

Excel中的数据

| | A | B | C | D | E | F |
|----|------------------------------------|--------|--------|--------|--------|-----------|
| 1 | 由邢不行整理，2020新版 Python数字货币量化投资课程示例文件 | | | | | |
| 2 | candle_begin_time | open | high | low | close | volume |
| 3 | 2020-03-02 00:06:00+00:00 | 8509.2 | 8509.2 | 8499.2 | 8499.2 | 25.300171 |
| 4 | 2020-03-02 00:07:00+00:00 | 8499.2 | 8507.8 | 8499.2 | 8505.9 | 23.88238 |
| 5 | 2020-03-02 00:08:00+00:00 | 8505.9 | 8516.6 | 8505.6 | 8516.3 | 26.381863 |
| 6 | 2020-03-02 00:09:00+00:00 | 8516.2 | 8524.2 | 8515.1 | 8518.8 | 11.171636 |
| 7 | 2020-03-02 00:10:00+00:00 | 8518.9 | 8518.9 | 8508.7 | 8517 | 12.040533 |
| 8 | 2020-03-02 00:11:00+00:00 | 8516.9 | 8521.1 | 8516.2 | 8519.1 | 28.42881 |
| 9 | 2020-03-02 00:12:00+00:00 | 8519.1 | 8519.1 | 8512.3 | 8514.9 | 8.4824463 |
| 10 | 2020-03-02 00:13:00+00:00 | 8514.9 | 8520.1 | 8513.7 | 8520 | 4.1147711 |
| 11 | 2020-03-02 00:14:00+00:00 | 8520 | 8523.1 | 8519.2 | 8523.1 | 38.90774 |
| 12 | 2020-03-02 00:15:00+00:00 | 8523 | 8526.8 | 8523 | 8526.5 | 29.033615 |
| 13 | 2020-03-02 00:16:00+00:00 | 8526.5 | 8526.6 | 8510.2 | 8522.0 | 12.405017 |

DataFrame在终端的样子

| | | open | high | low | close | volume |
|-------------------|----------------|--------|--------|--------|--------|-----------|
| candle_begin_time | | | | | | |
| 2020-03-02 | 00:06:00+00:00 | 8509.2 | 8509.2 | 8499.2 | 8499.2 | 25.300171 |
| 2020-03-02 | 00:07:00+00:00 | 8499.2 | 8507.8 | 8499.2 | 8505.9 | 23.882380 |
| 2020-03-02 | 00:08:00+00:00 | 8505.9 | 8516.6 | 8505.6 | 8516.3 | 26.381863 |
| 2020-03-02 | 00:09:00+00:00 | 8516.2 | 8524.2 | 8515.1 | 8518.8 | 11.171636 |
| 2020-03-02 | 00:10:00+00:00 | 8518.9 | 8518.9 | 8508.7 | 8517.0 | 12.040533 |
| ... | | ... | ... | ... | ... | ... |
| 2020-03-02 | 23:55:00+00:00 | 8892.2 | 8906.5 | 8891.4 | 8898.8 | 59.016808 |
| 2020-03-02 | 23:56:00+00:00 | 8898.8 | 8906.7 | 8898.0 | 8898.2 | 47.985437 |

DataFrame

| | | open | high | low | close | volume |
|-------------------|----------------|--------|--------|--------|--------|-----------|
| candle_begin_time | | | | | | |
| 2020-03-02 | 00:06:00+00:00 | 8509.2 | 8509.2 | 8499.2 | 8499.2 | 25.300171 |
| 2020-03-02 | 00:07:00+00:00 | 8499.2 | 8507.8 | 8499.2 | 8505.9 | 23.882380 |
| 2020-03-02 | 00:08:00+00:00 | 8516.6 | 8516.6 | 8505.6 | 8516.3 | 26.381863 |
| 2020-03-02 | 00:09:00+00:00 | 8524.2 | 8524.2 | 8515.1 | 8518.8 | 11.171636 |
| 2020-03-02 | 00:10:00+00:00 | 8518.9 | 8518.9 | 8508.7 | 8517.0 | 12.040533 |
| ... | ... | ... | ... | ... | ... | ... |
| 2020-03-02 | 23:55:00+00:00 | 8892.2 | 8906.5 | 8891.4 | 8898.8 | 59.016808 |
| 2020-03-02 | 23:56:00+00:00 | 8898.8 | 8906.7 | 8898.0 | 8898.2 | 47.985437 |

1. 开盘价、最高价等列的名字，都被称作是column

DataFrame

| | | open | high | low | close | volume |
|-------------------|----------------|--------|--------|--------|--------|-----------|
| candle_begin_time | | | | | | |
| 2020-03-02 | 00:06:00+00:00 | 8509.2 | 8509.2 | 8499.2 | 8499.2 | 25.300171 |
| 2020-03-02 | 00:07:00+00:00 | 8499.2 | 8507.8 | 8499.2 | 8505.9 | 23.882380 |
| 2020-03-02 | 00:08:00+00:00 | 8505.6 | 8516.3 | 8505.6 | 8516.3 | 26.381863 |
| 2020-03-02 | 00:09:00+00:00 | 8515.1 | 8518.8 | 8515.1 | 8518.8 | 11.171636 |
| 2020-03-02 | 00:10:00+00:00 | 8508.7 | 8517.0 | 8508.7 | 8517.0 | 12.040533 |
| ... | | ... | ... | ... | ... | ... |
| 2020-03-02 | 23:55:00+00:00 | 8892.2 | 8906.5 | 8891.4 | 8898.8 | 59.016808 |
| 2020-03-02 | 23:56:00+00:00 | 8898.8 | 8906.7 | 8898.0 | 8898.2 | 47.985437 |

2. 'candle_begin_time'这一列，是行的名字，被称作是index

DataFrame

| | | open | high | low | close | volume |
|-------------|----------------|--------|--------|--------|--------|-----------|
| candlestick | begin_time | | | | | |
| 2020-03-02 | 00:06:00+00:00 | 8509.2 | 8509.2 | 8499.2 | 8499.2 | 25.300171 |
| 2020-03-02 | 00:07:00+00:00 | 8499.2 | 8507.8 | 8499.2 | 8505.9 | 23.882380 |
| 2020-03-02 | 00:08:00+00:00 | 8505.6 | 8516.3 | 8505.6 | 8516.3 | 26.381863 |
| 2020-03-02 | 00:09:00+00:00 | 8515.1 | 8518.8 | 8515.1 | 8518.8 | 11.171636 |
| 2020-03-02 | 00:10:00+00:00 | 8518.7 | 8517.0 | 8518.7 | 8517.0 | 12.040533 |
| ... | ... | ... | ... | ... | ... | ... |
| 2020-03-02 | 23:55:00+00:00 | 8892.2 | 8906.5 | 8891.4 | 8898.8 | 59.016808 |
| 2020-03-02 | 23:56:00+00:00 | 8898.8 | 8906.7 | 8898.0 | 8898.2 | 47.985437 |

3. column和index分别作为列和行的名字，被统称为这个表格的label

DataFrame

| | | open | high | low | close | volume |
|-----|---------------------------|--------|--------|--------|--------|-----------|
| | candle_begin_time | 0 | 1 | 2 | 3 | 4 |
| 0 | 2020-03-02 00:06:00+00:00 | 8509.2 | 8509.2 | 8499.2 | 8499.2 | 25.300171 |
| 1 | 2020-03-02 00:07:00+00:00 | 8499.2 | 8507.8 | 8499.2 | 8505.9 | 23.882380 |
| 2 | 2020-03-02 00:08:00+00:00 | | | | | |
| 3 | 2020-03-02 00:09:00+00:00 | | | | | |
| 4 | 2020-03-02 00:10:00+00:00 | | | | | |
| ... | | | | | | |
| | 2020-03-02 23:55:00+00:00 | | | | | |
| | 2020-03-02 23:56:00+00:00 | 8898.8 | 8906.7 | 8898.0 | 8898.2 | 47.985437 |

4. 除了label之外，也可以将整个表格理解为一个矩阵，矩阵有行列编号。这个编号叫position，可以通过position来定位某个元素，比如[1, 3]就是8505.9