Python Programing

$$\int_{-\infty}^\infty e^{-x^2} = \sqrt{\pi}$$

Start Python command line

```
c:\> py
```

VSCode for Python

The VS Code extension for Python: Python for VSCode.

Write to a file named "guru99.txt"

```
f = open("guru99.txt","w+")
for i in range(10):
     f.write("This is line %d\r\n" % (i+1))

f.close()
```

Execute Python file

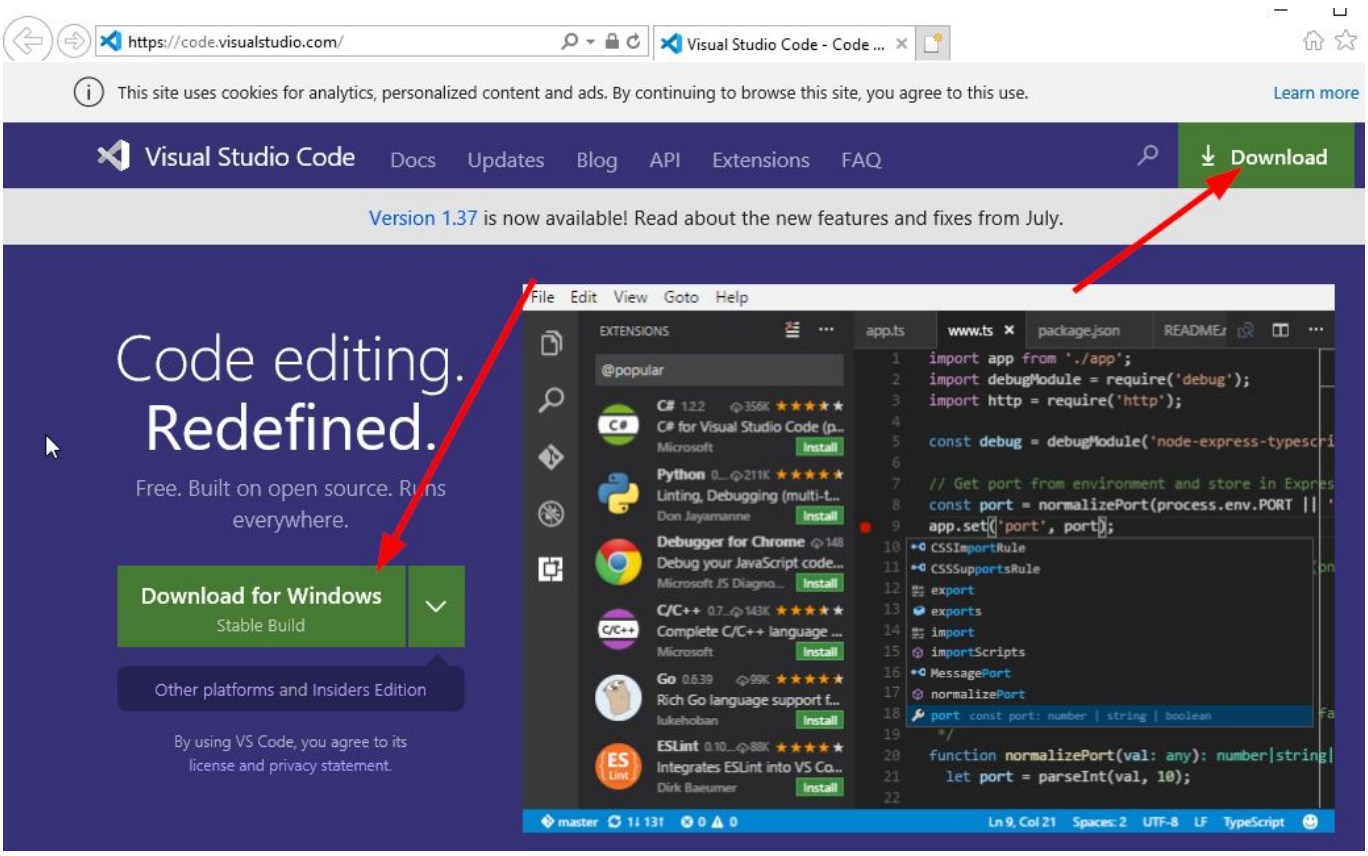
```
c:\> py add.py
c:\> py game.py
right-click mouse, select "Run Python file in terminal."
click triangle on top right
```

import Python module, and use the module

```
>>> import add
>>> import fib
>>> fib.fib(1000)
```

Download Visual Code

Download Visual Code



Start up Visual Code

Python tutorial YouTube

Class

Function

Map, Filter, Reduce

lambda Expression

Tuple

CSV

File

Exception

Random

Recursion

JSON

Function

Lambda Expression

Unit test

Web Django OOP

MongoDB

SQLLite

10 Tips, Tricks

5 mistakes

Help

pyDoc

Decrator

5 Common mistakes

1. name your file as standard library;
2. name your variable as standard function name;

Create a virtual environment

```
PS C:\Users\V801625\workspace\python> py -m venv venv
```

where -m means create a module, first venv is virtual environment, second is the name of the newly created virtual environment.

PS C:\Users\V801625\workspace\python> & c:/Users/V801625/workspace/python/venv/Scripts/activate.ps1
(venv) PS C:\Users\V801625\workspace\python>

where (venv) means the virtual environment is up and running.

Install pip requests

```
(venv) PS C:\Users\V801625\workspace\python> pip install requests
 python -m pip install --upgrade pip
```

Debug

1. Select break point in the code
2. click bug on left tool bar
3. select configuration if no yet
4. click green triangle beside "Debug"

Python.path

Global python installation

```
    {"python.pythonPath":
"C:\\Users\\V801625\\AppData\\Local\\Programs\\Python\\Python37\\python.ex
e",}
```

Local Environment

```
    {"python.pythonPath":
"c:\\Users\\V801625\\workspace\\python\\venv\\Scripts\\python.exe",}
```

Set/Get Environment Variables

```
C:\Users\V801625\workspace\python>set FLASK_APP=flaskblog.py
C:\Users\V801625\workspace\python>echo %FLASK_APP%

PS C:\Users\V801625\workspace\python> Get-ChildItem Env:
```

install database sql package

```
C:\Users\V801625\workspace\python>pip install flask-sqlalchemy
(venv) C:\Users\V801625\workspace\python\Flask_Blog>py
>>> from flaskblog import db
>>> db.create_all()
>>> from flaskblog  import User,Post
>>> user_1 = User(username='John',email='jw@live.com',password='password')
>>> db.session.add(user_1)
>>> user_2 =
User(username='Ailian',email='aw@live.com',password='password')
>>> db.session.add(user_2)
>>> db.session.commit()
>>> User.query.all()
>>> User.query.first()
>>> User.query.filter_by(username='John').all()
>>> User.query.filter_by(username='John').first()
>>> user = User.query.filter_by(username='John').first()
>>> user.id
>>> user.username
>>> user = User.query.get(2)

>>> post1 = Post(title='Blog 1', content='First Post Content',
user_id=user.id)
>>> post2 = Post(title='Blog 2', content='Second Post Content',
user_id=user.id)
>>> db.session.add(post1)
```

```
>>> db.session.add(post2)
>>> db.session.commit()
>>> for post in user.posts:
...     print(post.title)
...
>>> post = Post.query.first()
>>> post
Post('Blog 1', '2019-09-02 12:38:04.828772')
>>> post.id
>>> post.user_id
>>> post.author
User('Ailian', 'aw@live.com', 'default.jpg')
```

MongoDB

Install package

```
(venv) C:\Users\V801625\workspace\python\Flask_Blog>pip install pymongo
```

Run unittest

```
Johns-MacBook-Pro:learnpython wangqianjiang$ python -m unittest
test_circle
```