Python Programming

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Primitive Types

```
students_count = 1000
rating = 4.99
is_published = False
course_name = "Python Programming"
print(students_count)
print(rating)
print(course_name)
print(len(course_name))
```

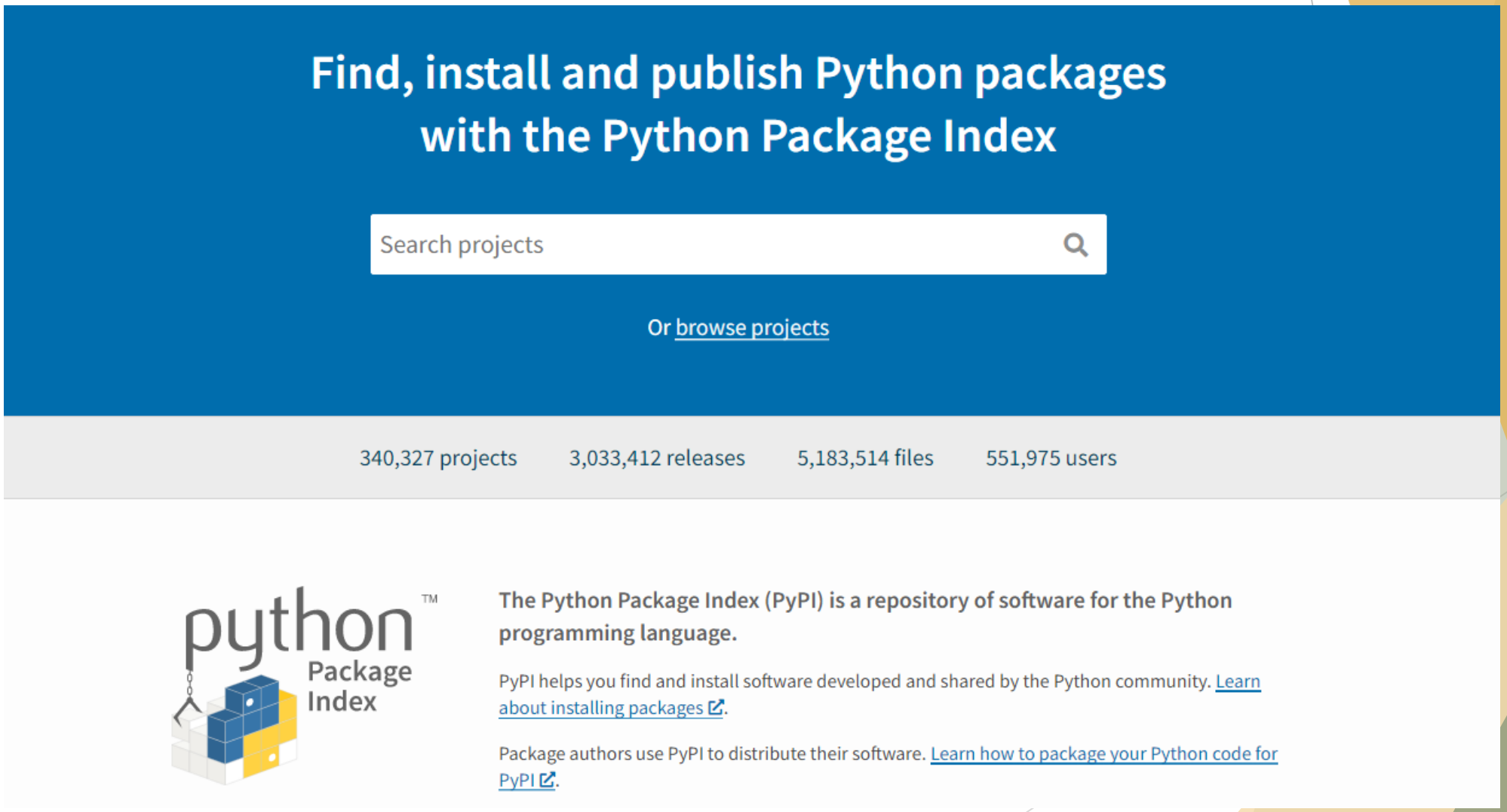
Packages

```
import math

a = 0.36
b = math.sqrt(a)
print(b)
```

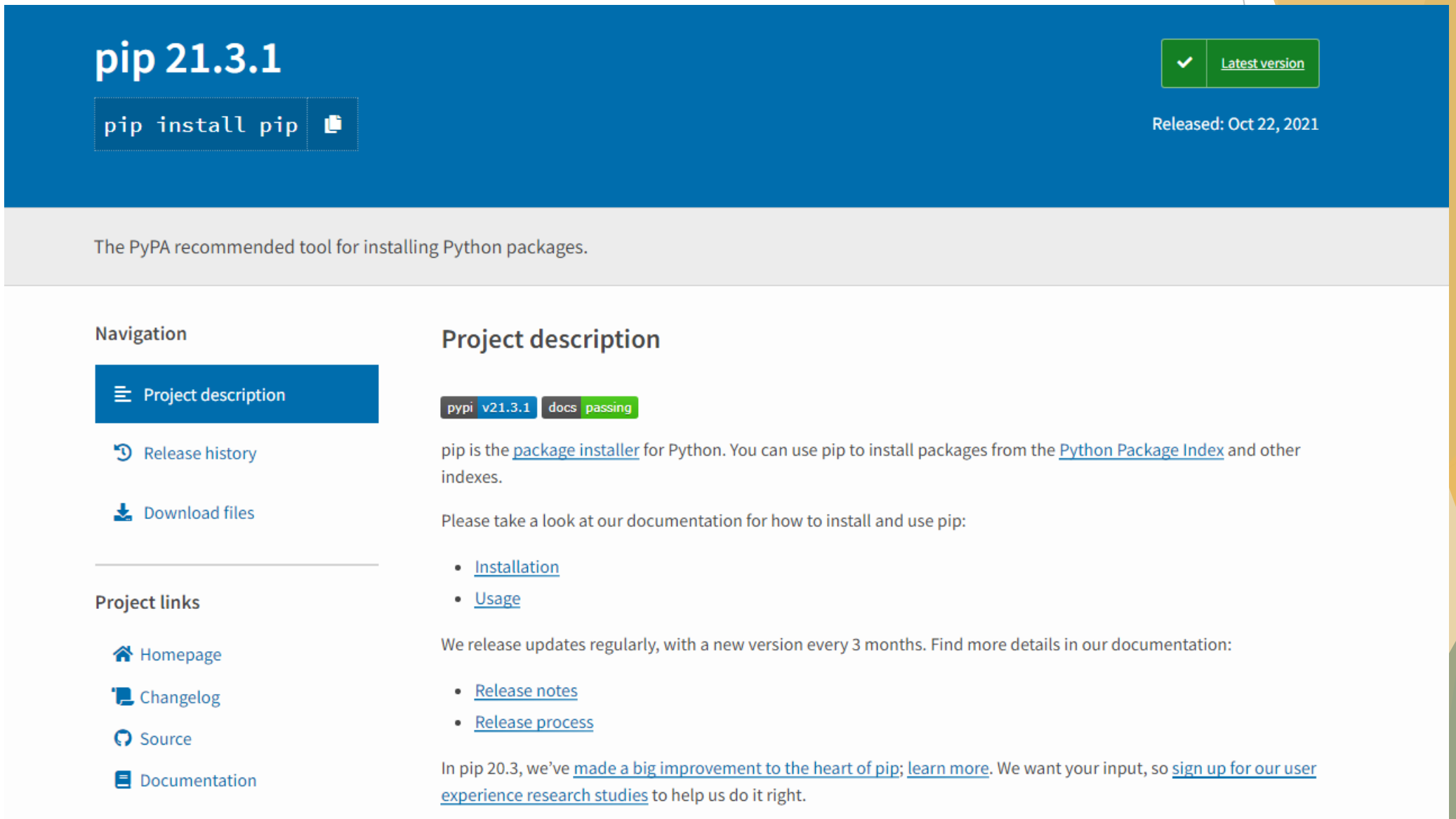
Packages

https://pypi.org/



Packages

https://pypi.org/project/pip/



pip 21.3.1

```
pip install pip
```

Latest version

Released: Oct 22, 2021

The PyPA recommended tool for installing Python packages.

Navigation

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Project description

pypi v21.3.1 docs passing

pip is the package installer for Python. You can use pip to install packages from the Python Package Index and other indexes.

Please take a look at our documentation for how to install and use pip:

- Installation
- Usage

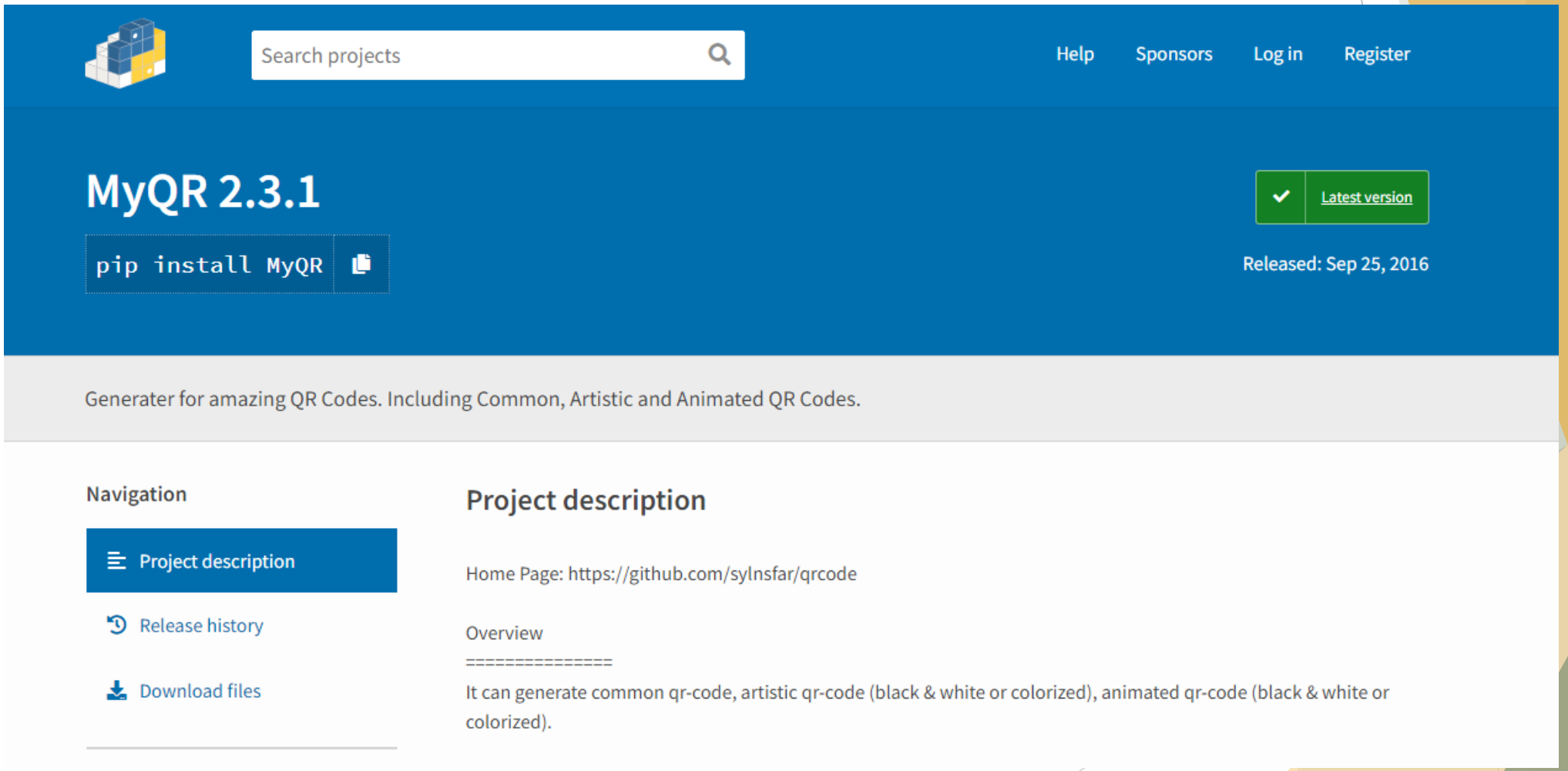
We release updates regularly, with a new version every 3 months. Find more details in our documentation:

- Release notes
- Release process

In pip 20.3, we've made a big improvement to the heart of pip; learn more. We want your input, so sign up for our user experience research studies to help us do it right.

Packages

https://pypi.org/project/MyQR/



Packages

https://villa.jianzhang.tech/

Packages

```
from MyQR import myqr

"""Generate a QR code"""
myqr.run(words='https://villa.jianzhang.tech/',
         save_name='001.png',
         )

"""Generate a QR code with a background picture"""
myqr.run(words='https://villa.jianzhang.tech/',
         picture=r'duola.jpg',
         colorized=True,  # True：Color，False：Gray
         save_name='002.png')
```

Functions

```
def my_function():
    print("Hello from a function")

my_function()

def my_function(fname):
    print(fname + " Refsnes")

my_function("Emil")
my_function("Tobias")
my_function("Linus")
```

Functions

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

def lessthan(a,b):
    return a<=b

print(add(5,4))
print(lessthan(5,4))
```

Comparison Operators

```
# <     strictly less than
# <=    less than or equal
# >     strictly greater than
# >=    greater than or equal
# ==    equal
# !=    not equal
```

Conditional Statements

```
temperature = 25

if temperature > 30:
    print("It's warm")
    print("Drink water")
elif temperature > 20:
    print("It's nice")
else:
    print("It's cold")
print("Done")
```

Ternary Operator

```
age1 = 17

if age1 >= 18:
    print("Eligible")
else:
    print("Not eligible")

age2 = 20
message = "Eligible" if age2 >= 18 else "Not eligible"
print(message)
```

Logical Operators

```
income = 2000
good_credit = True

if income > 2500:
    high_income = True
    print("You have a high income!")
else:
    high_income = False
    print("You have a low income")
if high_income and good_credit:
    print("Eligible for loan")
else:
    print("Not eligible for loan")
```

Logical Operators

```
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if high_income or good_credit:
    print("Eligible for loan")
else:
    print("Not eligible for loan")
```

Logical Operators

```
age = 22

if age >= 18 and age < 65:
    print("Eligible")

if 18 <= age < 65:
    print("Eligible")
```

For Loops

```
for number in range(3):
    print("Attempt", number + 1, (number + 1) * ".")

for number in range(1, 4):
    print("Attempt", number, number * ".")

for number in range(1, 10, 2):
    print("Attempt", number, number * ".")
```

For Loops

```
successful = False

for number in range(3):
    print("Attempt")
    if successful:
        print("Successful")
        break
else:
    print("Attempted 3 times and failed")
```

For Loops

```
for x in "Python":
    print(x)

for x in [1, 2, 3, 4]:
    print(x)
```

Nested Loops

```
for x in range(2):
    for y in range(3):
        print(f"({x},{y})")
```

While Loops

```
number = 100
while number > 0:
    print(number)
    number = number // 2

command = ""
while command.lower() != "quit":
    command = input(">")
    print("Echo", command)
```

While Loops

```
while True:
    command = input(">")
    print("Echo", command)
    if command.lower() == "quit":
        break
```

Exercise

```
# Display the even number (2 4 6 8) followed by this message "We have 4 even numbers"
# 2
# 4
# 6
# 8
# We have 4 even numbers
```

```
count = 0
for number in range(1, 10):
    if number % 2 == 0:
        count = count + 1
        print(number)
print(f"we have {count} even number")
```

Homework

- Write Python code to output the **9*9 multiplication table** in the format shown below:

```
1*1=1
1*2=2  2*2=4
1*3=3  2*3=6  3*3=9
1*4=4  2*4=8  3*4=12 4*4=16
1*5=5  2*5=10 3*5=15 4*5=20 5*5=25
1*6=6  2*6=12 3*6=18 4*6=24 5*6=30 6*6=36
1*7=7  2*7=14 3*7=21 4*7=28 5*7=35 6*7=42 7*7=49
1*8=8  2*8=16 3*8=24 4*8=32 5*8=40 6*8=48 7*8=56 8*8=64
1*9=9  2*9=18 3*9=27 4*9=36 5*9=45 6*9=54 7*9=63 8*9=72 9*9=81
```

Questions?