Selection Using DatetimeIndex

The **DatetimeIndex** can be used to select the observations of the dataset in various interesting ways. For example, we can select the observation of an exact day or the observations belonging to a particular month or year. The selected observation can be subsetted by columns and grouped to give more insight in understanding the dataset.

Let's see some examples.

Select a Particular Date

Let's select a particular date from a DataFrame.

```
# select a particular date
data['2018-01-05'].head()
'Output':
                    slug  symbol          name  ranknow      open    high  \
date
2018-01-05       bitcoin    BTC        Bitcoin        1  15477.20  17705.20
2018-01-05      ethereum    ETH       Ethereum        2    975.75   1075.39
2018-01-05        ripple    XRP         Ripple        3      3.30      3.56
2018-01-05  bitcoin-cash    BCH   Bitcoin Cash        4   2400.74   2648.32
2018-01-05       cardano    ADA        Cardano        5      1.17      1.25

                     low         close       volume       market  \
date
2018-01-05  15202.800000  17429.500000  23840900000  259748000000
2018-01-05    956.330000    997.720000   6683150000   94423900000
2018-01-05      2.830000      3.050000   6288500000  127870000000
2018-01-05   2370.590000   2584.480000   2115710000   40557600000
2018-01-05      0.903503      0.999559    508100000   30364400000

            close_ratio   spread
date
2018-01-05       0.8898  2502.40
2018-01-05       0.3476   119.06
2018-01-05       0.3014     0.73
2018-01-05       0.7701   277.73
2018-01-05       0.2772     0.35
```

```
# select a range of dates
data['2018-01-05':'2018-01-06'].head()
'Output':
                slug symbol     name  ranknow      open      high     low  \
date
2018-01-05  bitcoin    BTC   Bitcoin        1  15477.20  17705.20  15202.80
2018-01-06  bitcoin    BTC   Bitcoin        1  17462.10  17712.40  16764.60
2018-01-05  ethereum   ETH  Ethereum        2    975.75   1075.39    956.33
2018-01-06  ethereum   ETH  Ethereum        2    995.15   1060.71    994.62
2018-01-05  ripple     XRP    Ripple        3      3.30      3.56      2.83

               close      volume       market  close_ratio   spread
date
2018-01-05  17429.50  23840900000  259748000000       0.8898  2502.40
2018-01-06  17527.00  18314600000  293091000000       0.8044   947.80
2018-01-05    997.72   6683150000   94423900000       0.3476   119.06
2018-01-06   1041.68   4662220000   96326500000       0.7121    66.09
2018-01-05      3.05   6288500000  127870000000       0.3014     0.73
```

Select a Month

Let's select a particular month from a DataFrame.

```
# select a particular month
data['2018-01'].head()
'Output':
               slug    symbol     name  ranknow     open     high     low \
date
2018-01-01  bitcoin       BTC  Bitcoin        1  14112.2  14112.2  13154.7
2018-01-02  bitcoin       BTC  Bitcoin        1  13625.0  15444.6  13163.6
2018-01-03  bitcoin       BTC  Bitcoin        1  14978.2  15572.8  14844.5
2018-01-04  bitcoin       BTC  Bitcoin        1  15270.7  15739.7  14522.2
2018-01-05  bitcoin       BTC  Bitcoin        1  15477.2  17705.2  15202.8
```

```
               close       volume        market  close_ratio  spread
date
2018-01-01  13657.2  10291200000  236725000000       0.5248   957.5
2018-01-02  14982.1  16846600000  228579000000       0.7972  2281.0
2018-01-03  15201.0  16871900000  251312000000       0.4895   728.3
2018-01-04  15599.2  21783200000  256250000000       0.8846  1217.5
2018-01-05  17429.5  23840900000  259748000000       0.8898  2502.4
```

Select a Year

Let's select a particular year from a DataFrame.

```
# select a particular year
data['2018'].head()
'Output':
                slug symbol     name  ranknow     open     high  low  \
date
2018-01-01  bitcoin    BTC  Bitcoin        1  14112.2  14112.2  13154.7
2018-01-02  bitcoin    BTC  Bitcoin        1  13625.0  15444.6  13163.6
2018-01-03  bitcoin    BTC  Bitcoin        1  14978.2  15572.8  14844.5
2018-01-04  bitcoin    BTC  Bitcoin        1  15270.7  15739.7  14522.2
2018-01-05  bitcoin    BTC  Bitcoin        1  15477.2  17705.2  15202.8

               close       volume        market  close_ratio  spread
date
2018-01-01  13657.2  10291200000  236725000000       0.5248   957.5
2018-01-02  14982.1  16846600000  228579000000       0.7972  2281.0
2018-01-03  15201.0  16871900000  251312000000       0.4895   728.3
2018-01-04  15599.2  21783200000  256250000000       0.8846  1217.5
2018-01-05  17429.5  23840900000  259748000000       0.8898  2502.4
```

Subset Data Columns and Find Summaries

Get the closing prices of Bitcoin stocks for the month of January.