

1.1python 的安装

1、python 的下载地址

<https://www.python.org/downloads/windows/>

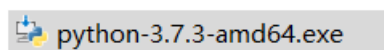
下载最新版 3.7.3



2、在 Python3.7.3 版本中，选择下载方式如下：

Windows x86-64 executable installer	Windows	for AMD64/EM64T/x64	a2b79563476e9aa47f11899a53349383	26190920	SIG
https://www.python.org/downloads/release/python-373/					
version	Operating System	Description	MD5 Sum	File Size	GPG
Gzipped source tarball	Source release		2ee10f25e3d1b14215d56c3882486cf	22973527	SIG
XZ compressed source tarball	Source release		93df27aec0cd18d6d42173e601ffbfbfd	17108364	SIG
macOS 64-bit/32-bit installer	Mac OS X	for Mac OS X 10.6 and later	5a95572715e0d600de28d6232c656954	34479513	SIG
macOS 64-bit installer	Mac OS X	for OS X 10.9 and later	4ca0e30f48be690bfe80111daee9509a	27839889	SIG
Windows help file	Windows		7740b11d249bca16364f4a45b40c5676	8090273	SIG
Windows x86-64 embeddable zip file	Windows	for AMD64/EM64T/x64	854ac011983b4c799379a3baa3a040ec	7018568	SIG
Windows x86-64 executable installer	Windows	for AMD64/EM64T/x64	a2b79563476e9aa47f11899a53349383	26190920	SIG
Windows x86-64 web-based installer	Windows	for AMD64/EM64T/x64	047d19d2569c963b8253a9b2e52395ef	1362888	SIG
Windows x86 embeddable zip file	Windows		70df01e7b0c1b7042aabb5a3c1e2fbd5	6526486	SIG
Windows x86 executable installer	Windows		ebf1644cdc1eeebacc92afa949cfc01	25424128	SIG
Windows x86 web-based installer	Windows		d3944e218a45d982f0abcd93b151273a	1324632	SIG

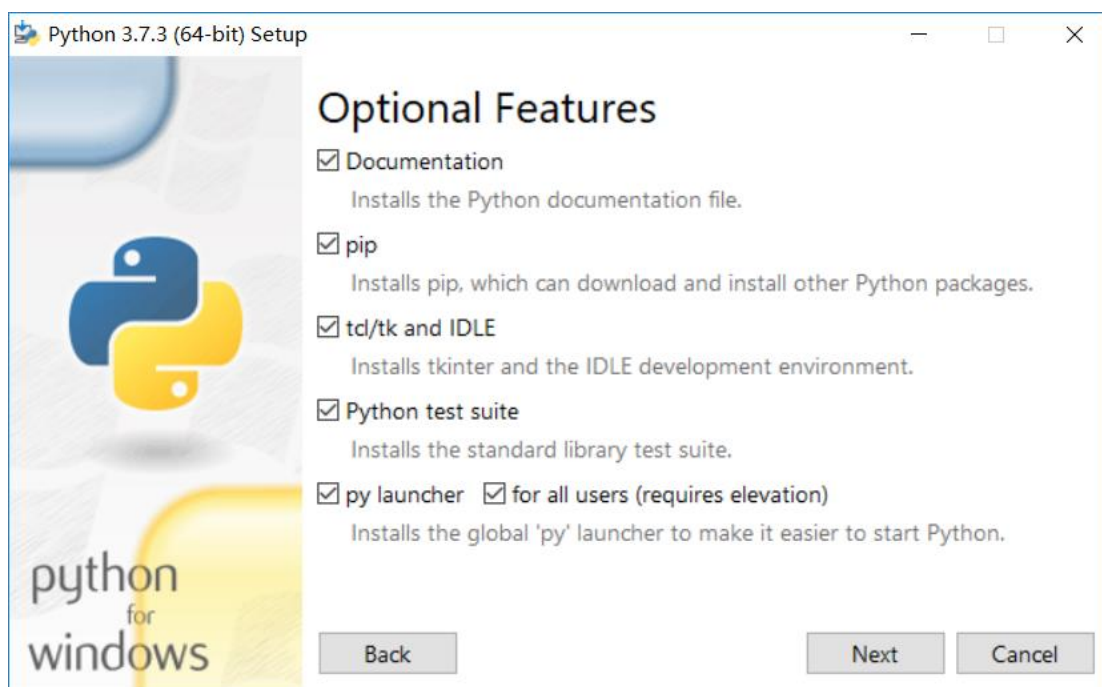
3、右键，以管理员身份运行



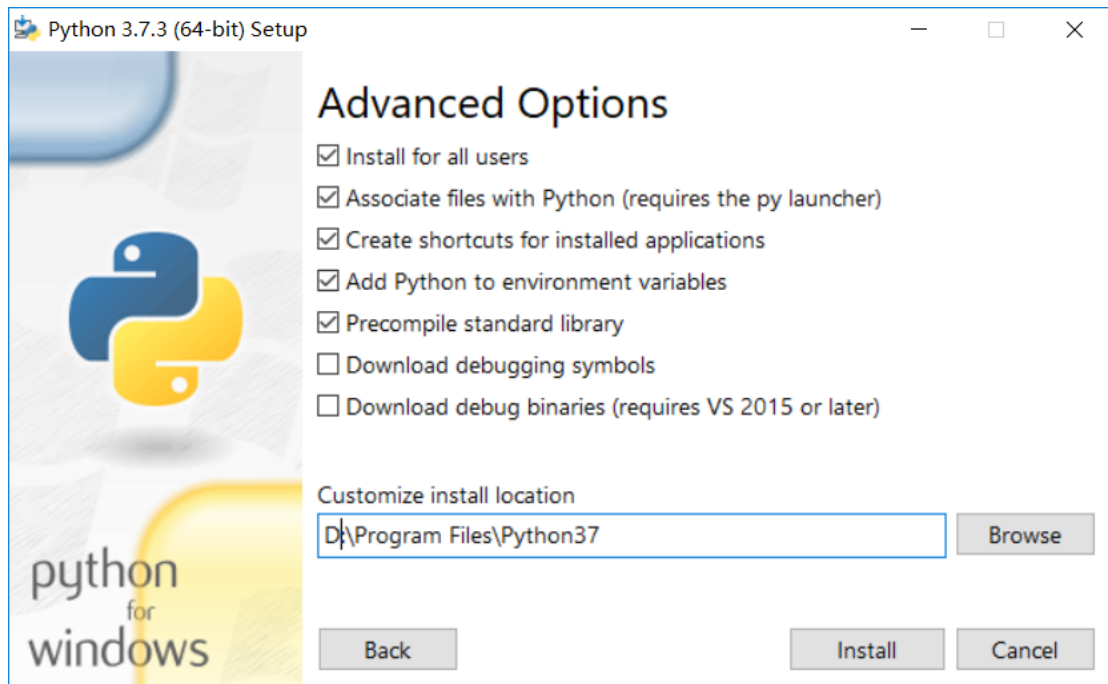
4、选择 Add python 3.7 to Path



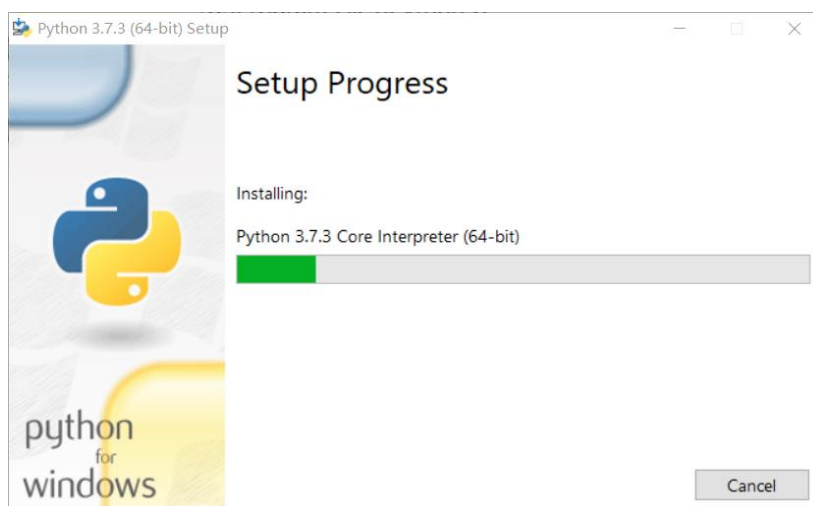
5、选择 Customize installation，而后点击 Next



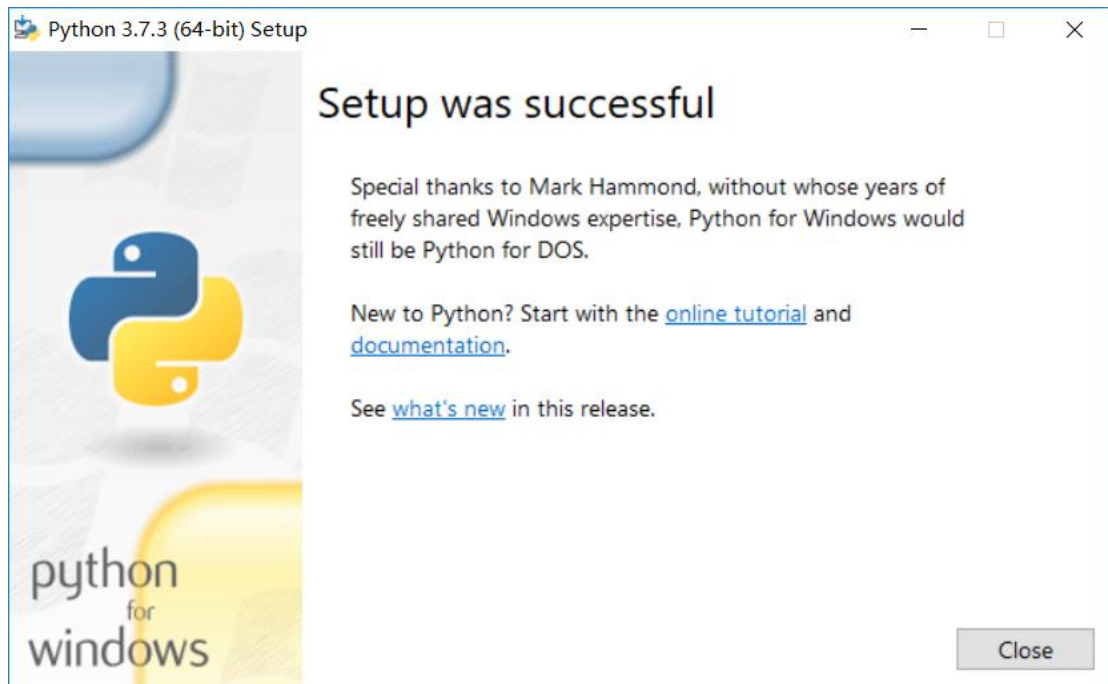
6、最小面的两个选项不要选，再把它安装修改为 D:\Program Files\Python37，默认安装 C:\Program Files\Python37 盘也行



7、点击 Install 进行下一步的安装



8、安装完成后点击 close



1.2 numpy 的安装

- 1、在界面中输入 pip install numpy

命令提示符

```
Microsoft Windows [版本 10.0.17134.648]  
(c) 2018 Microsoft Corporation。保留所有权利。  
  
C:\Users\LENOVO>pip install numpy_
```

- 2、安装过程如下

```
命令提示符 - pip install numpy  
Microsoft Windows [版本 10.0.17134.648]  
(c) 2018 Microsoft Corporation。保留所有权利。  
  
C:\Users\LENOVO>pip install numpy  
Collecting numpy  
  Downloading https://files.pythonhosted.org/packages/3a/3c/515afabfe4f29bfc0a67037efaf518c3  
/numpy-1.16.2-cp37-cp37m-win_amd64.whl (11.9MB)  
    23% |#####| 2.8MB 277kB/s eta 0:00:33
```

- 3、安装完成后提示

1.3 opencv 的安装

<https://www.lfd.uci.edu/~gohlke/pythonlibs/#opencv>

- (1) 下载如下版本

[opencv_python-4.0.0+contrib-cp37-cp37m-win_amd64.whl](#)

(2) 在 windows 文件夹的路径 中输入 cmd 跳出对话框，输入 pip install opencv_python-4.0.0+contrib-cp37-cp37m-win_amd64.whl

安装成功后提示：

```
C:\Windows\System32\cmd.exe
Microsoft Windows [版本 10.0.17134.648]
(c) 2018 Microsoft Corporation。保留所有权利。

G:\soft\python\python3.7>pip install opencv_python-4.0.0+contrib-cp37-cp37m-win_amd64.whl
Processing g:\soft\python\python3.7\opencv_python-4.0.0+contrib-cp37-cp37m-win_amd64.whl
Installing collected packages: opencv-python
Successfully installed opencv-python-4.0.0+contrib
G:\soft\python\python3.7>_
```

(3) 最后编写几行小代码测试下

```
import numpy as np
```

```
import cv2
```

```
image = cv2.imread("chen222.jpg")
```

```
cv2.imshow("Image",image)
```

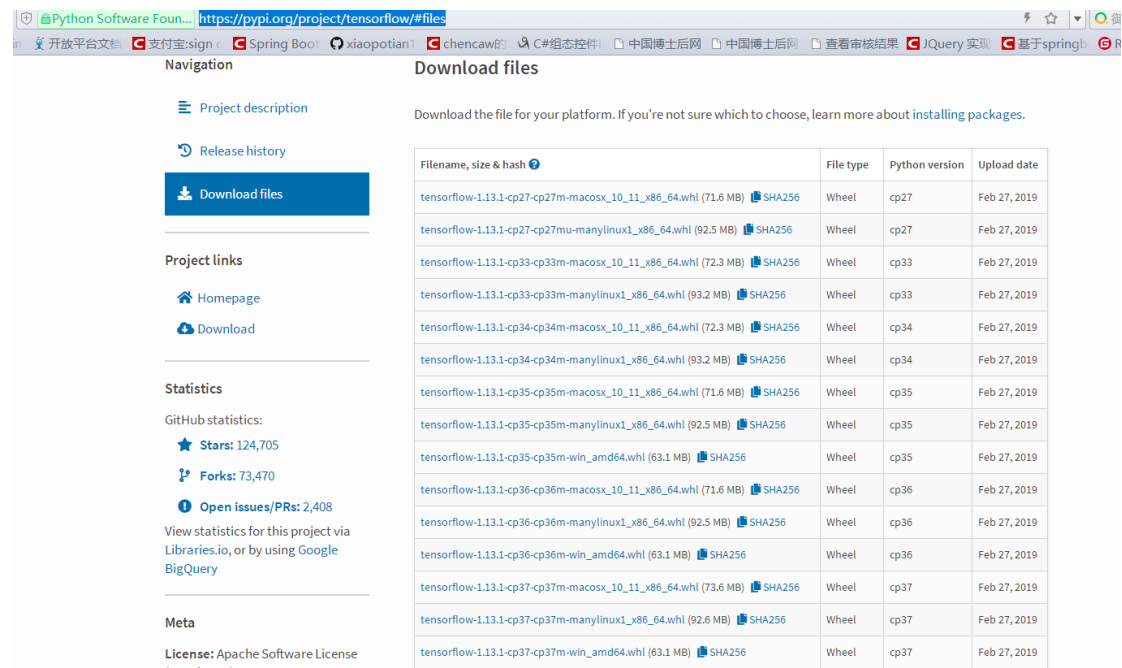
```
cv2.waitKey(0)
```

1.4 Tensorflow 的安装

<https://pypi.org/project/tensorflow/#files>

1、从上网址下载 tensorflow1.13.1

tensorflow-1.13.1-cp37-cp37m-win_amd64.whl (63.1 MB)  SHA256	Wheel	cp37	Feb 27, 2019
---	-------	------	--------------



Filename, size & hash	File type	Python version	Upload date
tensorflow-1.13.1-cp27-cp27m-macosx_10_11_x86_64.whl (71.6 MB) SHA256	Wheel	cp27	Feb 27, 2019
tensorflow-1.13.1-cp27-cp27mu-manylinux1_x86_64.whl (92.5 MB) SHA256	Wheel	cp27	Feb 27, 2019
tensorflow-1.13.1-cp33-cp33m-macosx_10_11_x86_64.whl (72.3 MB) SHA256	Wheel	cp33	Feb 27, 2019
tensorflow-1.13.1-cp33-cp33m-manylinux1_x86_64.whl (93.2 MB) SHA256	Wheel	cp33	Feb 27, 2019
tensorflow-1.13.1-cp34-cp34m-macosx_10_11_x86_64.whl (72.3 MB) SHA256	Wheel	cp34	Feb 27, 2019
tensorflow-1.13.1-cp34-cp34m-manylinux1_x86_64.whl (93.2 MB) SHA256	Wheel	cp34	Feb 27, 2019
tensorflow-1.13.1-cp35-cp35m-macosx_10_11_x86_64.whl (71.6 MB) SHA256	Wheel	cp35	Feb 27, 2019
tensorflow-1.13.1-cp35-cp35m-manylinux1_x86_64.whl (92.5 MB) SHA256	Wheel	cp35	Feb 27, 2019
tensorflow-1.13.1-cp35-cp35m-win_amd64.whl (63.1 MB) SHA256	Wheel	cp35	Feb 27, 2019
tensorflow-1.13.1-cp36-cp36m-macosx_10_11_x86_64.whl (71.6 MB) SHA256	Wheel	cp36	Feb 27, 2019
tensorflow-1.13.1-cp36-cp36m-manylinux1_x86_64.whl (92.5 MB) SHA256	Wheel	cp36	Feb 27, 2019
tensorflow-1.13.1-cp36-cp36m-win_amd64.whl (63.1 MB) SHA256	Wheel	cp36	Feb 27, 2019
tensorflow-1.13.1-cp37-cp37m-macosx_10_11_x86_64.whl (73.6 MB) SHA256	Wheel	cp37	Feb 27, 2019
tensorflow-1.13.1-cp37-cp37m-manylinux1_x86_64.whl (92.6 MB) SHA256	Wheel	cp37	Feb 27, 2019
tensorflow-1.13.1-cp37-cp37m-win_amd64.whl (63.1 MB) SHA256	Wheel	cp37	Feb 27, 2019

2、在 windows 文件夹的路径 中输入 cmd 跳出对话框，输入 pip install tensorflow-1.13.1-cp37-cp37m-win_amd64.whl

```
C:\Windows\System32\cmd.exe
Microsoft Windows [版本 10.0.17134.648]
(c) 2018 Microsoft Corporation。保留所有权利。

G:\soft\python\python3.7>pip install tensorflow-1.13.1-cp37-cp37m-win_amd64.whl_
```

3、安装过程如下

```
C:\Windows\System32\cmd.exe - pip install tensorflow-1.13.1-cp37-cp37m-win_amd64.whl
Microsoft Windows [版本 10.0.17134.648]
(c) 2018 Microsoft Corporation。保留所有权利。

G:\soft\python\python3.7>pip install tensorflow-1.13.1-cp37-cp37m-win_amd64.whl
Processing g:\soft\python\python3.7\tensorflow-1.13.1-cp37-cp37m-win_amd64.whl
Collecting absl-py>=0.1.6 (from tensorflow==1.13.1)
  Downloading https://files.pythonhosted.org/packages/da/3f/9b0355080b81b15ba6a9ffcf1f5ea39e307a2778b1/absl-py-0.7.1.tar.gz (99kB)
    100% |#####| 102kB 40kB/s
Collecting keras-applications>=1.0.6 (from tensorflow==1.13.1)
  Using cached https://files.pythonhosted.org/packages/90/85/64c82949765cfb246bbdaf5aca2d55f400f79265f/Keras_Applications-1.0.7-py2.py3-none-any.whl
Collecting keras-preprocessing>=1.0.5 (from tensorflow==1.13.1)
  Using cached https://files.pythonhosted.org/packages/c0/bf/0315ef6a9fd3fc2346e85b0ff1f5f83ca17073f23/Keras_Preprocessing-1.0.9-py2.py3-none-any.whl
Collecting tensorflow-estimator<1.14.0rc0,>=1.13.0 (from tensorflow==1.13.1)
  Using cached https://files.pythonhosted.org/packages/bb/48/13f49fc3fa0fdf916aa1419013bb8f2ad09674c23/tensorflow_estimator-1.13.0-py2.py3-none-any.whl
Collecting termcolor>=1.1.0 (from tensorflow==1.13.1)
  Using cached https://files.pythonhosted.org/packages/8a/48/a76be51647d0eb9f10e2a4511bf3ffb8cc1e6b141/termcolor-1.1.0.tar.gz
Collecting grpcio>=1.8.6 (from tensorflow==1.13.1)
  Downloading https://files.pythonhosted.org/packages/9c/50/1fd6e3cb2cc0b9f88aa396020b0a831a2e8fb63a4/grpcio-1.19.0-cp37-cp37m-win_amd64.whl (1.5MB)
    57% |#####| 890kB 18kB/s eta 0:00:35
```

4、安装完成后如下所示

未经允许，严禁上传网络！严禁传播、出版和培训；中国计量大学--机电工程学院--陈锡爱，
xachen@cjl.u.edu.cn

```
C:\Windows\System32\cmd.exe
Collecting h5py (from keras-applications>=1.0.6->tensorflow==1.13.1)
  Using cached https://files.pythonhosted.org/packages/4f/1e/89aa610afce8df6fd1f12647600a05e902238587ae6375442a3164b59d5
/h5py-2.9.0-cp37-cp37m-win_amd64.whl
Collecting mock>=2.0.0 (from tensorflow-estimator<1.14.0rc0,>=1.13.0->tensorflow==1.13.1)
  Using cached https://files.pythonhosted.org/packages/e6/35/f187bdf23be87092bd0f1200d43d23076cee4d0dec109f195173fd3ebc7
9/mock-2.0.0-py2.py3-none-any.whl
Collecting markdown>=2.6.8 (from tensorflow-estimator<1.14.0,>=1.13.0->tensorflow==1.13.1)
  Downloading https://files.pythonhosted.org/packages/f5/e4/d8c18f2555add57ff21bf25af36d827145896a07607486cc79a2aea641af
Markdown-3.1-py2.py3-none-any.whl (87kB)
100% |#####| 92kB 40kB/s
Collecting werkzeug>=0.11.15 (from tensorboard<1.14.0,>=1.13.0->tensorflow==1.13.1)
  Downloading https://files.pythonhosted.org/packages/18/79/84f02539cc181c8bf5ff5a41b9f52cae870b6f632767e43ba6ac70132e92
Werkzeug-0.15.2-py2.py3-none-any.whl (328kB)
100% |#####| 337kB 37kB/s
Requirement already satisfied: setuptools in d:\program files\python37\lib\site-packages (from protobuf>=3.6.1->tensorfl
ow==1.13.1) (40.8.0)
Collecting pbr>=0.11 (from mock>=2.0.0->tensorflow-estimator<1.14.0rc0,>=1.13.0->tensorflow==1.13.1)
  Downloading https://files.pythonhosted.org/packages/14/09/12fe9a14237a6b7e0ba3a8d6fcf254bf4b10ec56a0185f73d651145e9222
pbr-5.1.3-py2.py3-none-any.whl (107kB)
100% |#####| 112kB 24kB/s
Installing collected packages: six, absl-py, h5py, keras-applications, keras-preprocessing, pbr, mock, tensorflow-estima
tor, termcolor, grpcio, markdown, protobuf, werkzeug, wheel, tensorboard, astor, gast, tensorflow
Running setup.py install for absl-py ... done
Running setup.py install for termcolor ... done
Running setup.py install for gast ... done
Successfully installed absl-py-0.7.1 astor-0.7.1 gast-0.2.2 grpcio-1.19.0 h5py-2.9.0 keras-applications-1.0.7 keras-prep
rocessing-1.0.9 markdown-3.1 mock-2.0.0 pbr-5.1.3 protobuf-3.7.1 six-1.12.0 tensorboard-1.13.1 tensorflow-1.13.1 tensorf
low-estimator-1.13.0 termcolor-1.1.0 werkzeug-0.15.2 wheel-0.33.1

d:\soft\python\python3.7>
```

5、测试一下是否安装成功

```
Python 3.7.3 Shell
File Edit Shell Debug Options Window
Python 3.7.3 (v3.7.3:ef4ec6ed12, Mar
4) on win32
Type "help", "copyright", "credits"
>>> import tensorflow
>>> |
```

1.5 PyQt5 的安装

在 CMD 中，输入 pip install PyQt5 就可以完成 PyQt5 的安装

```
G:\soft\python\python3.7>pip install PyQt5
Collecting PyQt5
  Using cached https://files.pythonhosted.org/packages/b2/87/219cd547c0deb902edd3f8dbf1af01409f7f9d251344b9154d878203cf84
1/PyQt5-5.12.1-5.12.2-cp35-cp36-cp37-cp38-none-win_amd64.whl
Collecting PyQt5_sip<4.20,>=4.19.14 (from PyQt5)
  Downloading https://files.pythonhosted.org/packages/b9/f6/e23387d13aaca4f3b93d854934ca64086ef8719b245abf9032882a269b54
/PyQt5_sip-4.19.15-cp37-cp37m-win_amd64.whl (51kB)
100% |#####| 61kB 16kB/s
Installing collected packages: PyQt5-sip, PyQt5
Successfully installed PyQt5-5.12.1 PyQt5-sip-4.19.15

G:\soft\python\python3.7>
```