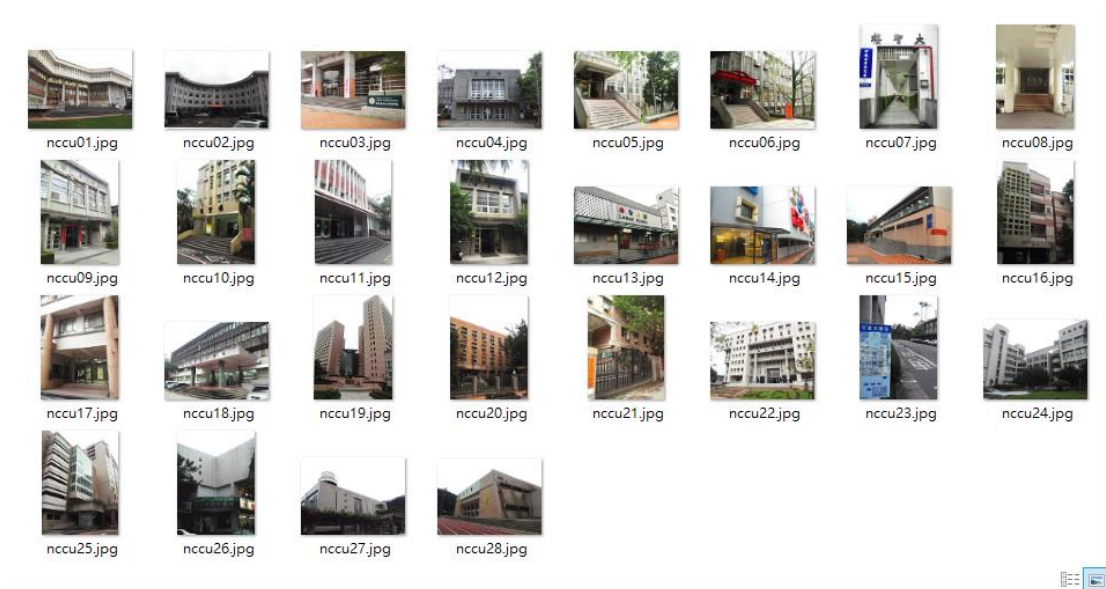


Object-Oriented Programming

2018/10/05

1. 改變圖片名稱

作業說明：將「政大」資料夾內的圖片名稱依序改變為 nccu01.jpg、nccu02.jpg、nccu03.jpg、nccu04.jpg.....（如果不是兩位數必須補零）
成果範例：



提示：open()、os.listdir()、write()、close()

繳交名稱：(q1.py)/(q1.ipynb)及「政大」資料夾

2. 合併 CSV

作業說明：將「air」資料夾內的所有 csv 內容合併為一個 csv 檔，檔案名稱為 AirQuality.csv

成果範例：

AirQuality.csv	
2017/12/30	temp, 0.1, 0.7, 0.5, 0.9, 0.3, 0.7, 1.1, 4.1, 7.2, 2.2, 1.8, 0.4, 4.3, 4.5, 4.4, 4.3, 2.8, 2.4, 2.7, 3.2, 2.9, 2.8, 2.5
2017/12/31	amb, temp, 17.17, 17.17, 18.18, 17.17, 17.18, 18.20, 21.20, 20.19, 18.18, 17.17, 16.16, 16.16, 16
2017/12/31	co, 0.18, 0.31, 0.28, 0.23, 0.21, 0.2, 0.25, 0.25, 0.37, 0.43, 0.49, 0.57, 0.76, 0.82, 0.89, 0.83, 0.82, 0.83, 0.74, 0.67, 0.57, 0.51, 0.48, 0.41
2017/12/31	mo, 0.8, 1.3, 1.2, 1.0, 7.0, 8.0, 8.0, 1.2, 2.1, 2.6, 2.3, 1.8, 1.7, 1.4, 1.7, 1.6, 1.4, 1.1, 1.1, 1.1, 0.7, 1.0, 0
2017/12/31	wd, 9.4, 9.6, 7.9, 6.4, 6.4, 6.7, 6.4, 7.5, 5.9, 1.8, 5.9, 7.1, 12.1, 13.1, 14.1, 13.1, 12.0, 9.5, 9.6
2017/12/31	hwm, 10.9, 9.9, 9.1, 7.6, 6.1, 6.6, 7.2, 8.2, 11.12, 11.11, 11.12, 15.15, 15.15, 16.14, 14.12, 11.10, 9.5
2017/12/31	pr, 26.24, 26.24, 39.39, 34.34, 35.25, 29.29, 35.41, 52.52, 53.48, 47.47, 42.39, 32.27, 29.31, 31.32
2017/12/31	pr, rain, 0.0
2017/12/31	phl, 50.45, 46.34, 29.19, 29.32, 30.44, 44.44, 68.72, 127.186, 248.232, 201.155, 127.89, 73.88, 61.52
2017/12/31	psc, 5.32, 31.24, 24.14, 27.24, 26.22, 10.21, 47.79, 106.114, 113.103, 86.49, 59.53, 41.40
2017/12/31	rainfall, 0.0
2017/12/31	rair, cond, 0.0
2017/12/31	rh, 90.90, 90.90, 86.82, 83.83, 88.88, 89.73, 65.55, 55.55, 56.57, 60.64, 65.66, 67.67, 67.67, 65.66
2017/12/31	so2, 1.9, 2.1, 2.3, 2.2, 2.2, 2.2, 2.2, 2.3, 2.4, 2.4, 2.9, 3.3, 4.2, 4.2, 3.5, 3.2, 5.2, 5.2, 4.2, 4.2, 6.2, 7
2017/12/31	wd, 15.7, 9.18, 12.13, 8.7, 9.4, 6.4, 6.4, 6.4, 11.2, 6.18, 2.7, 3.2, 4.3, 4.3, 4.3, 4.3, 1.1, 1.5, 4.3, 6.4, 10
2017/12/31	wind, 10.6, 9.18, 6.17, 2.5, 3.6, 9.2, 7.14, 359.356, 0.4, 5.9, 7.5, 6.5, 2.8, 6.359, 6.3, 1.3, 6.6, 10
2017/12/31	wind, 2.4, 1.8, 4.3, 2.2, 2.6, 4.6, 10.2, 7.4, 4.6, 2.6, 4.6, 2.6, 5.4, 4.4, 4.2, 3.8, 3.2, 3.7
2017/12/31	wd, 2.1, 2.1, 3.3, 3.3, 3.2, 3.3, 3.3, 4.7, 4.4, 4.4, 4.9, 6.1, 5.3, 5.4, 5.5, 4.7, 4.1, 4.1, 3.9, 3.9, 3.2, 9.3, 2
2017/12/31	hwm, 10.9
2017/01/01	amb, temp, 19.15, 18.18, 20.20, 22.24, 26.27, 27.26, 26.26, 22.21, 21.20, 20.20
2017/01/01	co, 0.74, 0.79, 0.45, 0.48, 0.53, 0.52, 0.54, 0.36, 0.45, 0.56, 0.52, 0.49, 0.45, 0.51, 0.62, 0.61, 0.44, 0.59
2017/01/01	mo, 4.14, 1.1
2017/01/01	wd, 23.23, 21.21, 19.19, 17.17, 1.5, 6.5, 8.5, 6.13, 15.15, 16.17, 18.17, 22.22, 22
2017/01/01	hwm, 37.37, 30.30, 28.28, 11.8, 6.4, 13.17, 15.18, 24.20, 21.22, 28.28, 28.27
2017/01/01	pr, 1.56, 1.56, 1.64, 1.64, 1.44, 1.44, 1.44, 1.44, 1.44, 1.44, 1.44, 1.44, 1.44, 1.44, 1.44, 1.44, 1.44, 1.44, 1.44, 1.44, 1.44, 1.44
2017/01/01	phl, 89.71, 70.71, 47.55, 44.40, 38.31, 33.43, 43.55, 67.69, 99.94, 75.77, 56.92, 56.94
2017/01/01	psc, 5.67, 40.21, 32.36, 28.21, 8.1, 19.22, 24.31, 41.47, 74.61, 80.28, 59.38, 44.49, 37
2017/01/01	rainfall, 0.0
2017/01/01	rh, 90.91, 91.91, 88.88, 76.46, 60.56, 60.44, 47.75, 81.85, 84.86, 90.90, 90
2017/01/01	so2, 3.2, 7.2, 5.2, 2.68, 3.6, 2.8, 3.1, 4.1, 4.1, 4.6, 6.9, 7.8, 4.3, 3.9, 3.2, 4.7, 4.1, 3.9, 3.3
2017/01/01	temp, 0.0
2017/01/01	wd, 178.178, 178.120, 120.120, 428.44, 56.56, 18.31, 351.351, 356.323, 329.303, 233.289, 147.292, 138
2017/01/01	wind, 178.178
2017/01/01	wind, 0.0
2017/01/01	wd, 0.8
2017/01/01	amb, temp, 20.20, 20.20, 20.19, 19.19, 20.20, 22.24, 26.27, 26.26, 22.21, 21.20, 20.20, 19
2017/01/02	co, 0.51, 0.46, 0.44, 0.38, 0.37, 0.39, 0.41, 0.46, 0.39, 0.36, 0.4, 0.42, 0.41, 0.3, 0.35, 0.29, 0.3, 0.4, 0.52, 0.57, 0.54, 0.45, 0.59
2017/01/02	hwm, 18.13, 12.6, 7.3, 9.2, 13.13, 11.6, 7.4, 8.4, 9.5, 10.10, 11.9, 7.15, 24.25, 25.27, 25, 21
2017/01/02	hwm, 23.17, 16.7, 2.8, 11.14, 18.14, 14.9, 9.9, 11.12, 12.12, 13.12, 17.17, 20.20, 27.30, 32, 27
2017/01/02	pr, 1.14
2017/01/02	phl, 113.127, 124.110, 89.82, 79.72, 49.55, 59.44, 68.72, 69.76, 72.70, 71.81, 84.84, 88.86
2017/01/02	psc, 5.59, 40.47, 71.60, 67.48, 43.30, 37.45, 51.44, 39.37, 30.30, 42.55, 65.62, 52
2017/01/02	rainfall, 0.0
2017/01/02	rh, 90.91, 91.91, 90.90, 81.80, 90.89, 75.73, 68.41, 64.70, 72.70, 75.75, 81.84, 87.89, 88
2017/01/02	so2, 2.9, 2.2, 2.1, 1.1, 1.9, 2.3, 2.6, 2.8, 2.5, 2.5, 2.8, 4.6, 4.2, 5.8, 4.4, 2.7, 2.3, 4.4, 3.4, 2.8
2017/01/02	temp, 0.0
2017/01/02	wd, 133.179, 147.105, 49.45, 44.35, 44.40, 40.31, 3.34, 346.344, 4.2, 357.11, 22.18, 64.107, 132.77
2017/01/02	wind, 140.176, 113.89, 40.47, 30.29, 75.80, 42.336, 336.41, 14.11, 23.22, 3.6, 18.90, 170.152, 82
2017/01/02	wind, 0.1, 1.1
2017/01/02	wd, 0.6, 0.5, 1.1, 1.1, 0.9, 0.7, 0.7, 0.9, 1.1, 1.7, 1.6, 0.8, 1.2, 0.7, 1.0, 0.8, 0.8, 0.6, 0.3, 0.4, 0.7, 0.3
2017/01/02	amb, temp, 19.18, 19.19, 19.19, 20.22, 24.26, 27.26, 26.26, 24.24, 22.21, 21.20, 20
2017/01/02	co, 0.42, 0.38, 0.4, 0.45, 0.42, 0.42, 0.35, 0.47, 0.44, 0.33, 0.34, 0.37, 0.43, 0.48, 0.42, 0.41, 0.47, 0.54, 0.43, 0.45, 0.52, 0.43, 0.41
2017/01/03	mo, 4.9, 6.4, 6.4, 3.2, 3.7, 3.8, 18.17, 4.9, 4.3, 8.7, 3.7, 3.7, 4.2, 3.3, 3.3, 4.3, 7.3, 7.6, 6.1, 4.3, 3.5

提示：os.listdir()、os.rename()

繳交名稱：(q2.py)/(q2.ipynb)及(AirQuality.csv)

3.

作業說明：取出「air」資料夾內的所有測站資料中每天 8:00~17:00 中 PM2.5 觀測值，並整合成一個 csv 檔，名稱為 AirQuality2.csv

※內容範例：

2017/01/01, 崙背, PM2.5, 25, 45, 59, 76, 72, 72, 56, 43, 23, 28

2017/01/02, 崙背, PM2.5, 53, 62, 62, 61, 40, 26, 27, 34, 42, 44

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2017/12/30, 麥寮, PM2.5, 48, 61, 62, 58, 49, 37, 30, 36, 37, 27

2017/12/31, 麥寮, PM2.5, 21, 24, 30, 44, 72, 90, 95, 95, 94, 82

成果範例：



63	2017/03/04, 崙背, PM2.5, 39, 36, 45, 46, 47, 40, 37, 40, 45
64	2017/03/05, 崙背, PM2.5, 76, 60, 60, 60, 36, 36, 19, 20, 37
65	2017/03/06, 崙背, PM2.5, 8, 5, 5, 11, 17, 16, 17, 24, 27, 27
66	2017/03/07, 崙背, PM2.5, 27, 29, 26, 24, 33, 38, 39, 37, 31
67	2017/03/08, 崙背, PM2.5, 25, 29, 39, 40, 39, 43, 54, 51, 42, 37
68	2017/03/09, 崙背, PM2.5, 44, 55, 51, 51, 43, 34, 39, 51, 51
69	2017/03/10, 崙背, PM2.5, 114, 119, 118, 103, 84, 75, 94, 85, 42, 27
70	2017/03/11, 崙背, PM2.5, 22, 20, 17, 30, 31, 42, 23, 19, 12
71	2017/03/12, 崙背, PM2.5, 41, 52, 46, 55, 52, 40, 40, 53, 84
72	2017/03/13, 崙背, PM2.5, 57, 44, 37, 38, 39, 30, 23, 24, 36, 40
73	2017/03/14, 崙背, PM2.5, 9, 10, 10, 10, 11, 19, 24, 35
74	2017/03/15, 崙背, PM2.5, 24, 24, 19, 29, 31, 42, 47, 37, 42, 44
75	2017/03/16, 崙背, PM2.5, 19, 20, 24, 24, 24, 24, 27, 31, 35
76	2017/03/17, 崙背, PM2.5, 28, 35, 29, 27, 24, 24, 23, 24, 29, 24
77	2017/03/18, 崙背, PM2.5, 55, 57, 55, 49, 46, 41, 43, 36, 40, 42
78	2017/03/19, 崙背, PM2.5, 40, 40, 40, 35, 31, 33, 32, 39, 25, 24
79	2017/03/20, 崙背, PM2.5, 35, 40, 45, 52, 53, 48, 46, 46, 37, 31
80	2017/03/21, 崙背, PM2.5, 44, 44, 50, 43, 45, 50, 50, 50, 30, 37
81	2017/03/22, 崙背, PM2.5, 31, 24, 39, 37, 39, 32, 42, 49, 51, 44
82	2017/03/23, 崙背, PM2.5, 14, 10, 10, 14, 17, 21, 21, 16, 17, 18
83	2017/03/24, 崙背, PM2.5, 17, 19, 29, 23, 29, 24, 38, 36, 36
84	2017/03/25, 崙背, PM2.5, 26, 25, 19, 16, 17, 18, 18, 22, 25, 25
85	2017/03/26, 崙背, PM2.5, 17, 25, 44, 51, 42, 45, 41, 39, 45
86	2017/03/27, 崙背, PM2.5, 46, 33, 23, 21, 29, 38, 39, 35, 35, 36
87	2017/03/28, 崙背, PM2.5, 40, 59, 59, 55, 54, 40, 40, 29, 40, 33
88	2017/03/29, 崙背, PM2.5, 54, 62, 63, 50, 50, 43, 41, 46, 43, 51
89	2017/03/30, 崙背, PM2.5, 46, 73, 39, 38, 34, 40, 55, 56, 56, 58
90	2017/03/31, 崙背, PM2.5, 75, 65, 56, 50, 41, 25, 26, 27, 24
91	2017/04/01, 崙背, PM2.5, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15
92	2017/04/02, 崙背, PM2.5, 42, 46, 40, 55, 58, 61, 59, 63, 55
93	2017/04/03, 崙背, PM2.5, 47, 42, 42, 35, 40, 43, 49, 39, 36, 33
94	2017/04/04, 崙背, PM2.5, 40, 41, 39, 41, 20, 24, 20, 30, 30, 31
95	2017/04/05, 崙背, PM2.5, 53, 46, 41, 43, 53, 56, 56, 30, 23, 32
96	2017/04/06, 崙背, PM2.5, 49, 50, 50, 59, 61, 38, 55, 50, 49, 55
97	2017/04/07, 崙背, PM2.5, 33, 30, 29, 24, 29, 28, 23, 23, 24, 20
98	2017/04/08, 崙背, PM2.5, 33, 31, 27, 29, 24, 27, 17, 15, 15, 13
99	2017/04/09, 崙背, PM2.5, 16, 20, 17, 20, 23, 21, 25, 20, 19
100	2017/04/10, 崙背, PM2.5, 20, 24, 24, 28, 19, 9, 9, 9, 15
101	2017/04/11, 崙背, PM2.5, 23, 23, 19, 16, 15, 13, 13, 16, 13
102	2017/04/12, 崙背, PM2.5, 14, 16, 15, 20, 21, 23, 24, 22, 15, 12
103	2017/04/13, 崙背, PM2.5, 55, 49, 49, 40, 41, 47, 41, 39, 29, 10
104	2017/04/14, 崙背, PM2.5, 41, 46, 39, 34, 48, 48, 47, 16, 14
105	2017/04/15, 崙背, PM2.5, 46, 43, 50, 64, 49, 37, 49, 43, 37, 31
106	2017/04/16, 崙背, PM2.5, 59, 52, 37, 36, 33, 22, 15, 10, 12, 19
107	2017/04/17, 崙背, PM2.5, 41, 25, 34, 28, 40, 19, 17, 6, 4, 4
108	2017/04/18, 崙背, PM2.5, 11, 9, 13, 13, 10, 16, 16, 37, 27, 37
109	2017/04/19, 崙背, PM2.5, 61, 61, 55, 45, 40, 40, 38, 44, 36, 33
110	2017/04/20, 崙背, PM2.5, 40, 46, 38, 40, 44, 27, 23, 29, 24, 21
111	2017/04/21, 崙背, PM2.5, 14, 10, 14, 21, 19, 11, 10, 16, 16, 19
112	2017/04/22, 崙背, PM2.5, 11, 14, 13, 14, 19, 16, 11, 9, 12, 18
113	2017/04/23, 崙背, PM2.5, 27, 24, 32, 34, 39, 34, 36, 32, 25, 33
114	2017/04/24, 崙背, PM2.5, 52, 55, 53, 49, 49, 13, 38, 52, 47, 47
115	2017/04/25, 崙背, PM2.5, 47, 59, 44, 40, 20, 32, 47, 44
116	2017/04/26, 崙背, PM2.5, 95, 95, 87, 87, 87, 24, 19, 23, 19, 20
117	2017/04/27, 崙背, PM2.5, 12, 12, 5, 7, 5, 13, 19, 32, 30, 26
118	2017/04/28, 崙背, PM2.5, 22, 24, 26, 29, 31, 39, 32, 26, 21, 19
119	2017/04/29, 崙背, PM2.5, 24, 24, 24, 23, 33, 23, 14, 23, 24

提示：os.listdir()、split()

繳交名稱：(q3.py)/(q3.ipynb)及(AirQuality2.csv)

作業繳交方式：將所有內容壓縮至一個壓縮檔上傳

壓縮檔名稱：學號_姓名_日期

EX：104207436_張易甦_20181005