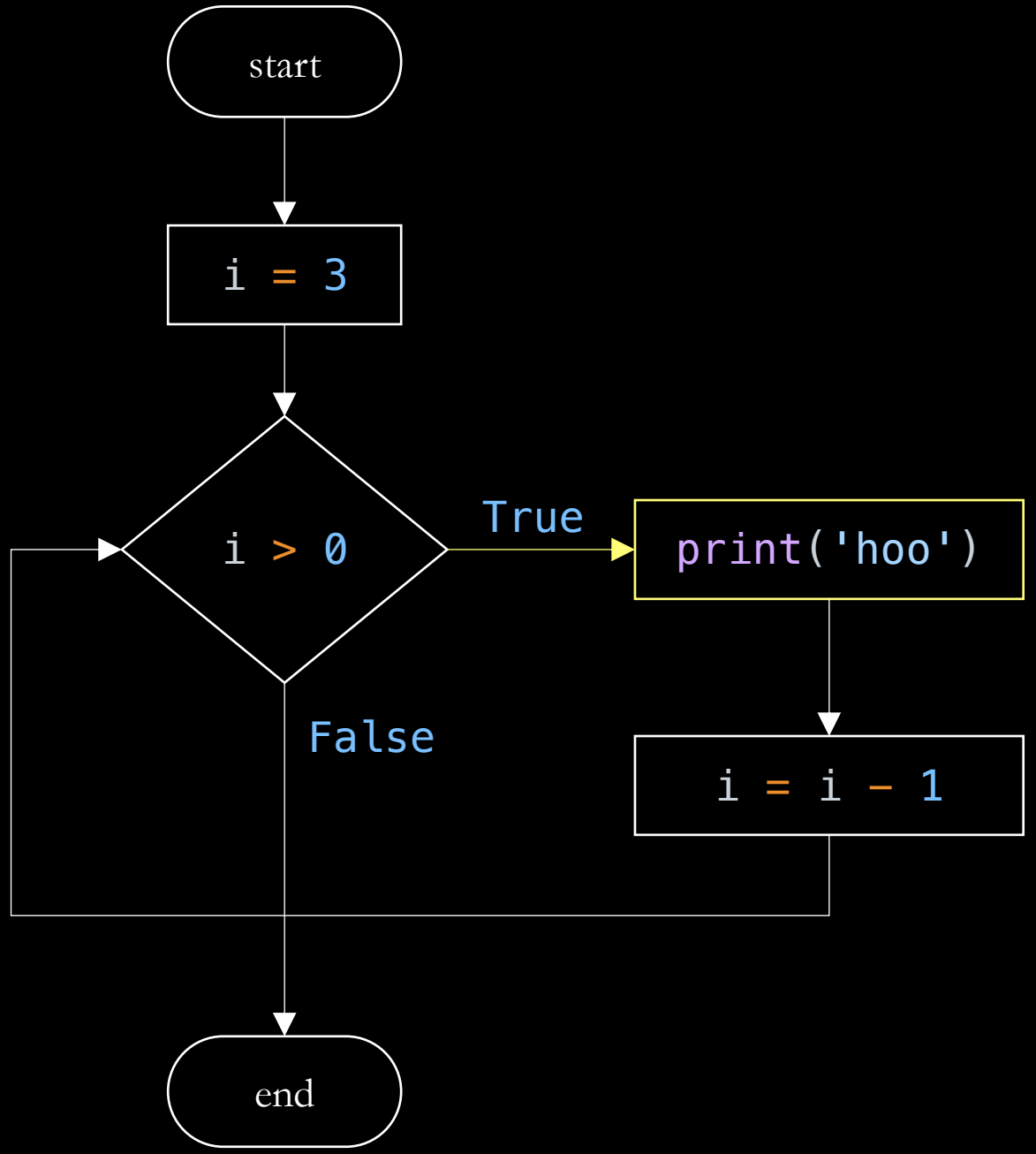



start
i = 3
i > 0
True
False
print('hoo')
i = i - 1
end
i = 3
while i > 0:
print('hoo')
i = i - 1
i > 0
2 > 0
True
Variabler
i
Objekter
3
2
hoo

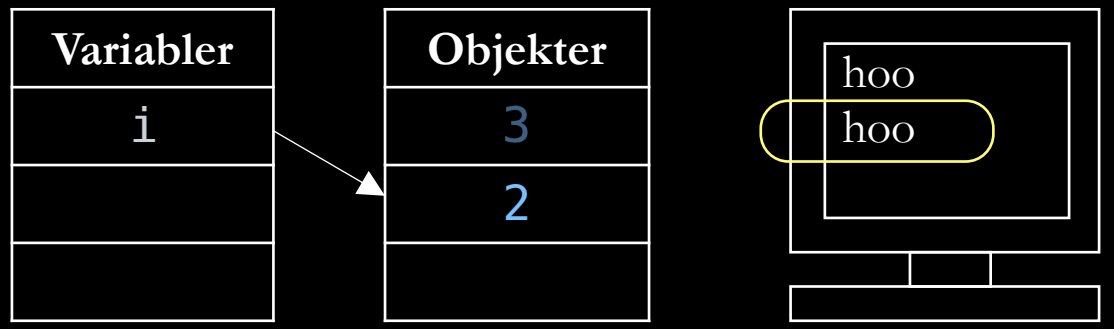

start
i = 3
i > 0
True
False
print('hoo')
i = i - 1
end
i = 3
while i > 0:
print('hoo')
i = i - 1
i > 0
2 > 0
True
Variabler
i
Objekter
3
2
hoo

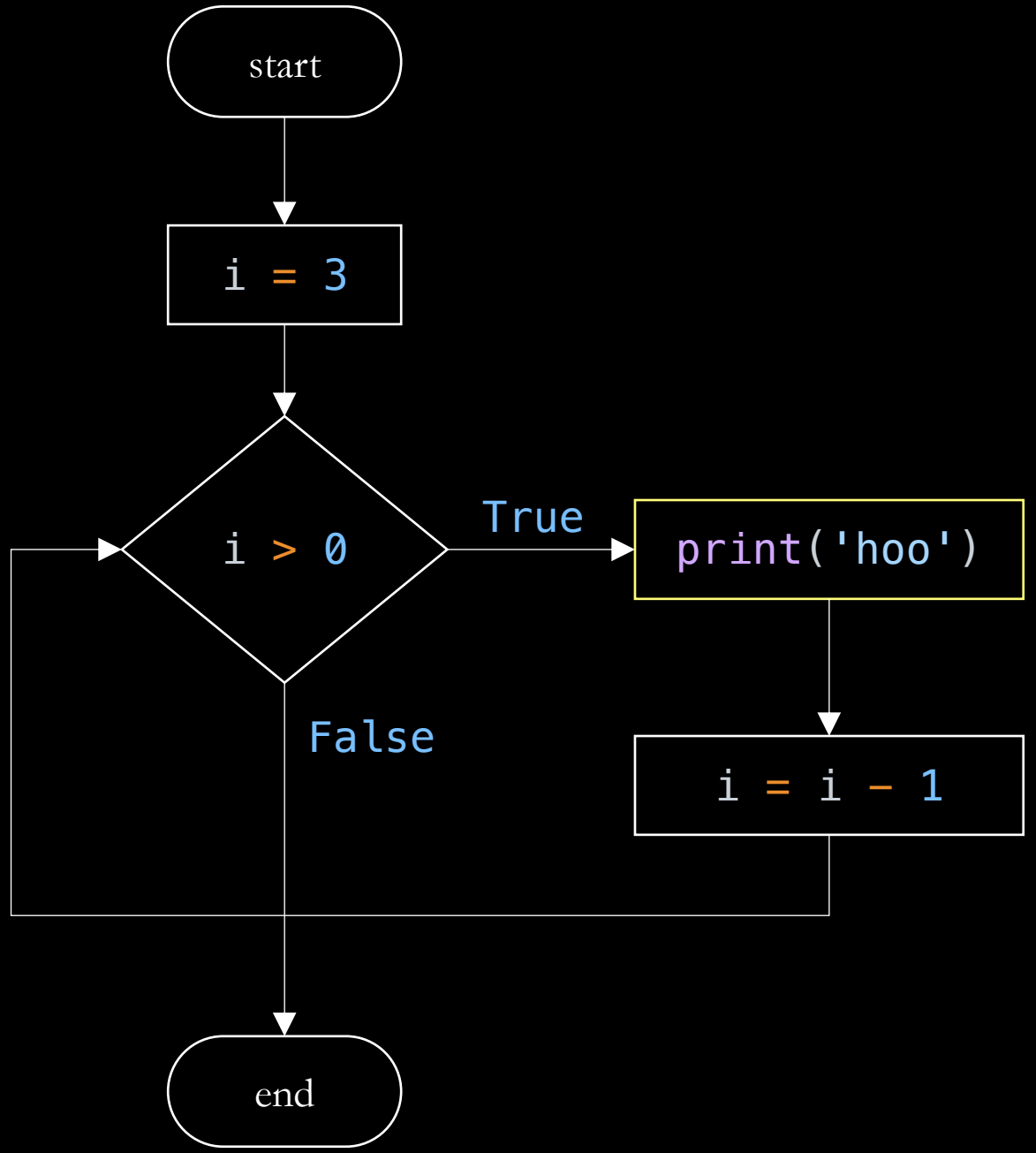
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```



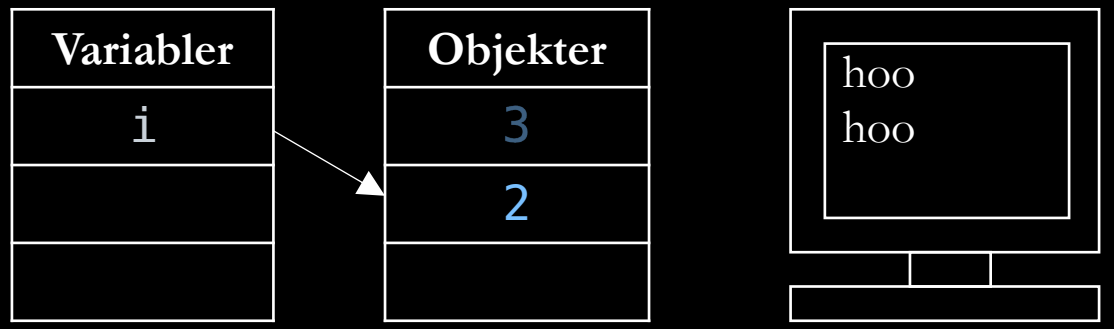


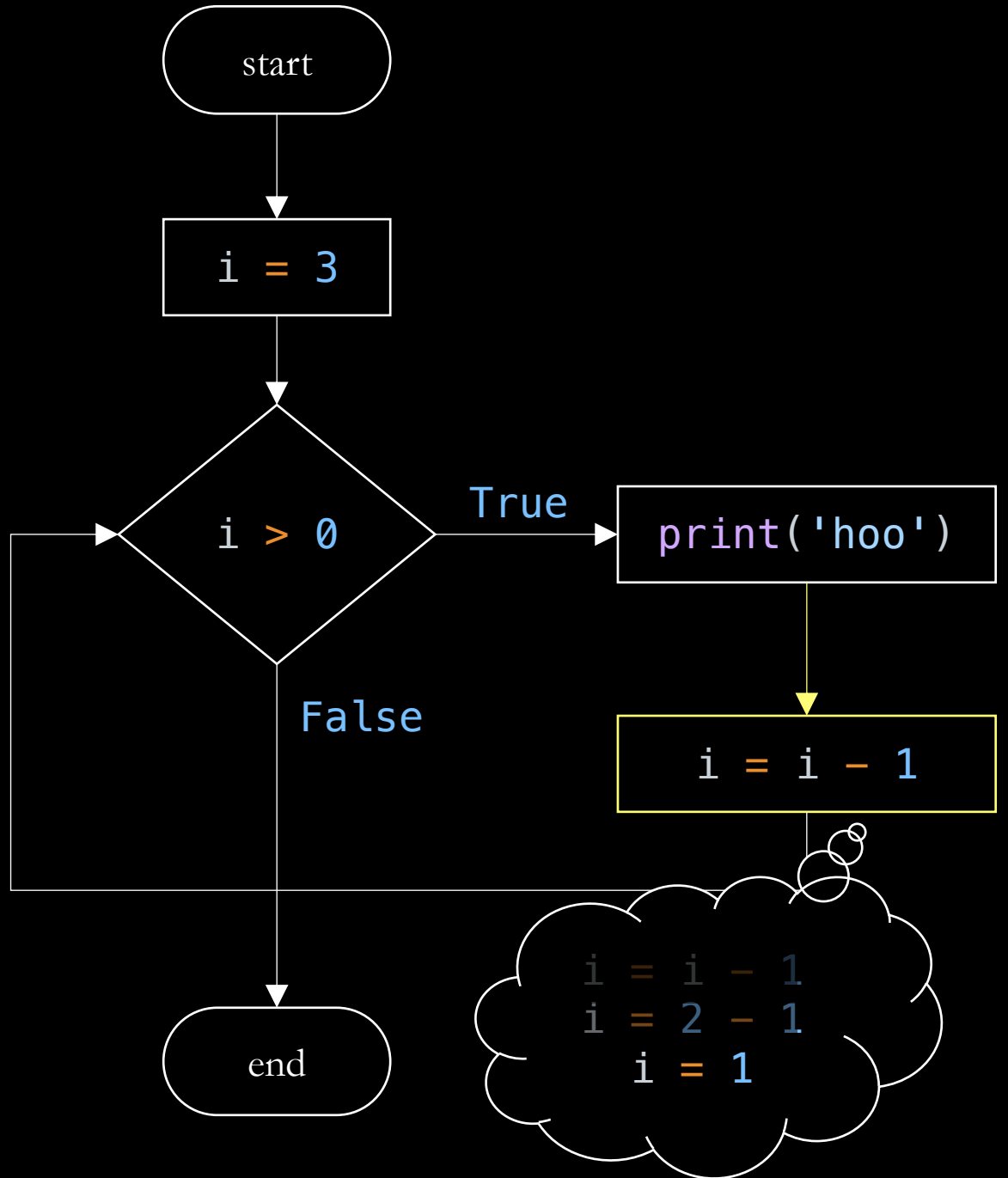
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```



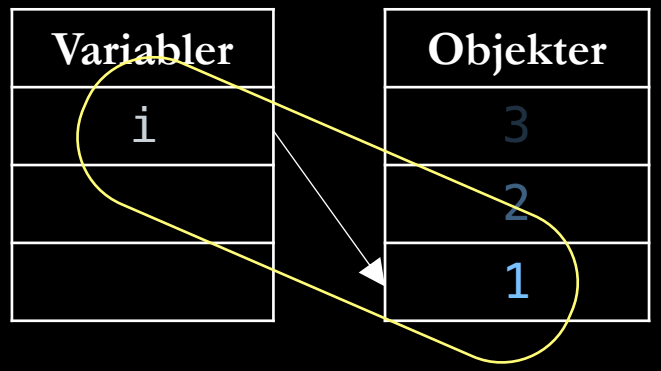


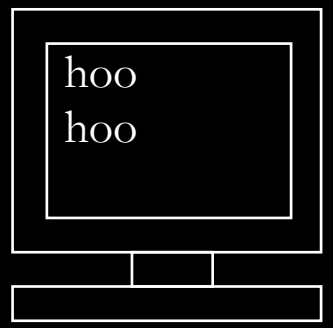
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```

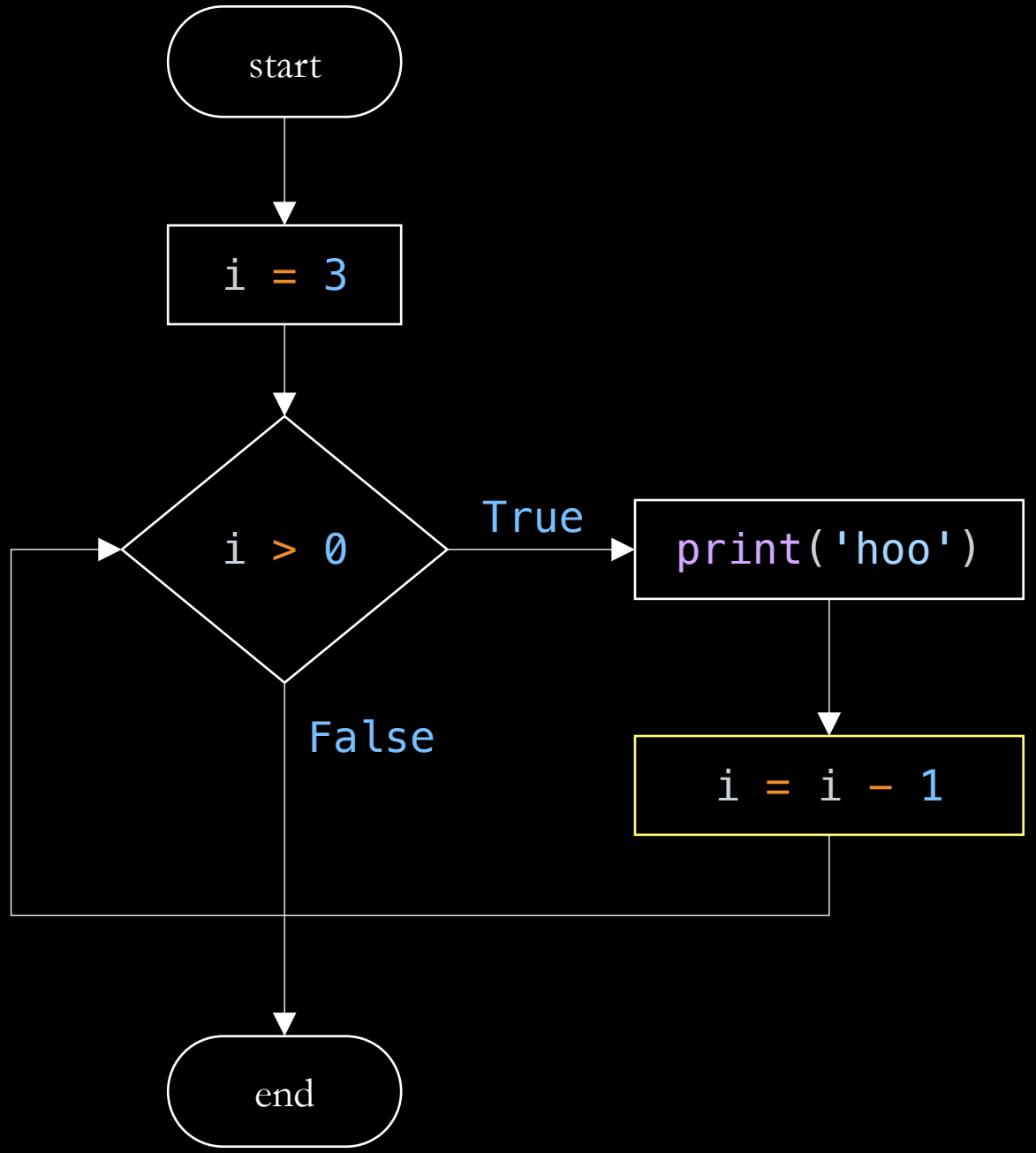




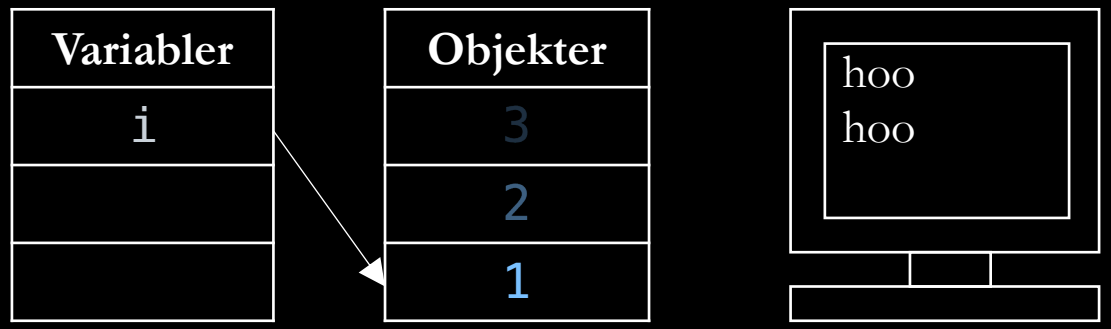
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```

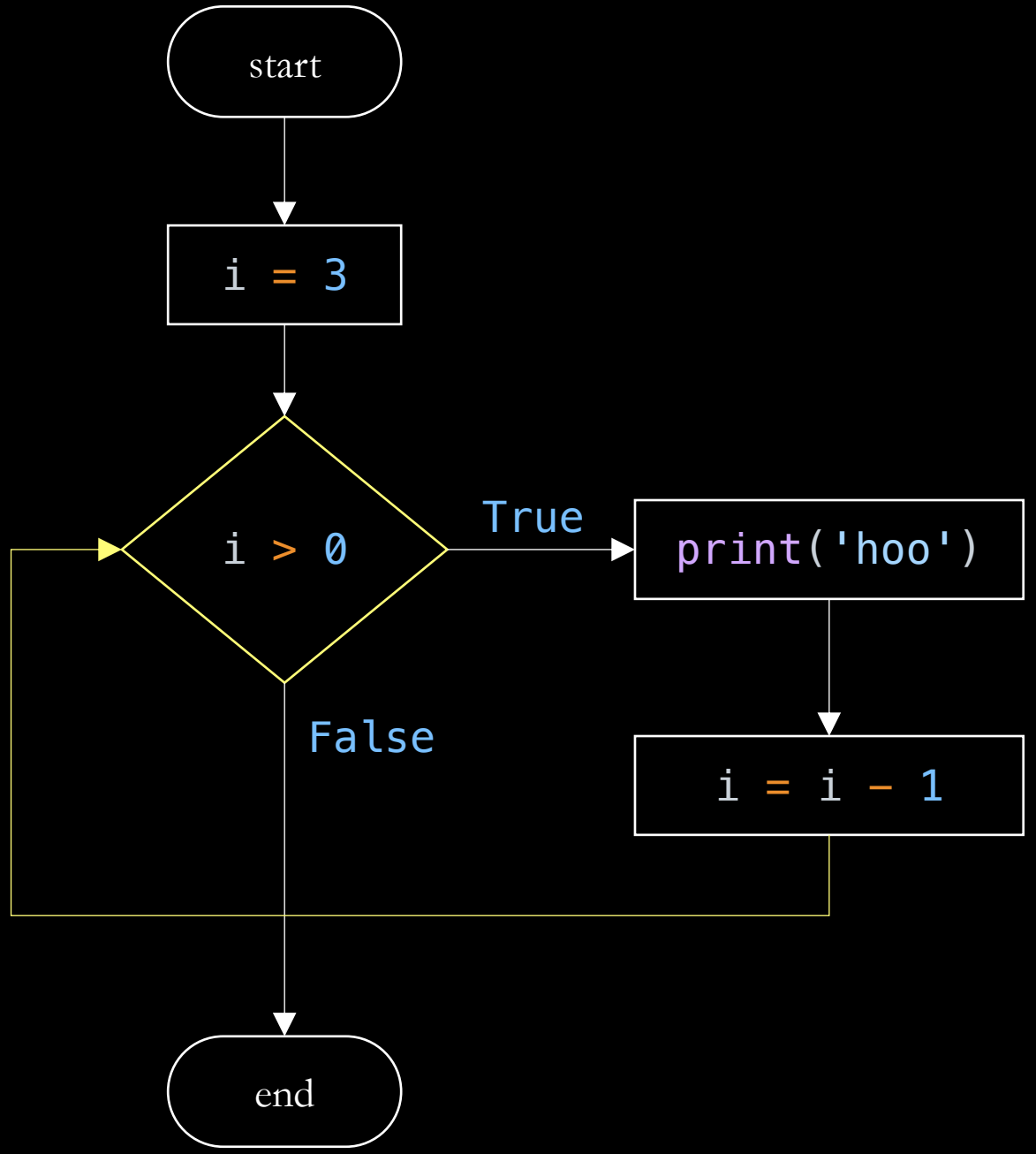


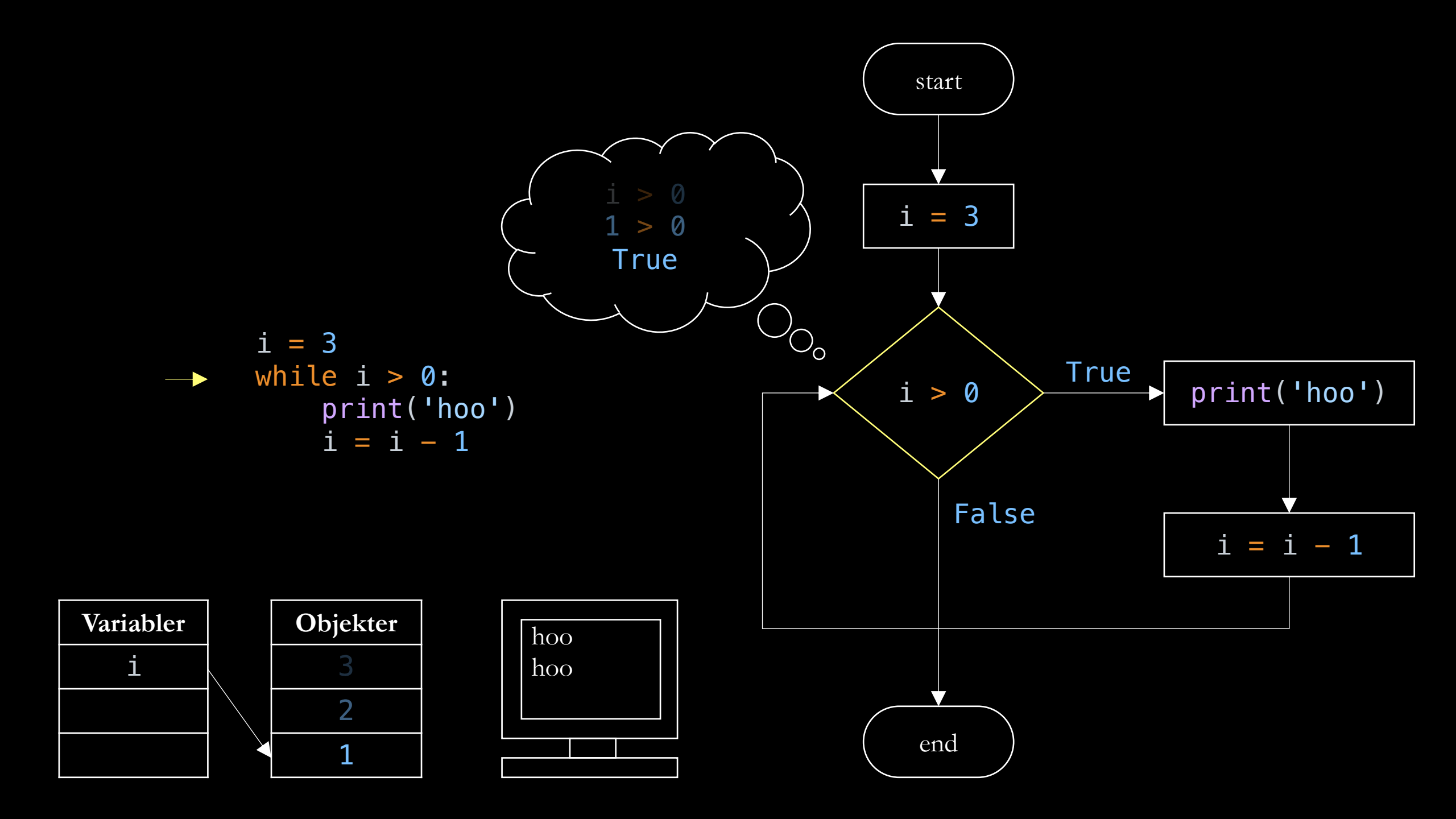


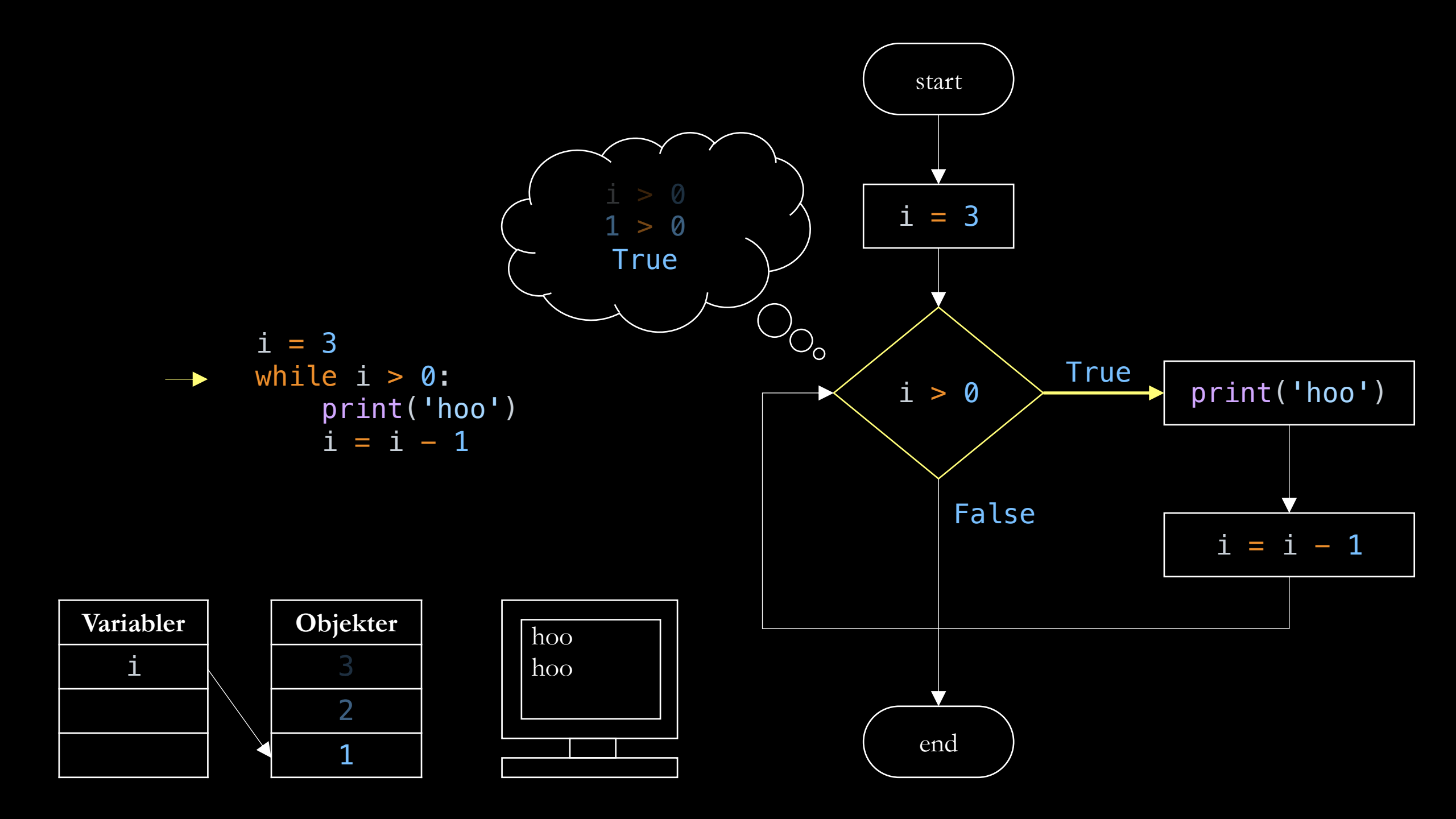


```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```

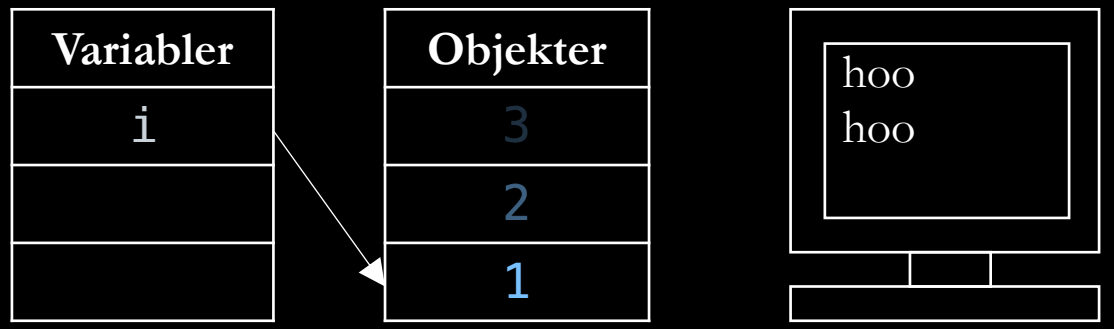


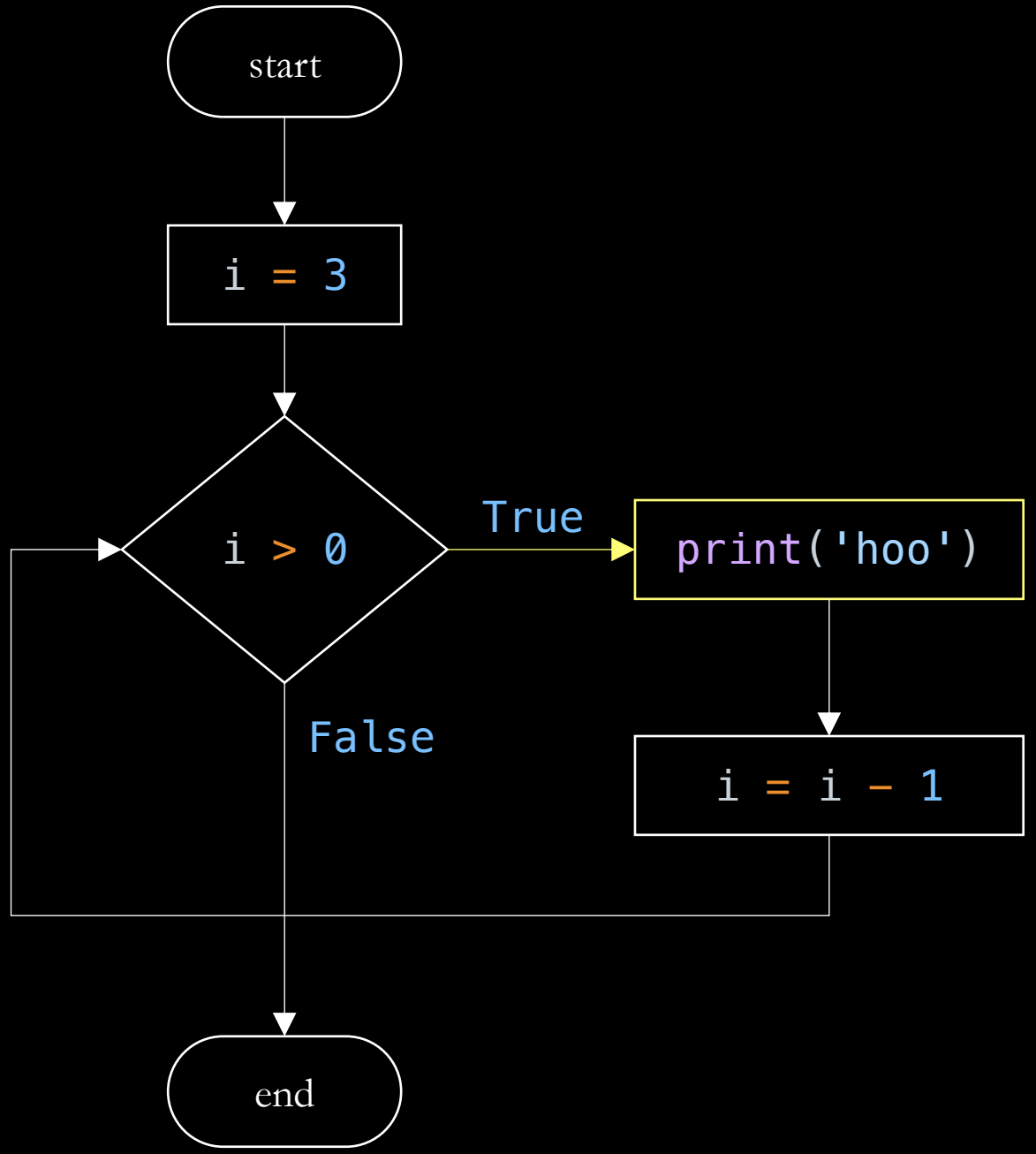



start
i = 3
i > 0
True
False
print('hoo')
i = i - 1
end
i = 3
while i > 0:
print('hoo')
i = i - 1
i > 0
1 > 0
True
Variabler
i
Objekter
3
2
1
hoo
hoo

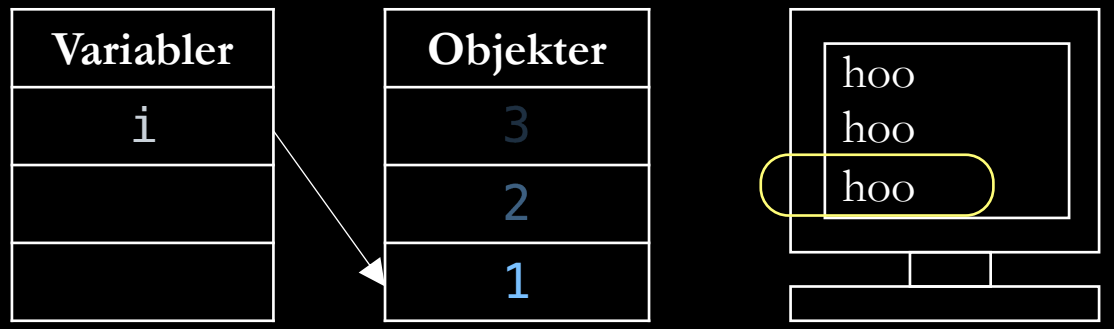

start
i = 3
i > 0
True
False
print('hoo')
i = i - 1
end
i = 3
while i > 0:
print('hoo')
i = i - 1
i > 0
1 > 0
True
Variabler
i
Objekter
3
2
1
hoo
hoo

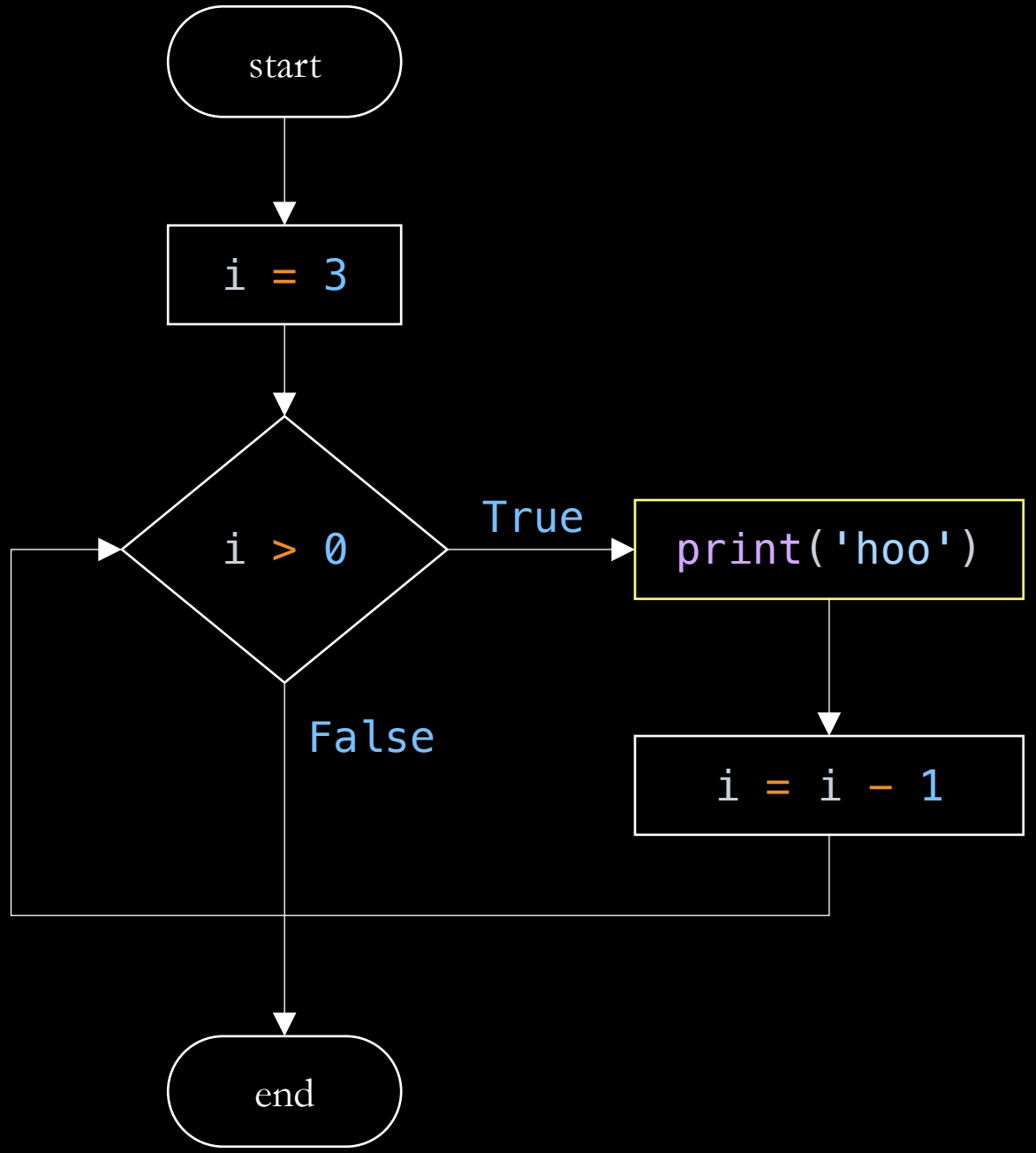
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```



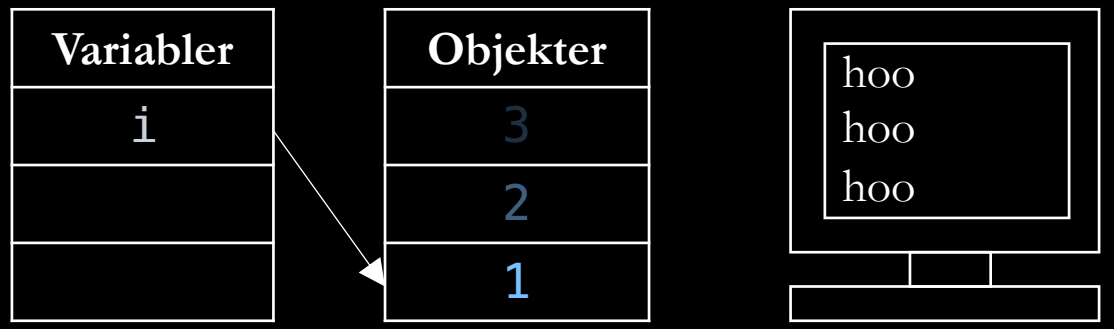


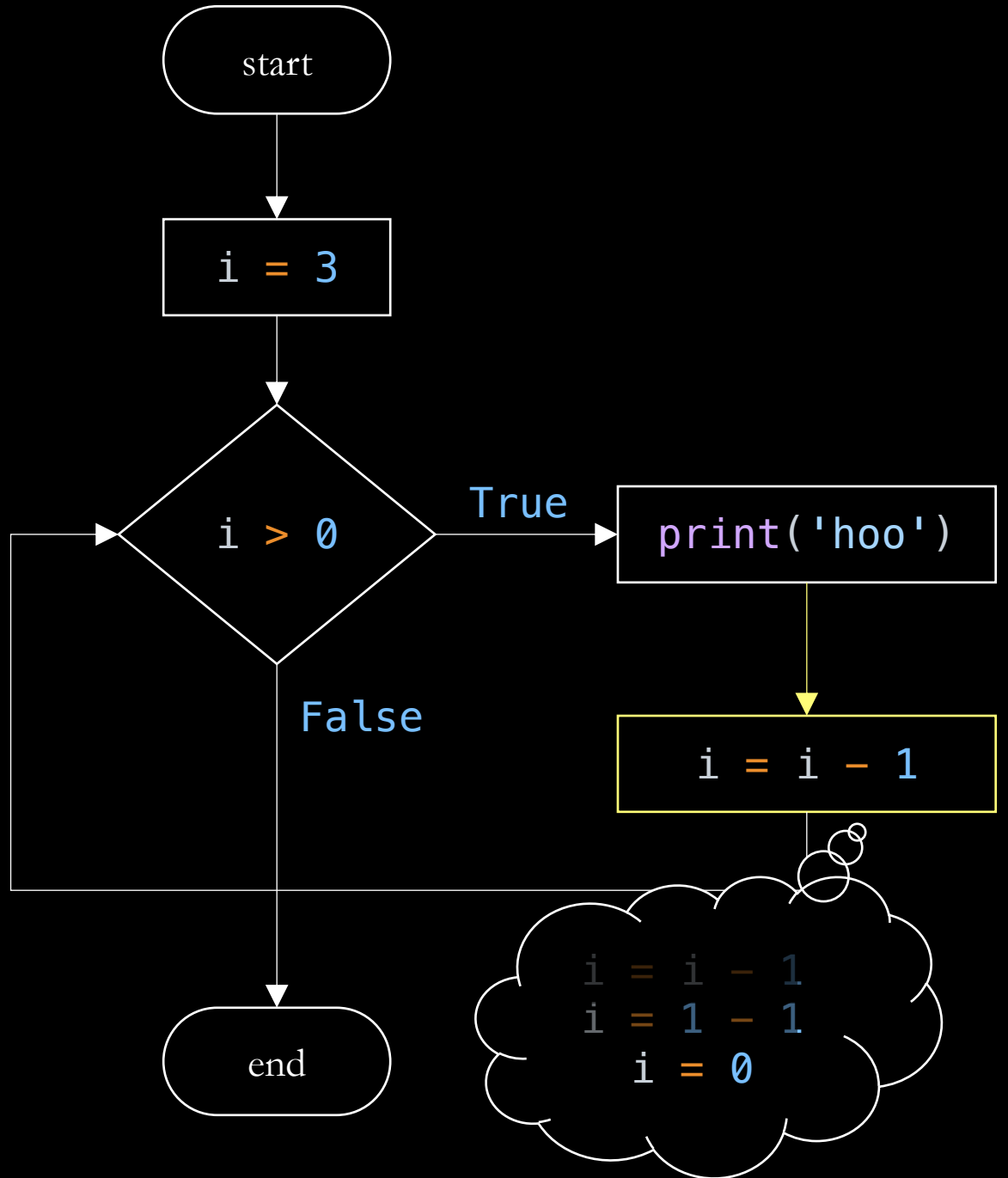
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```



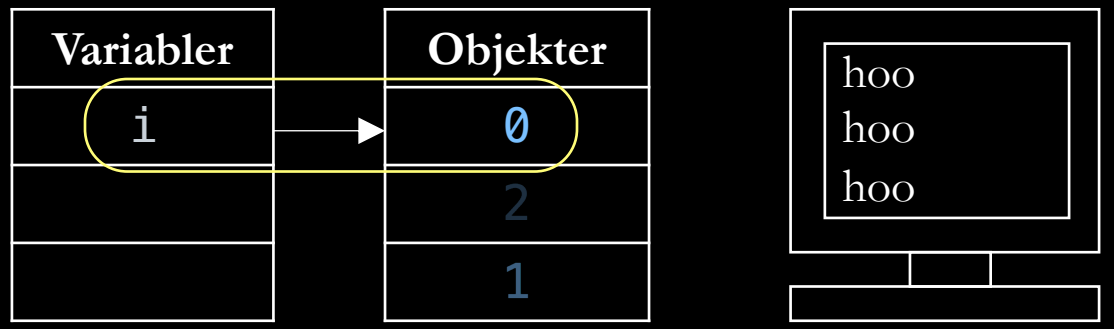


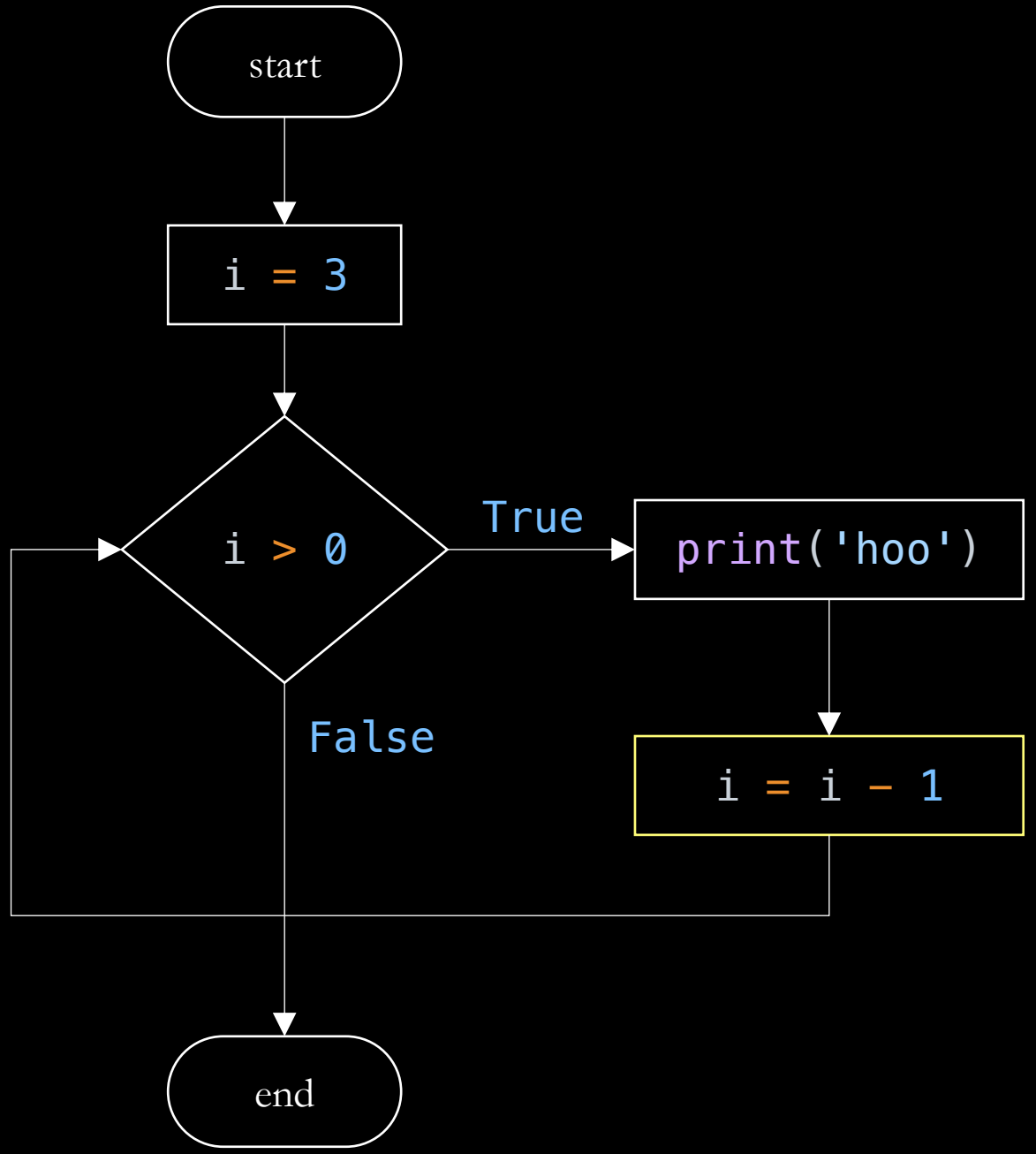
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```



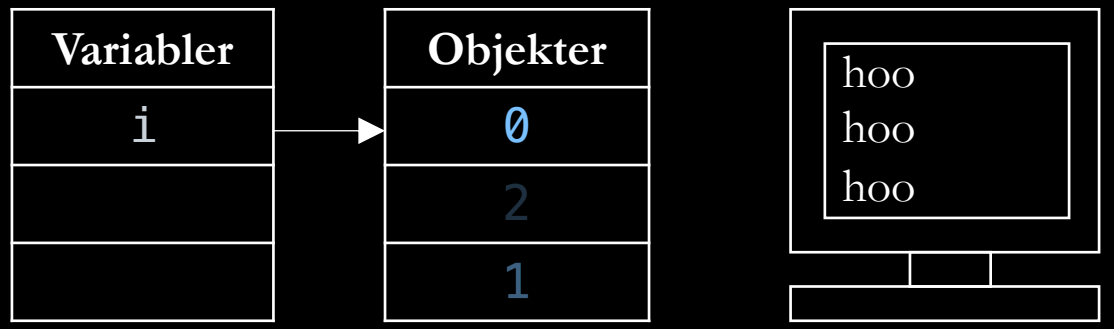


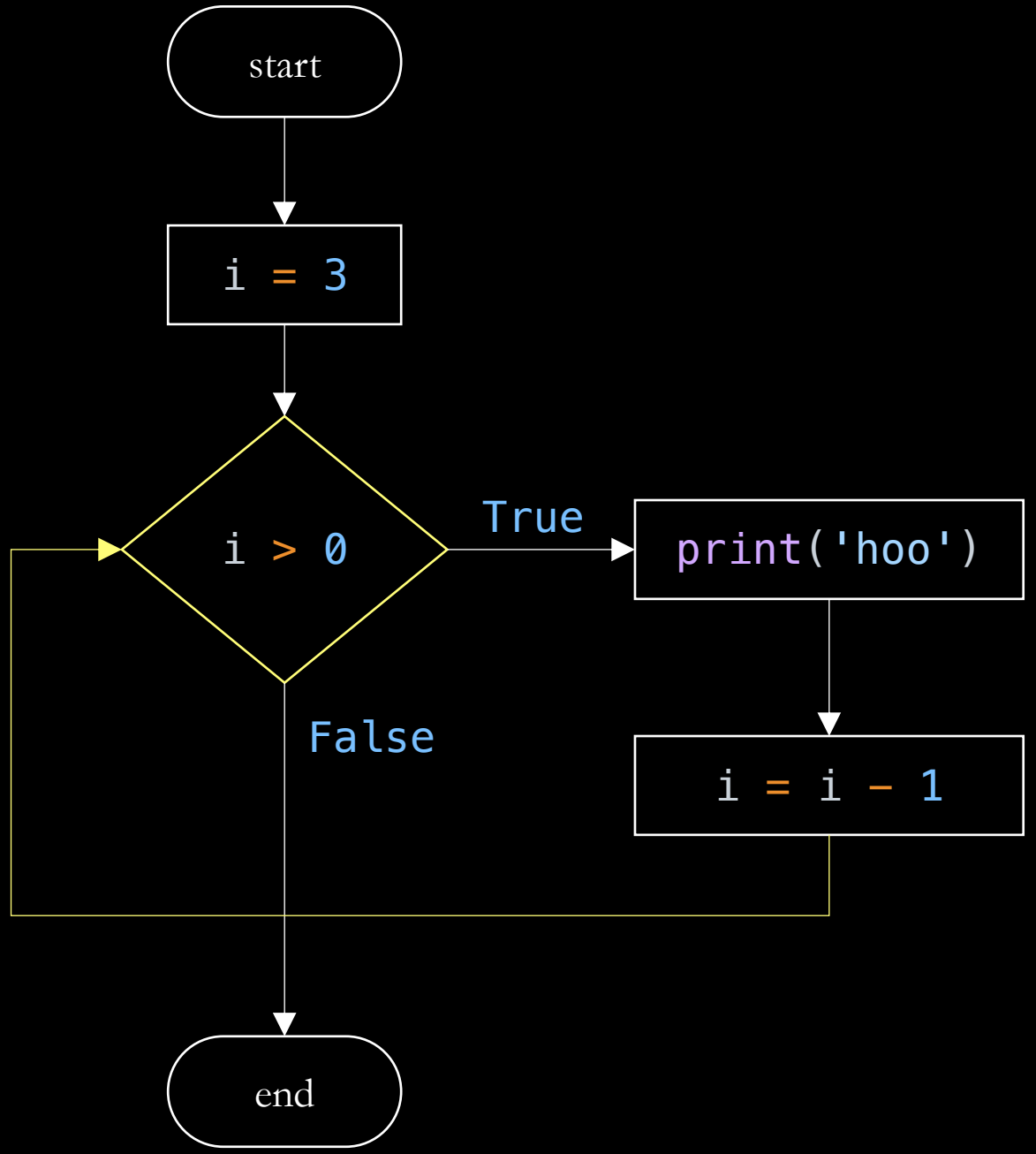
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```

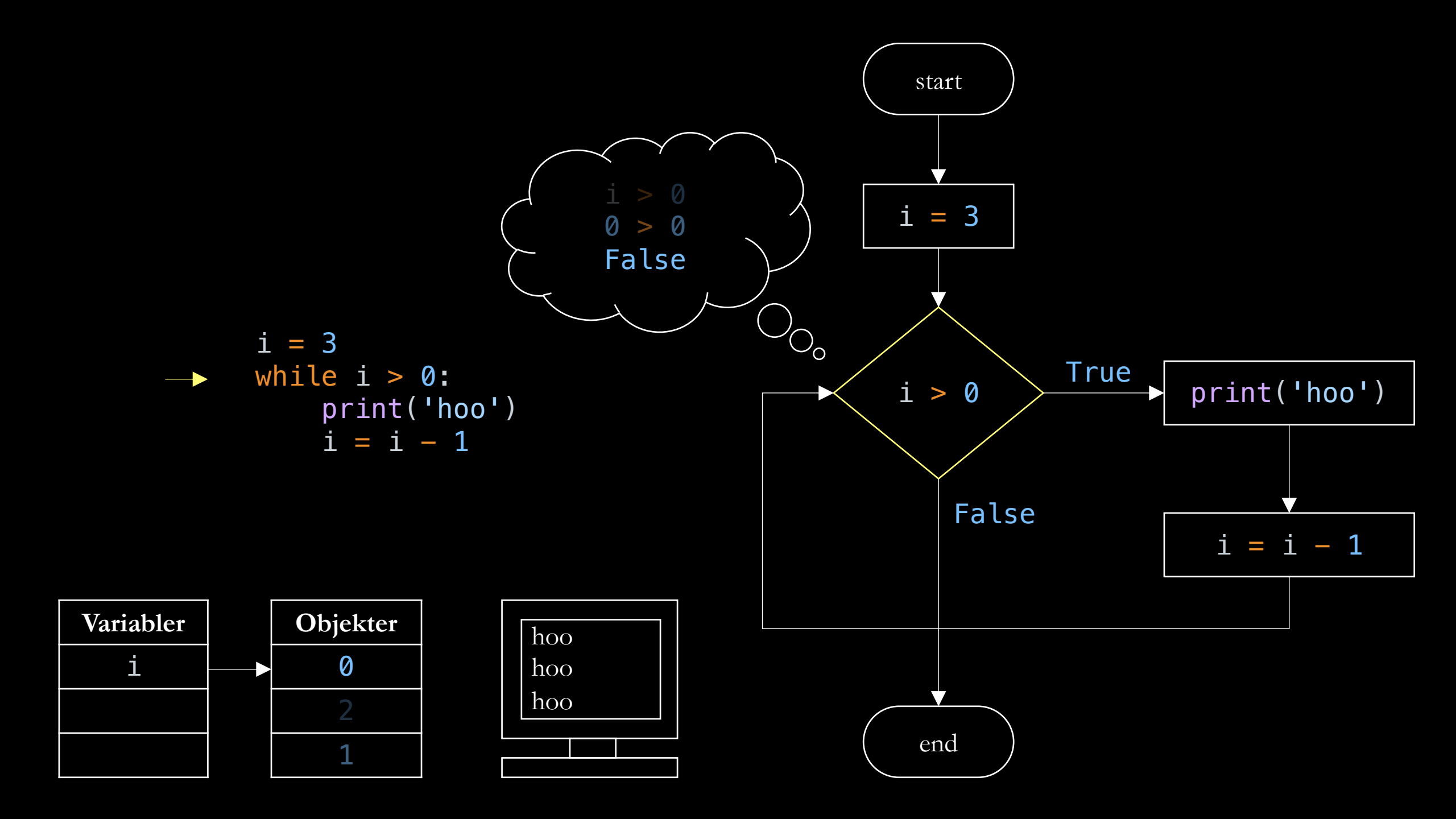


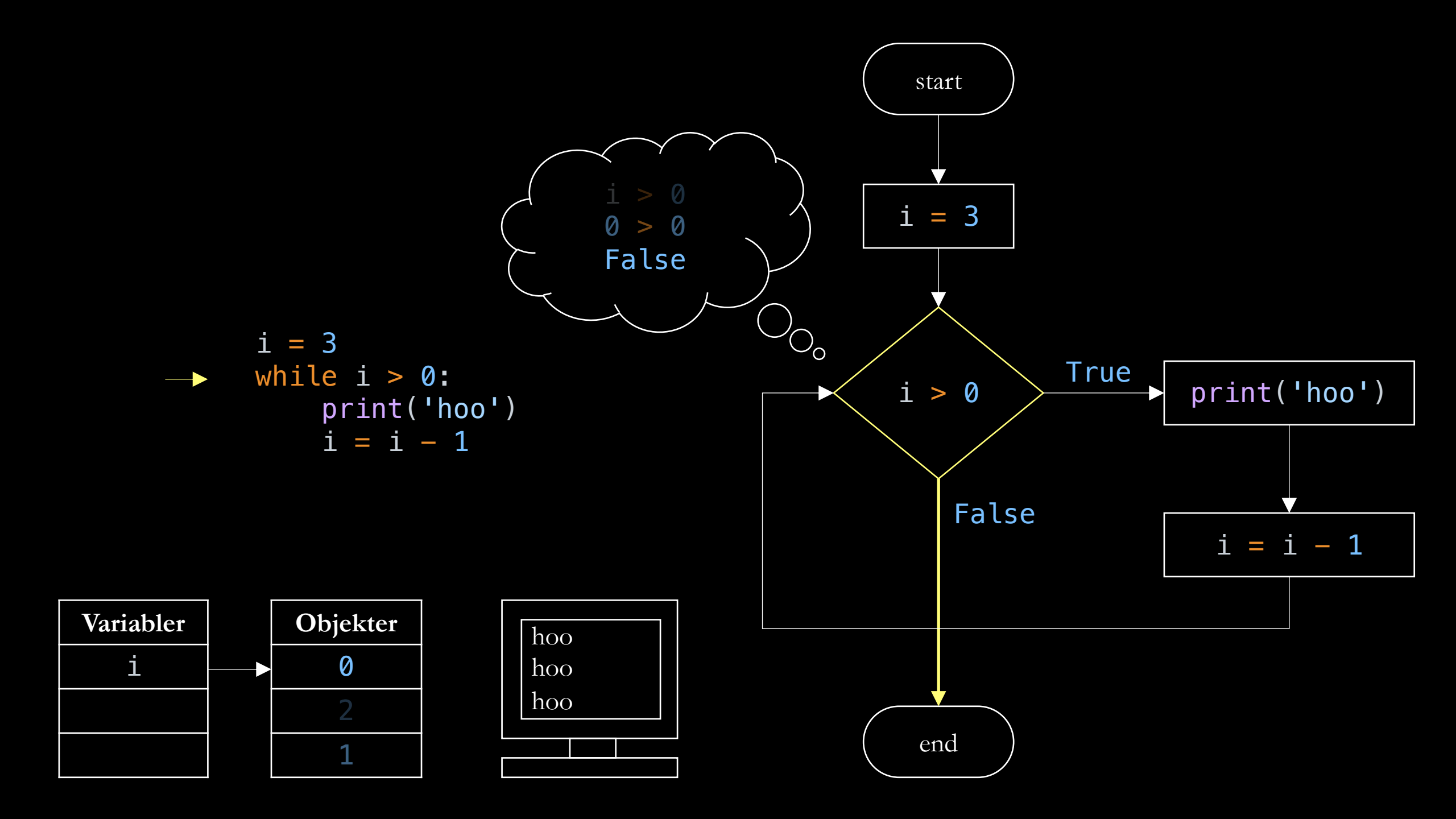


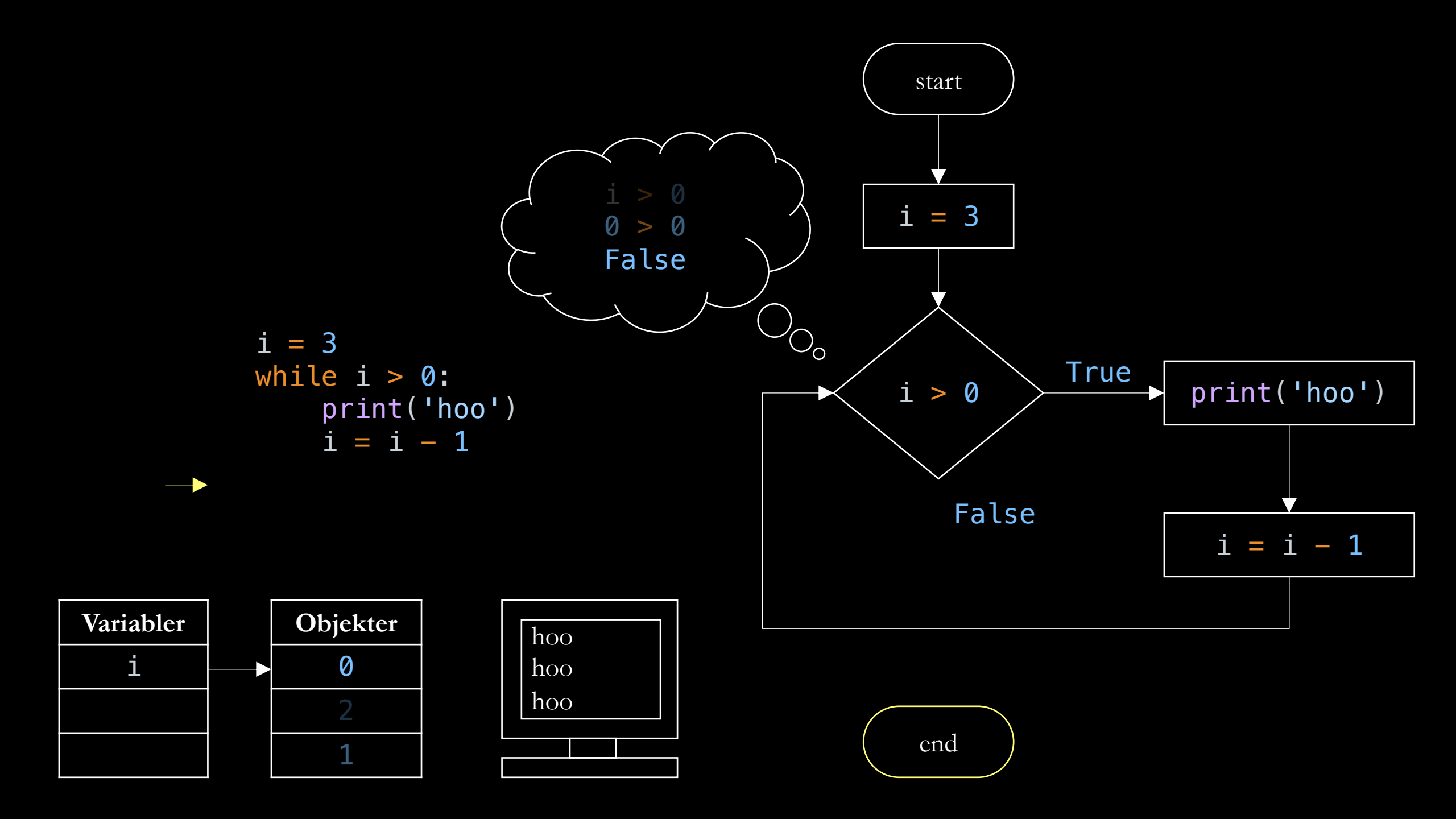
```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```






i = 3
while i > 0:
print('hoo')
i = i - 1
i > 0
0 > 0
False
start
i = 3
i > 0
True
print('hoo')
i = i - 1
False
end
Variabler
i
Objekter
0
2
1
hoo
hoo
hoo


start
i = 3
i > 0
0 > 0
False
i = 3
while i > 0:
print('hoo')
i = i - 1
i > 0
True
print('hoo')
i = i - 1
False
end
Variabler
i
Objekter
0
2
1
hoo
hoo
hoo


start
i = 3
i > 0
True
print('hoo')
False
i = i - 1
end
i > 0
0 > 0
False
i = 3
while i > 0:
print('hoo')
i = i - 1
Variabler
i
Objekter
0
2
1
hoo
hoo
hoo

```
i = 3
while i > 0:
    print('hoo')
    i = i - 1
```



```
i = 0
while i < 3:
    print('hoo')
    i += 1
```

```
i = 0
while i < 3:
    print('hoo')
    i += 1
```



```
for i in [0, 1, 2]:
    print('hoo')
```

```
for i in [0, 1, 2]:
    print('hoo')
```



```
for i in range(3):
    print('hoo')
```

```
for i in range(3):
    print('hoo')
```



```
for _ in range(3):
    print('hoo')
```

```
range(5)
```

```
0, 1, 2, 3, 4
```

```
range(3, 7)
```

```
3, 4, 5, 6
```

```
range(10, 20, 2)
```

```
10, 12, 14, 16, 18
```

```
range(20, 10, -2)
```

```
20, 18, 16, 14, 12
```

`for`

`while`

kan vare evig ☑

☑ kortere å skrive

☑ mindre bugs

Oppgave:

Les input fra brukeren helt til du får noe du vil ha

`break`

avbryt løkken umiddelbart

`continue`

avbryt denne iterasjon av løkken

foo.py

```python
from bar import add

num1 = int(input('num1 = '))
num2 = int(input('num2 = '))

ans = add(num1, num2)
print(f'Added nums: {ans}')
```

```
$ python foo.py
Testing add... OK
Testing multiply... OK
num1 = 2
num2 = 2
Added nums: 4
```

bar.py

```python
def add(a, b):
    return a + b

print('Testing add... ', end='')
assert 4 == add(2, 2)
print('OK')


def multiply(a, b):
    return a * b

print('Testing multiply... ', end='')
assert 6 == multiply(2, 3)
print('OK')
```

foo.py

```
from bar import add

num1 = int(input('num1 = '))
num2 = int(input('num2 = '))

ans = add(num1, num2)
print(f'Added nums: {ans}')
```

```
$ python foo.py
num1 = 2
num2 = 2
Added nums: 4
```

bar.py

```
def add(a, b):
    return a + b

def test_add():
    print('Testing add... ', end='')
    assert 4 == add(2, 2)
    print('OK')

def multiply(a, b):
    return a * b

def test_multiply():
    print('Testing multiply... ', end='')
    assert 6 == multiply(2, 3)
    print('OK')

if __name__ == '__main__':
    test_add()
    test_multiply()
```

Oppgave:

Gitt et heltall x, hvor mange 2'ere er det i tallet?

Oppgave:

Hva er største faktor i tallet 209414732?

Oppgave:

Er tallet x et primtall?

Oppgave:

Hva er det n'te primtallet?