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The slides are meant as visual support for the lecture.
They are not a documentation nor a script.

Please do not print the slides.

Comments and feedback at n.meseth@hs-osnabrueck.de

MOTIVATION

FIRST PROGRAM

```
print("hello, world")
```

use functions

comments

```
# this is a comment  
print("hello, world")
```



```
# this is a comment  
print("hello, world") # another comment
```

```
'''  
a multi-line comment  
for longer descriptions  
'''  
print("hello, world")
```

bugs

syntax errors

runtime errors

user input

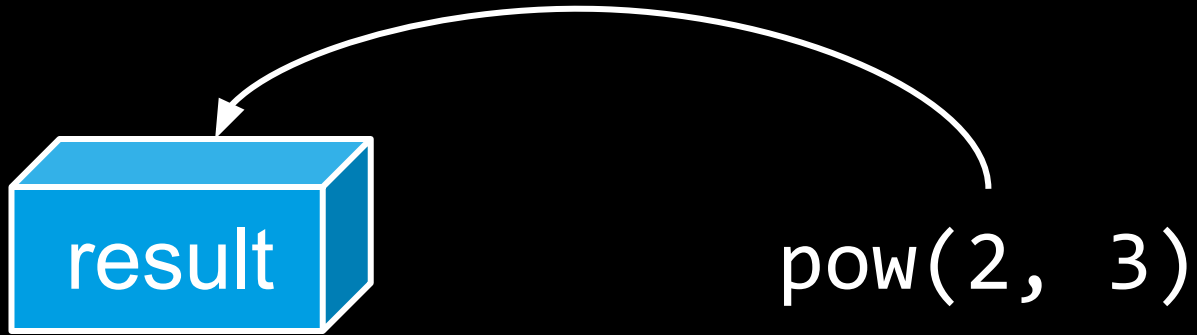
```
user_name = input("What's your name? ")
```

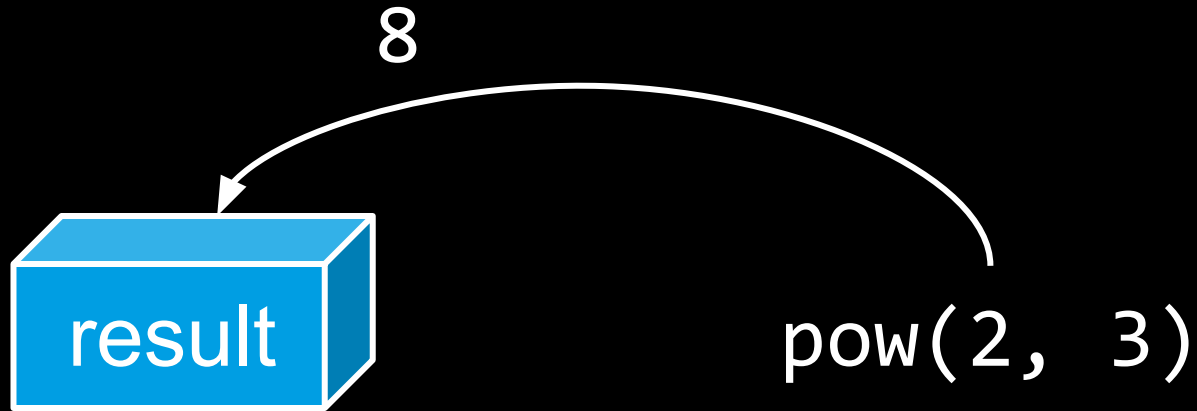
return values


```
result = pow(2, 3)
```


VARIABLES







```
exp = 4  
result = pow(2, exp)
```

 = 4

result = pow(2, )

```
exp = 4  
result = pow(2, exp)  
print(result)
```


pseudocode

step 1: determine exponent

step 2: calculate power

step 3: print result

problem solving → divide and conquer

step 1: determine exponent

step 2: calculate power

step 3: print result

```
# step 1: determine exponent
```

```
exp = 4
```

```
# step 2: calculate power
```

```
# step 3: print result
```

```
# step 1: determine exponent
```

```
exp = 4
```

```
# step 2: calculate power
```

```
result = pow(2, exp)
```

```
# step 3: print result
```

```
# step 1: determine exponent
```

```
exp = 4
```

```
# step 2: calculate power
```

```
result = pow(2, exp)
```

```
# step 3: print result
```

```
print(result)
```

FUNCTIONS

create functions

```
def greet():  
    print("hello")
```

```
def greet(name):  
    print("hello", name)
```

EXPRESSIONS

operators

logic

math

data types

integer

float

boolean

string

```
strip()  
capitalize()  
title()
```

format strings

```
print(f"Hello {name}")
```