CHAPTER 11 PANDAS

	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':
```

0 d. op d. o										
	slug	symbol	nan	ne ra	nknow	open	hi	gh	low	\
date										
2018-01-01	bitcoin	ВТС	Bitcoi	in	1	14112.2	14112	. 2	1315	4.7
2018-01-02	bitcoin	ВТС	Bitcoi	in	1	13625.0	15444	.6	1316	3.6
2018-01-03	bitcoin	ВТС	Bitcoi	in	1	14978.2	15572	.8	1484	4.5
2018-01-04	bitcoin	ВТС	Bitcoi	in	1	15270.7	15739	.7	1452	2.2
2018-01-05	bitcoin	ВТС	Bitcoi	in	1	15477.2	17705	. 2	1520	2.8
	close	v	olume		marke	t close	_ratio	sp	read	
date										
2018-01-01	13657.2	102912	00000	23672	500000	0 (0.5248	9	57.5	
2018-01-02	14982.1	168466	00000	22857	900000	0 (0.7972	22	81.0	
2018-01-03	15201.0	168719	00000	25131.	200000	0	0.4895	7	28.3	
2018-01-04	15599.2	217832	00000	25625	000000	0	0.8846	12	17.5	
2018-01-05	17429.5	238409	00000	25974	800000	0 (0.8898	25	02.4	

Subset Data Columns and Find Summaries

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

```
data.loc[data.slug == 'bitcoin', 'close']['2018-01']
'Output':
date
2018-01-01
            13657.2
           14982.1
2018-01-02
2018-01-03
            15201.0
2018-01-04 15599.2
2018-01-05 17429.5
2018-01-06
            17527.0
2018-01-07 16477.6
2018-01-08 15170.1
2018-01-09
            14595.4
2018-01-10
             14973.3
```

Find the mean market value of Ethereum for the month of January.

```
data.loc[data.slug == 'ethereum', 'market']['2018-01'].mean()
'Output':
96739480000.0
```

Resampling Datetime Objects

A Pandas DataFrame with an index of **DatetimeIndex**, **PeriodIndex**, or **TimedeltaIndex** can be resampled to any of the date time frequencies from seconds, to minutes, to months. Let's see some examples.

Let's get the average monthly closing values for Litecoin.

```
data.loc[data.slug == 'bitcoin', 'close'].resample('M').mean().head()
'Output':
date
2013-04-30     139.250000
2013-05-31     119.993226
2013-06-30     107.761333
2013-07-31     90.512258
2013-08-31     113.905161
Freq: M, Name: close, dtype: float64
```