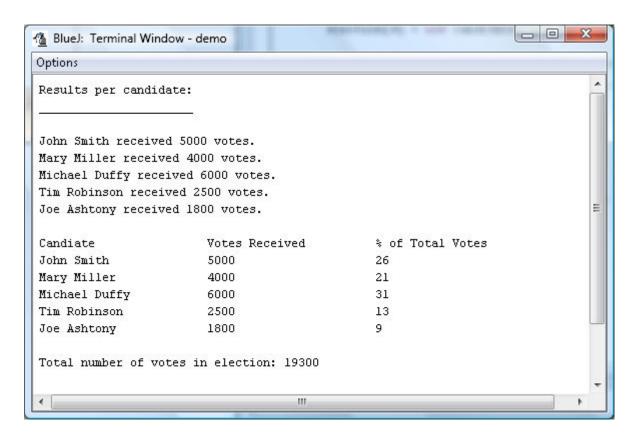# 16.01 Assignment Instructions

Instructions: For this assignment, you are going to use traversal methods.

1. Create a folder called **16.01 Assignment** in your module 16 assignments folder.
2. Create a class called **Candidate**.
   a. Candidate will need instance variables **name** and **numVotes** (of types **String** and **int**, respectively).
   b. Candidate will need appropriate methods and constructors. Make sure to have a **toString()** method that prints the name of the Candidate along with the number of votes.
   c. Save the class as **Candidate.java**.
3. Create a class called **TestCandidate** and save it as **TestCandidate.java**.
   a. Make sure that you create an array called **election**. Add the following Candidates with their votes:

Candidate	Vote
John Smith	5000
Mary Miller	4000
Michael Duffy	6000
Tim Robinson	2500
Joe Ashtony	1800

   b. Create a method called **printVotes()** that traverses through the array and prints out each element.
   c. Create a method called **getTotal()** that traverses through the array and counts the total of the votes for all Candidates. It should return that number.
   d. Create a method called **printResults()** that traverses through the array and creates a table with columns for Candidate name, followed by votes received, and then percentage of total votes (you can round these values). Note that this method will need to call **getTotal()** to use in constructing the third column. After printing the table, print a line showing the total number of votes for all Candidates.
   e. Test your methods. Your output should be similar to that shown below:

```
BlueJ: Terminal Window - demo
Options

Results per candidate:
_____

John Smith received 5000 votes.
Mary Miller received 4000 votes.
Michael Duffy received 6000 votes.
Tim Robinson received 2500 votes.
Joe Ashtony received 1800 votes.

Candiate              Votes Received        % of Total Votes
John Smith            5000                  26
Mary Miller           4000                  21
Michael Duffy         6000                  31
Tim Robinson          2500                  13
Joe Ashtony           1800                  9

Total number of votes in election: 19300
```

4. Now create a class **TestCandidate2** and save it as **TestCandidate2**.**java**.
    a. Create the same items as for **TestCandidate**; however, use an ArrayList instead.
    b. Output should still look the same as for **TestCandidate**.