

HomeWork2 程序运行说明

opencv

两道题都有对应的演示视频

1 曲线拟合

对应python文件lm.py (有可视化图形和终端输出)

初始值的选取, 通过在指定区间内遍历选取。

依赖项: 需要安装numpy和matplotlib包

```
1. import numpy as np
2. import matplotlib.pyplot as plt
```

结果展示如下:

```
# lee@xiaobai in ~/code/opencv3 [23:57:11]
$ python lm.py
error: 150904.442863, a_best: 50.000000, b_best: 50.000000
error: 147927.560299, a_best: 50.000000, b_best: 53.000000
error: 146791.357363, a_best: 50.000000, b_best: 53.500000
error: 142503.827966, a_best: 50.000000, b_best: 56.000000
error: 139509.826643, a_best: 50.000000, b_best: 56.500000
error: 138442.673742, a_best: 50.000000, b_best: 57.000000
error: 138386.510856, a_best: 50.000000, b_best: 58.500000
error: 138087.515112, a_best: 50.000000, b_best: 59.000000
error: 137885.346881, a_best: 50.000000, b_best: 59.500000
error: 124192.621715, a_best: 50.000000, b_best: 60.000000
error: 119903.917475, a_best: 50.000000, b_best: 62.500000
error: 117144.078337, a_best: 50.000000, b_best: 72.500000
error: 91014.432429, a_best: 50.000000, b_best: 73.000000
error: 76680.990342, a_best: 50.000000, b_best: 73.500000
error: 56182.772289, a_best: 50.000000, b_best: 99.000000
error: 16472.301007, a_best: 50.000000, b_best: 99.500000
error: 39.670126, a_best: 50.001673, b_best: 99.999739
('Algorithm Run Done!The best estimate of a,b is : ', 50.001672861893972, 99.999739440702896)
```

2 加分题

台阶问题对应python文件C
采用动态规划思想编写。

结果展示如下:

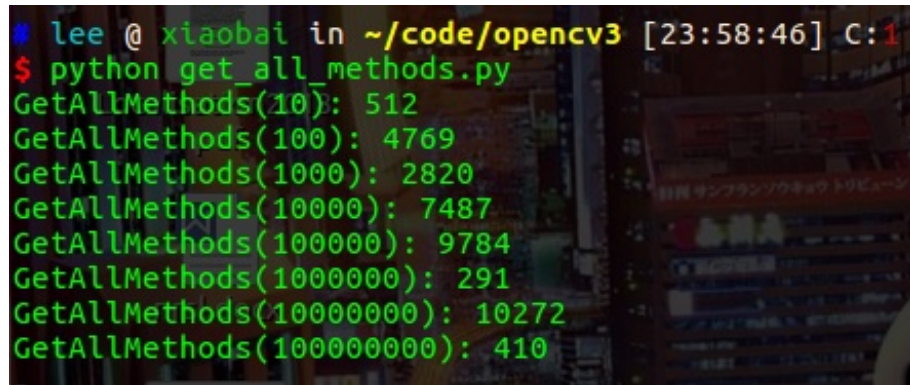
```
# lee @ xiaobai in ~
$ python get_all_met
GetAllMethods(10): 5
GetAllMethods(100):
GetAllMethods(1000):
GetAllMethods(10000):
GetAllMethods(100000):
GetAllMethods(1000000):
```

2 加分题

台阶问题对应python文件GetAllMethods.py (有终端输出)

采用动态规划思想编写。

结果展示如下：



```
* lee @ xiaobai in ~/code/opencv3 [23:58:46] C:1
$ python get_all_methods.py
GetAllMethods(10): 512
GetAllMethods(100): 4769
GetAllMethods(1000): 2820
GetAllMethods(10000): 7487
GetAllMethods(100000): 9784
GetAllMethods(1000000): 291
GetAllMethods(10000000): 10272
GetAllMethods(100000000): 410
```

3 运行说明

分别执行两个python文件即可。