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## Exercise 3.1

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*Objectives:*

- Define a simple class

*Files Modified:* `stock.py`

In [Exercise 1.5](#), you defined a simple class `Stock` for representing a holding of stock. In this exercise, we're simply going to add a few features to that class as well as write some utility functions.

### (a) Adding a new method

Add a new method `sell(nshares)` to `Stock` that sells a certain number of shares by decrementing the share count. Have it work like this:

```
>>> s = Stock('GOOG', 100, 490.10)
>>> s.shares
100
>>> s.sell(25)
>>> s.shares
75
>>>
```

### (b) Reading a portfolio

Add a function `read_portfolio()` to your `stock.py` program that reads a file of portfolio data into a list of `Stock` objects. Here's how it should work:

```
>>> portfolio = read_portfolio('Data/portfolio.csv')
>>> for s in portfolio:
    print(s)

<__main__.Stock object at 0x3902f0>
<__main__.Stock object at 0x390270>
<__main__.Stock object at 0x390330>
<__main__.Stock object at 0x390370>
<__main__.Stock object at 0x3903b0>
<__main__.Stock object at 0x3903f0>
<__main__.Stock object at 0x390430>
>>>
```

You already wrote a similar function as part of [Exercise 2.3](#). Design discussion: Should `read_portfolio()` be a separate function or part of the class definition?

## (c) Printing a Table

Table the data read in part (b) and use it to make a nicely formatted table. For example:

```
>>> portfolio = read_portfolio('Data/portfolio.csv')
>>> for s in portfolio:
    print('%10s %10d %10.2f' % (s.name, s.shares, s.price))

      AA          100       32.20
      IBM           50       91.10
      CAT          150       83.44
     MSFT          200       51.23
       GE           95       40.37
     MSFT           50       65.10
      IBM          100       70.44

>>>
```

Take this code and put it in a function `print_portfolio()` that produces the same output, but additionally adds some table headers. For example:

```
>>> portfolio = read_portfolio('Data/portfolio.csv')
>>> print_portfolio(portfolio)
      name      shares      price
-----
      AA          100       32.20
      IBM           50       91.10
      CAT          150       83.44
     MSFT          200       51.23
       GE           95       40.37
     MSFT           50       65.10
      IBM          100       70.44

>>>
```

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