Python编程新思维及实战

嵩 天

Python常用第三方库解析(下)

嵩天

Python常用第三方库解析(下)

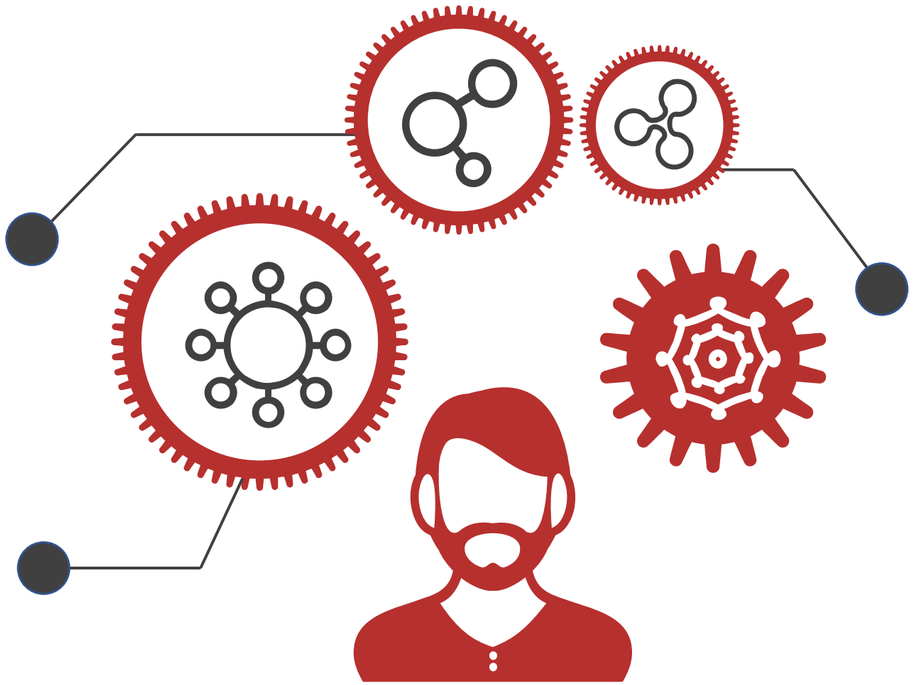
单元开篇

Python123

单元开篇

(1) pipenv库的使用

(2) tabulate库的使用



(3) QRcode库的使用

Python常用第三方库解析(下)

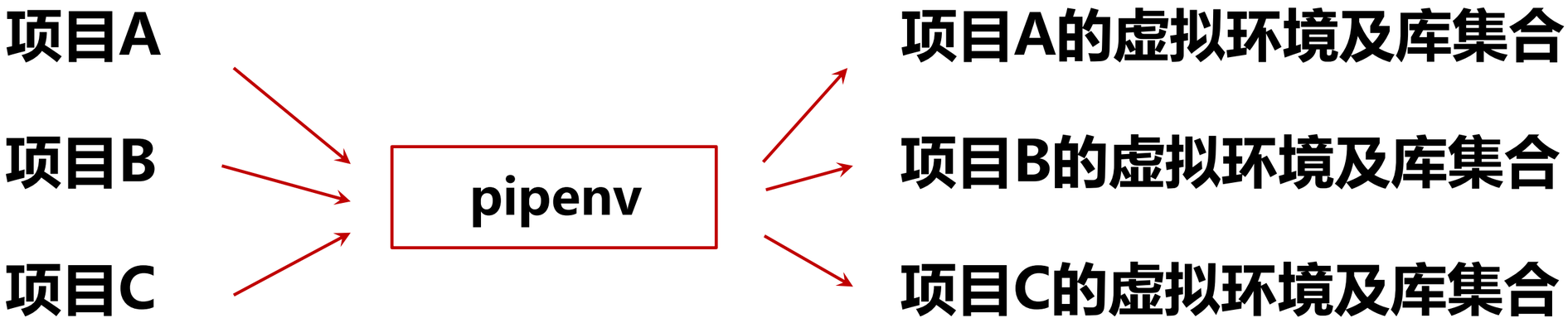
Python常用第三方库解析(下)

pipenv库的使用

Python123

pipenv库介绍

pipenv库提供基于项目的虚拟环境维护及Python库管理功能



https://github.com/pypa/pipenv

pipenv库介绍

pipenv库提供基于项目的虚拟环境维护及Python库管理功能

- 以项目为单位隔离Python环境，进而可以使用不同的Python库版本
- 自动管理所安装Python库及其依赖的其他库
- 命令行工具：基于virtualenv和pip，目前最好用的虚拟环境维护工具

pipenv库安装

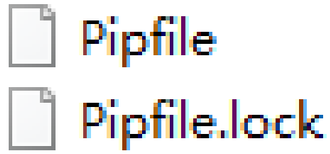
```
pip install pipenv

pip3 install pipenv
```

pipenv库原理

pipenv库使用Pipfile和Pipfile.lock来管理虚拟环境

- Pipfile：记录虚拟环境的信息，尤其是Python库
- Pipfile.lock：锁定Python库版本
- 两个文件共同表达了虚拟环境



pipenv库原理

Pipfile：信息维护为主

```
[[source]]
url = "https://pypi.org/simple"
verify_ssl = true
name = "pypi"

[packages]
jieba = "*"

[dev-packages]

[requires]
python_version = "3.6"
```

记录了虚拟环境的Python库使用情况

不记录版本，任意版本均可

pipenv库原理

Pipfile.lock：以锁定Python库版本为主

```
"default": {
    "jieba": {
        "hashes": [
            "sha256:de385e48582a4862e55a9167334d0fbe91d479026e5dac40e59e22c
            08b8e883e"
        ],
        "index": "pypi",
        "version": "==0.39"
    }
},
```

记录了当前的开发版本

pipenv库详解

创建pEnv目录，一起来操作并跟随使用

```
D:\pEnv
λ pipenv -h
Usage: pipenv [OPTIONS] COMMAND [ARGS]...

Options:
  --where             Output project home information.
  --venv              Output virtualenv information.
  --py                Output Python interpreter information.
  --envs              Output Environment Variable options.
  --rm                Remove the virtualenv.
  --bare              Minimal output.
  --completion        Output completion (to be eval'd).
  --man               Display manpage.
  --three / --two     Use Python 3/2 when creating virtualenv.
  --python TEXT       Specify which version of Python virtualenv should use.
  --site-packages     Enable site-packages for the virtualenv.
  --pypi-mirror TEXT  Specify a PyPI mirror.
  --support           Output diagnostic information for use in Github issues.
  --version           Show the version and exit.
  -h, --help          Show this message and exit.
```

pipenv –h： 显示帮助信息

pipenv库详解

创建pEnv目录，一起来操作并跟随使用

```
D:\pEnv
λ pipenv --venv
No virtualenv has been created for this project yet!
```

pipenv --venv

显示当前目录虚拟环境信息

pipenv库详解

创建pEnv目录，一起来操作并跟随使用

```
D:\pEnv
λ pipenv --three
Creating a virtualenv for this project...
Pipfile: D:\pEnv\Pipfile
Using C:\Users\Tian Song\AppData\Local\Programs\Python\Python36-32\python.exe (3.6
.4) to create virtualenv...
Running virtualenv with interpreter C:\Users\Tian Song\AppData\Local\Programs\Pyth
on\Python36-32\python.exe
Using base prefix 'C:\\Users\\Tian Song\\AppData\\Local\\Programs\\Python\\Python3
6-32'
New python executable in C:\Users\TIANSO~1\VIRTUA~1\PENV-G~1\Scripts\python.exe
Installing setuptools, pip, wheel...done.
Setting project for pEnv-g0vMOMWU to D:\pEnv

Virtualenv location: C:\Users\Tian Song\.virtualenvs\pEnv-g0vMOMWU
Creating a Pipfile for this project...
```

pipenv --three

建立Python 3.x虚拟环境

可以用以下命令替代

pipenv --python 3.6

pipenv库详解

创建pEnv目录，一起来操作并跟随使用

```
D:\pEnv
λ pipenv shell
Launching subshell in virtual environment…

D:\pEnv
(pEnv-g0vMOMWU) λ
```

pipenv shell

进入虚拟环境的命令行

pipenv库详解

创建pEnv目录，一起来操作并跟随使用

```
D:\pEnv
(pEnv-g0vMOMWU) λ pipenv install jieba
Installing jieba...
Collecting jieba
Installing collected packages: jieba
Successfully installed jieba-0.39

Adding jieba to Pipfile's [packages]...
Pipfile.lock not found, creating...
Locking [dev-packages] dependencies...
Locking [packages] dependencies...
Updated Pipfile.lock (a1fefa)!
Installing dependencies from Pipfile.lock (a1fefa)...
  ================================ 1/1 - 00:00:00
```

pipenv install jieba

在虚拟环境中安装第三方库

pipenv库详解

创建pEnv目录，一起来操作并跟随使用

```
D:\pEnv
(pEnv-g0vMOMWU) λ pipenv graph
jieba==0.39
matplotlib==2.2.3
  - cycler [required: >=0.10, installed: 0.10.0]
    - six [required: Any, installed: 1.11.0]
  - kiwisolver [required: >=1.0.1, installed: 1.0.1]
    - setuptools [required: Any, installed: 40.2.0]
  - numpy [required: >=1.7.1, installed: 1.15.1]
  - pyparsing [required: >=2.0.1,!=2.1.6,!=2.1.2,!=2.0.4, installed: 2.2.0]
  - python-dateutil [required: >=2.1, installed: 2.7.3]
    - six [required: >=1.5, installed: 1.11.0]
  - pytz [required: Any, installed: 2018.5]
  - six [required: >=1.10, installed: 1.11.0]
```

pipenv graph

展示虚拟环境中的库依赖

pipenv库详解

创建pEnv目录，一起来操作并跟随使用

```
D:\pEnv
(pEnv-g0vMOMWU) λ pipenv run python a.py
12345.68,12345.678900
1.234568e+04,11101011011110011010001010l,726746425,123456789,75bcd15
123,123456789
```

pipenv run

在虚拟环境中执行程序

命令说明

pipenv包括一批二级指令，用来维护虚拟环境

```
Commands:
  check      Checks for security vulnerabilities and against PEP 508 markers
             provided in Pipfile.
  clean      Uninstalls all packages not specified in Pipfile.lock.
  graph      Displays currently-installed dependency graph information.
  install    Installs provided packages and adds them to Pipfile, or (if none
             is given), installs all packages.
  lock       Generates Pipfile.lock.
  open       View a given module in your editor.
  run        Spawns a command installed into the virtualenv.
  shell      Spawns a shell within the virtualenv.
  sync       Installs all packages specified in Pipfile.lock.
  uninstall  Un-installs a provided package and removes it from Pipfile.
  update     Runs lock, then sync.
```

pipenv -h

pipenv库小结

pipenv库使用Pipfile和Pipfile.lock来管理虚拟环境

```
Commands:
  check      Checks for security vulnerabilities and against PEP 508 markers
             provided in Pipfile.
  clean      Uninstalls all packages not specified in Pipfile.lock.
  graph      Displays currently-installed dependency graph information.
  install    Installs provided packages and adds them to Pipfile, or (if none
             is given), installs all packages.
  lock       Generates Pipfile.lock.
  open       View a given module in your editor.
  run        Spawns a command installed into the virtualenv.
  shell      Spawns a shell within the virtualenv.
  sync       Installs all packages specified in Pipfile.lock.
  uninstall  Un-installs a provided package and removes it from Pipfile.
  update     Runs lock, then sync.
```

Python常用第三方库解析(下)

tabulate库的使用

Python123

tabulate库介绍

tabulate库提供优雅打印表格数据的功能

```
>>> from tabulate import tabulate
>>> ls = [["北京", 100, 98.2], ["上海", 98, 97.1], ["广州", 95, 89.1]]
>>> ls
[['北京', 100, 98.2], ['上海', 98, 97.1], ['广州', 95, 89.1]]
>>> print(tabulate(ls))
--  ---  ----
北京  100  98.2
上海   98  97.1
广州   95  89.1
--  ---  ----
```

tabulate库介绍

tabulate库提供优雅打印表格数据的功能

- 支持二维列表、二维迭代类型、字典迭代等类型
- 支持NumPy二维数组、pandas.DataFrame类型
- 输出表格可以通过参数自定义风格

https://bitbucket.org/astanin/python-tabulate

tabulate库详解

tabulate库只有一个函数tabulate()

一般采用如下引用方式

```
from tabulate import tabulate
```

tabulate库详解

tabulate(table)

- table：表格数据或变量

```
>>> print(tabulate(ls))
--   ---   ----
北京   100   98.2
上海    98   97.1
广州    95   89.1
--   ---   ----
```

tabulate库详解

tabulate(table, headers)

```
>>> print(tabulate(ls, headers=["城市", "政治分", "经济分"]))
城市      政治分    经济分
----  -----  -----
北京      100   98.2
上海       98   97.1
广州       95   89.1
```

- table : 表格数据或变量
- headers : 定义表格的表头

tabulate库详解

tabulate(table, headers, tablefmt)

- table : 表格数据或变量
- headers : 定义表格的表头
- tablefmt : 定义表格风格

- "plain"
- "simple"
- "grid"
- "fancy_grid"
- "pipe"
- "orgtbl"
- "jira"
- "presto"
- "psql"
- "rst"
- "mediawiki"
- "moinmoin"
- "youtrack"
- "html"
- "latex"
- "latex_raw"
- "latex_booktabs"
- "textile"

tabulate库详解

tabulate(table, headers, tablefmt)

- table：表格数据或变量
- headers：定义表格的表头
- tablefmt：定义表格风格

```
>>> print(tabulate(ls, tablefmt="jira"))
| 北京 | 100 | 98.2 |
| 上海 |  98 | 97.1 |
| 广州 |  95 | 89.1 |
```

tabulate库详解

tabulate(table, headers, tablefmt , numalign)

- table : 表格数据或变量
- headers : 定义表格的表头
- tablefmt : 定义表格风格
- numalign : 设置全表格数字的对齐方式，默认智能对齐

```
>>> print(tabulate(ls, numalign="left"))
--  ---  ----
北京  100  98.2
上海  98   97.1
广州  95   89.1
--  ---  ----
```

tabulate库小结

```
from tabulate import tabulate

tabulate(table, headers, tablefmt , numalign)
```

更多使用参见官方文档

Python常用第三方库解析(下)

QRcode库的使用

Python123

QRcode库介绍

QRcode库提供二维码生成功能

- 支持各类种类数据的二维码生成

https://github.com/lincolnloop/python-qrcode

QRcode库详解

img = make(txt, border=4)

- txt：待转变为二维码的字符串或字节串等
- border：设置二维码边的宽度
- img：一个PIL库类型的图像句柄

QRcode库实例

```
import qrcode
img = qrcode.make('http://python123.io')
img.save("qr.png")
```

Python常用第三方库解析(下)

单元小结

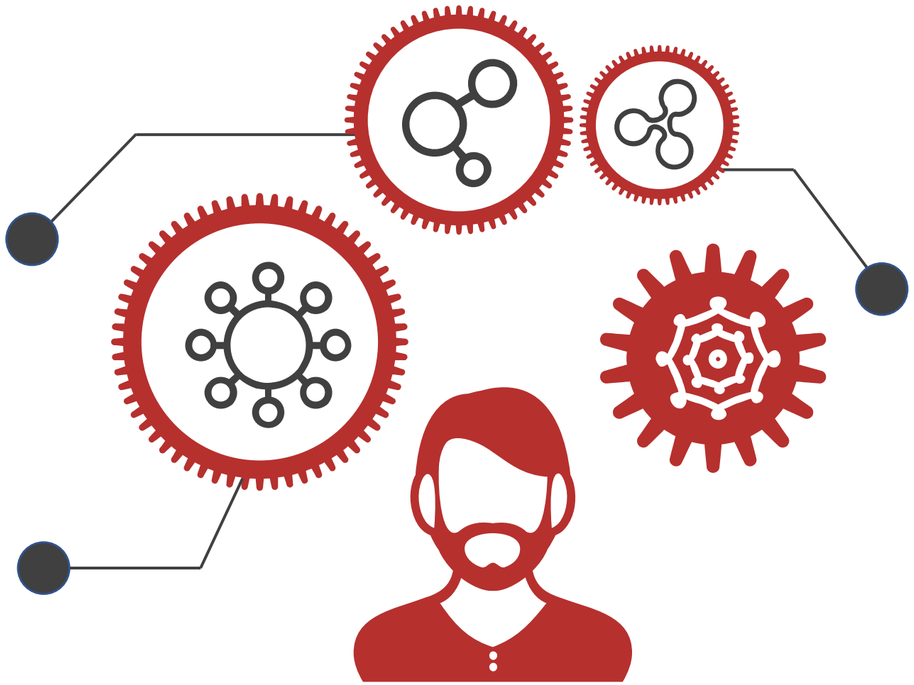
单元小结

(1) pipenv库的使用

Pipfile、Pipfile.lock、一批指令

(2) tabulate库的使用

tabulate(table)、headers等参数



(3) QRcode库的使用

make()函数

Python常用第三方库解析(下)

pipenv库小结

pipenv库使用Pipfile和Pipfile.lock来管理虚拟环境

```
Commands:
  check      Checks for security vulnerabilities and against PEP 508 markers
             provided in Pipfile.
  clean      Uninstalls all packages not specified in Pipfile.lock.
  graph      Displays currently-installed dependency graph information.
  install    Installs provided packages and adds them to Pipfile, or (if none
             is given), installs all packages.
  lock       Generates Pipfile.lock.
  open       View a given module in your editor.
  run        Spawns a command installed into the virtualenv.
  shell      Spawns a shell within the virtualenv.
  sync       Installs all packages specified in Pipfile.lock.
  uninstall  Un-installs a provided package and removes it from Pipfile.
  update     Runs lock, then sync.
```

tabulate库小结

```
from tabulate import tabulate

tabulate(table, headers, tablefmt , numalign)
```

更多使用参见官方文档


Python 123
Thank you