

INF100 – 02

Uttrykk / Variabler / Datatyper

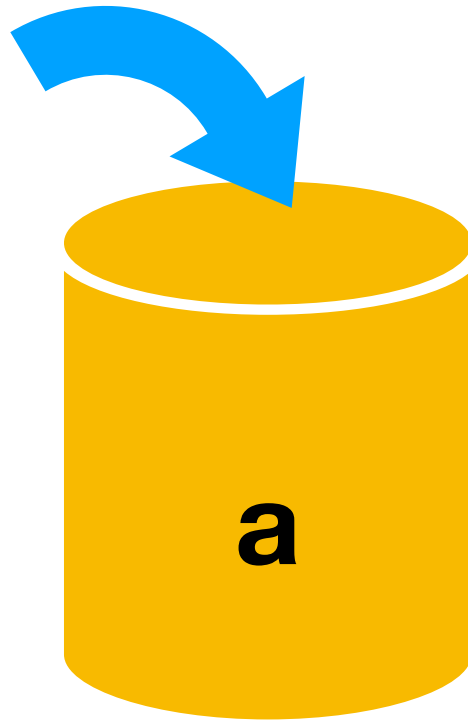
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Expressions / Uttrykk

Expression / Uttrykk	Value / Verdi
12	12
3.56	3.56
“Hei”	“Hei”
13.2 + 17.2 - 2.4	28.0
5**3 - 5**2	100
12. / 3.	4
“ABC” + “xyz”	“ABCxyz”

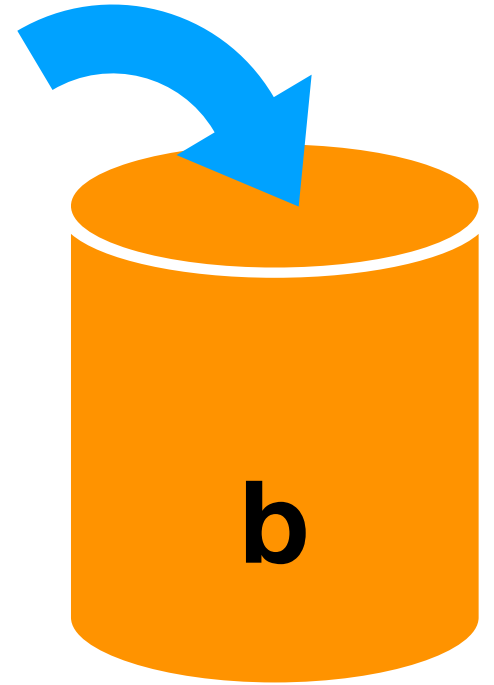
$a = 5$

5



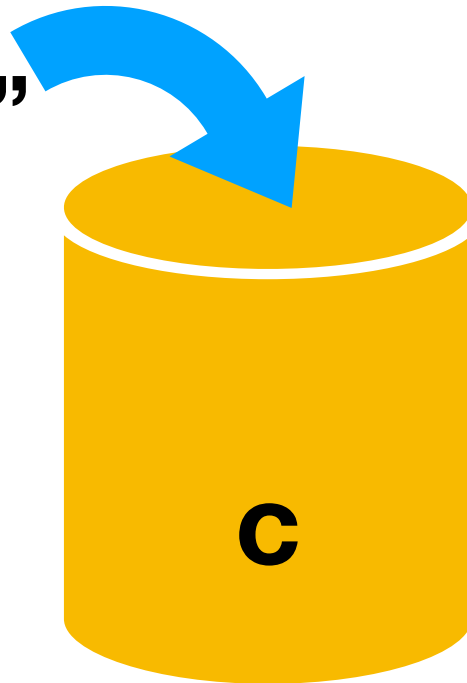
$b = 7$

7



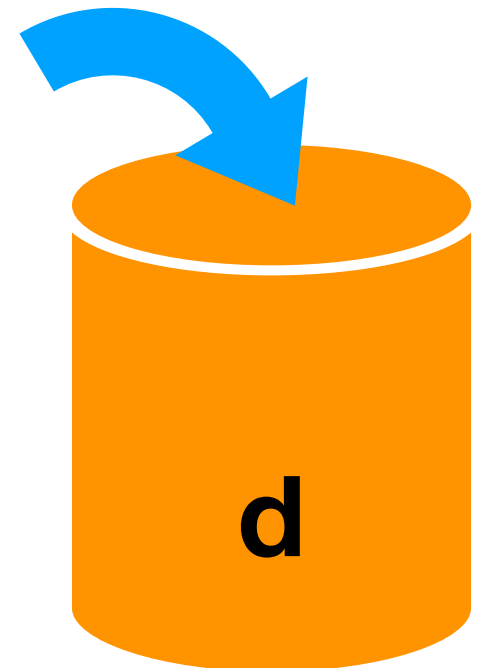
$c = \text{"Hei"}$

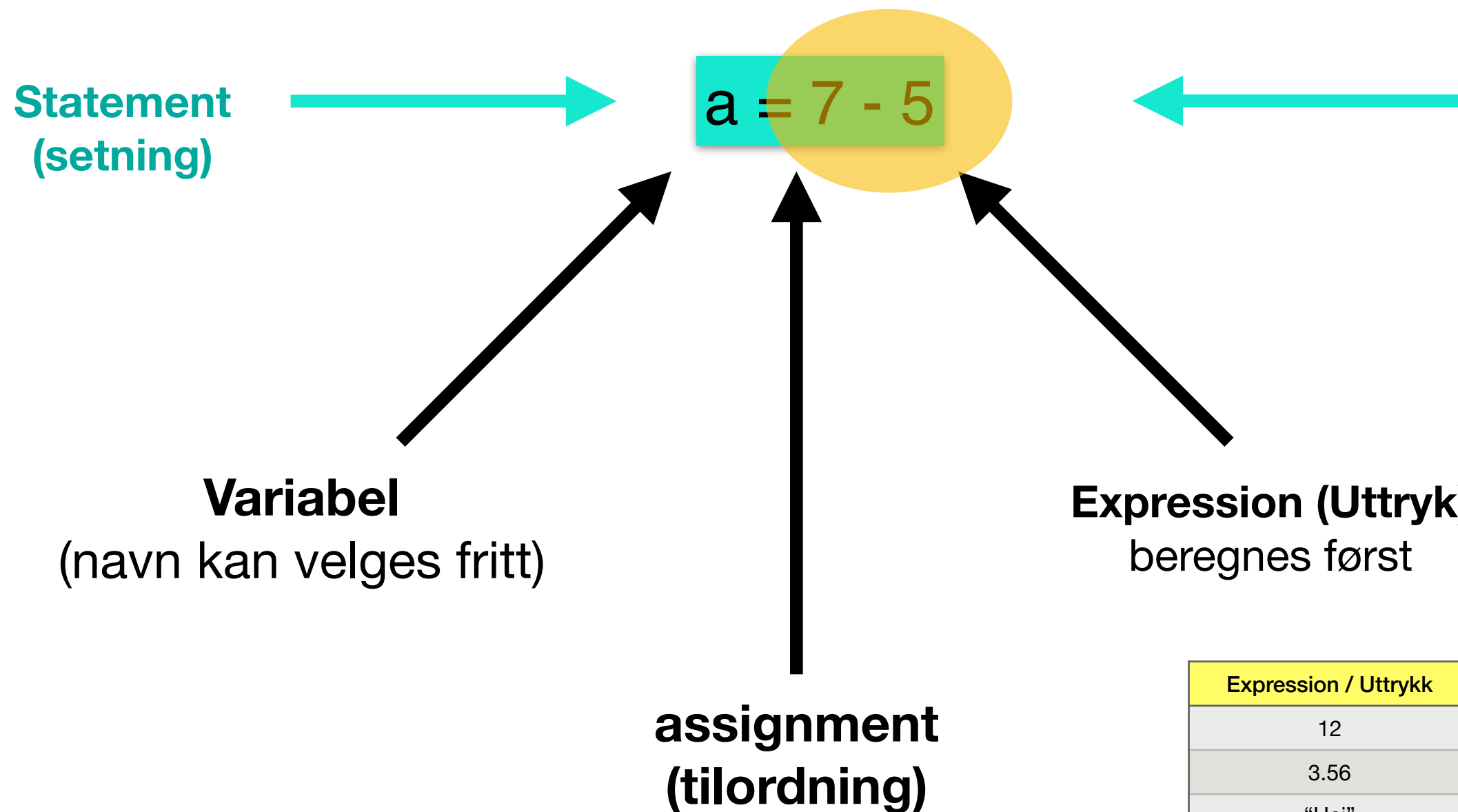
"Hei"



$d = 5 + 3$

8





Expression / Uttrykk	Value / Verdi
12	12
3.56	3.56
"Hei"	"Hei"
13.2 + 17.2 - 2.4	28.0
5**3 - 5**2	100
11 % 3	2
"ABC" + "xyz"	"ABCxyz"

a = 7
b = "hallo"

Expression / Uttrykk	Value / Verdi
7	7
a	7
"hallo"	"hallo"
b	"hallo"

a = 7 + 3
b = "A"+"b"+"c"
c = 3 * a

Expression / Uttrykk	Value / Verdi
7 + 3	10
a	10
"A"+"b"+"c"	"Abc"
b	"Abc"
3 * a	30
c	30

a = 3
b = 7
a = b - a

Expression / Uttrykk	Value / Verdi
a	3
b	7
b - a	4
a	4

```
a = 3
a = a+1
b = 7
b = b-2
a = a+b
a = a*a
c = a
b = a+b+c
print(b)
```

a	b	c
3		
4		
4	7	
4	5	
9	5	
81	5	
81	5	81
81	167	81

```
start = 500.0
```

```
percent = 2.4
```

```
years = 10.0
```

```
final = start * (1 + percent/100)**years
```

500 * (1 + 0.024) ^10

500 * 1.024 ^10

500 * 1.26765

633.8253

Assignment operators

`a = a + 1`

`x = x * 5`

`k = k - a`

`D = D / 2`



`a += 1`

`x *= 5`

`k -= a`

`D /= 2`

**Prefer this version,
"don't repeat yourself"**

Navn for variabler

- vanlig å bruke små bokstaver i variabelnavn
- bruk _ for mellomrom
- navn skal beskrive betydning

```
length = 5.0  
width = 2.0  
height = 1.2  
volume = length * width * height
```

```
a = 5.0  
b = 2.0  
c = 1.2  
d = a * b * c
```

```
bird = 5.0  
yellow = 2.0  
water = 1.2  
duck = yellow * water * bird
```



- konstanter: vanlig med store bokstaver

```
MVA_FAKTOR = 1.25
```

```
# pris_uten_mva = ...
```

```
pris = pris_uten_mva * MVA_FAKTOR
```

Oppgave

- Les in lengde, bredde, høyde (cm)
- Skriv ut volumen av boksen (cm^3)
- Tetthet av gold er 19.32 g/cm^3
- Hvor tung er boksen?

str

"Hi, I'm a string"

'Also a string'

Uttryk med *string*

- Konvertering til tekststreng: `str(...)`

- $+$
 $*$ `"ABC"+"xyz"`

`"ABC" * 5`

Expression / Uttryk	Value / Verdi
<code>str(13)</code>	<code>"13"</code>
<code>str(6-9)</code>	<code>"-3"</code>
<code>"A"+"ooo"+"B"</code>	<code>"AoooB"</code>
<code>"xyz"*5</code>	<code>"xyzxyzxyzxyzxyz"</code>

str formatering

"Many different lines"

Many different lines

"Many\ndifferent\nlines"

Many
different
lines

"""Many
different
lines like
you
need"""

Many
different
lines like
you
need

Variabler i tekst

```
alder = 30  
svar = "Huset er " + str(alder) + " år gammel"
```

Huset er 30 år gammel

```
alder = 30  
svar = f"Huset er {alder} år gammel"
```

Huset er 30 år gammel

```
postnr = 5008  
sted = "Bergen"  
svar = f"By: {postnr} {sted}"
```

By: 5008 Bergen

Variabler i tekst

```
a = 10  
b = 162  
c = 7
```

```
svar = f''''''  
A: {a}  
B: {b}  
C: {c}  
''''''
```

```
print(svar)
```

```
A: 10  
B: 162  
C: 7
```

```
a = 10  
b = 162  
c = 7
```

```
svar = f''''''  
A: {a:4d}  
B: {b:4d}  
C: {c:4d}  
''''''
```

```
print(svar)
```

```
A:  10  
B: 162  
C:   7
```

Variabler i tekst

```
from math import sqrt  
tall = sqrt(2)
```

```
svar = f"""  
Default: {tall}  
2 decimals: {tall:.2f}  
4 decimals: {tall:.4f}  
"""
```

```
print(svar)
```

```
Default: 1.4142135623730951  
2 decimals: 1.41  
4 decimals: 1.4142
```

Skjema

```
skjema = """
```

```
Default: {a}
```

```
2 decimals: {a:.2f}
```

```
4 decimals: {a:.4f}
```

```
"""
```

```
svar_x = skjema.format(a = 1.23456)
```

```
y = 9.876543
```

```
svar_y = skjema.format(a = y)
```

```
print(svar_x)
```

```
print(svar_y)
```

Default: 1.23456

2 decimals: 1.23

4 decimals: 1.2346

Default: 9.876543

2 decimals: 9.88

4 decimals: 9.8765

Uttryk med *string*

- Lengde: `len("hello")`

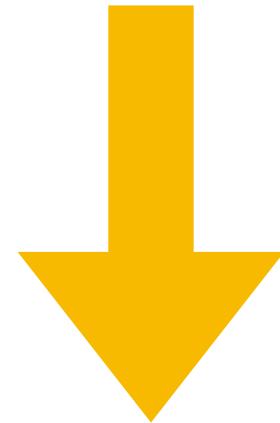
har *int* resultat

Expression / Uttryk	Value / Verdi
<code>len("hei")</code>	3
<code>len("hallo")</code>	5
<code>len("aa"*7)</code>	14
<code>len("")</code>	0

Oppgave

- Skriv ut et ord med passende understrek
- Må fungere med ulike ord uten endringer i resten av programmet

"Oppvaskmaskin"



Oppvaskmaskin

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