Test Results

Testing Randomness

To show the randomness of the program below is three traces with the same values entered for each parameter. As you can see each trace is different, all ending in different results and votes being generated and registered in different orders.

```
Enter Number of Booths(2 or more):
4
Enter Number of Voters(1 or more):
8
Enter Number of Officers (between 1 - 3):
2
Enter Number of Candidates:
4

Voter:    0        Candidate: 2     Booth: 3
Officer: 1         Candidate: 2     Voter: 0
Voter:    1        Candidate: 2     Booth: 1
Voter:    2        Candidate: 1     Booth: 2
Officer: 0         Candidate: 2     Voter: 1
Voter:    3        Candidate: 0     Booth: 0
Officer: 1         Candidate: 1     Voter: 2
Voter:    4        Candidate: 3     Booth: 1
Officer: 0         Candidate: 0     Voter: 3
Voter:    5        Candidate: 3     Booth: 2
Officer: 1         Candidate: 3     Voter: 4
Officer: 0         Candidate: 3     Voter: 5
Voter:    6        Candidate: 0     Booth: 3
Voter:    7        Candidate: 2     Booth: 0
Officer: 0         Candidate: 0     Voter: 6
Officer: 1         Candidate: 2     Voter: 7

Candidate ID: 0 Votes: 2
Candidate ID: 1 Votes: 1
Candidate ID: 2 Votes: 3
Candidate ID: 3 Votes: 2

Winner:
Candidate ID: 2 Votes: 3
Do you want to restart? Press 'y' and enter for Yes:
```

```
Enter Number of Booths(2 or more):
4
Enter Number of Voters(1 or more):
8
Enter Number of Officers (between 1 - 3):
2
Enter Number of Candidates:
4

Voter:    0        Candidate: 0     Booth: 2
Voter:    1        Candidate: 3     Booth: 1
Officer: 0         Candidate: 0     Voter: 0
Officer: 1         Candidate: 3     Voter: 1
Voter:    2        Candidate: 0     Booth: 0
Voter:    3        Candidate: 1     Booth: 3
Officer: 1         Candidate: 0     Voter: 2
Officer: 0         Candidate: 1     Voter: 3
Voter:    4        Candidate: 1     Booth: 2
Officer: 1         Candidate: 1     Voter: 4
Voter:    5        Candidate: 0     Booth: 3
Voter:    6        Candidate: 0     Booth: 0
Voter:    7        Candidate: 3     Booth: 1
Officer: 0         Candidate: 0     Voter: 5
Officer: 1         Candidate: 0     Voter: 6
Officer: 0         Candidate: 3     Voter: 7

Candidate ID: 0 Votes: 4
Candidate ID: 1 Votes: 2
Candidate ID: 2 Votes: 0
Candidate ID: 3 Votes: 2

Winner:
Candidate ID: 0 Votes: 4
Do you want to restart? Press 'y' and enter for Yes:
```

```
C:\WINDOWS\system32\cmd.exe                              —    □    ×

Enter Number of Booths(2 or more):
4
Enter Number of Voters(1 or more):
8
Enter Number of Officers (between 1 - 3):
2
Enter Number of Candidates:
4

Voter:   0        Candidate: 1    Booth: 1
Voter:   1        Candidate: 1    Booth: 3
Officer: 1        Candidate: 1    Voter: 0
Officer: 0        Candidate: 1    Voter: 1
Voter:   2        Candidate: 3    Booth: 2
Voter:   3        Candidate: 3    Booth: 0
Officer: 0        Candidate: 3    Voter: 2
Officer: 1        Candidate: 3    Voter: 3
Voter:   4        Candidate: 3    Booth: 0
Officer: 0        Candidate: 3    Voter: 4
Voter:   5        Candidate: 2    Booth: 1
Voter:   6        Candidate: 0    Booth: 3
Officer: 1        Candidate: 2    Voter: 5
Voter:   7        Candidate: 2    Booth: 2
Officer: 0        Candidate: 0    Voter: 6
Officer: 1        Candidate: 2    Voter: 7

Candidate ID: 0 Votes: 1
Candidate ID: 1 Votes: 2
Candidate ID: 2 Votes: 2
Candidate ID: 3 Votes: 3

Winner:
Candidate ID: 3 Votes: 3
Do you want to restart? Press 'y' and enter for Yes:
```

Testing Draw

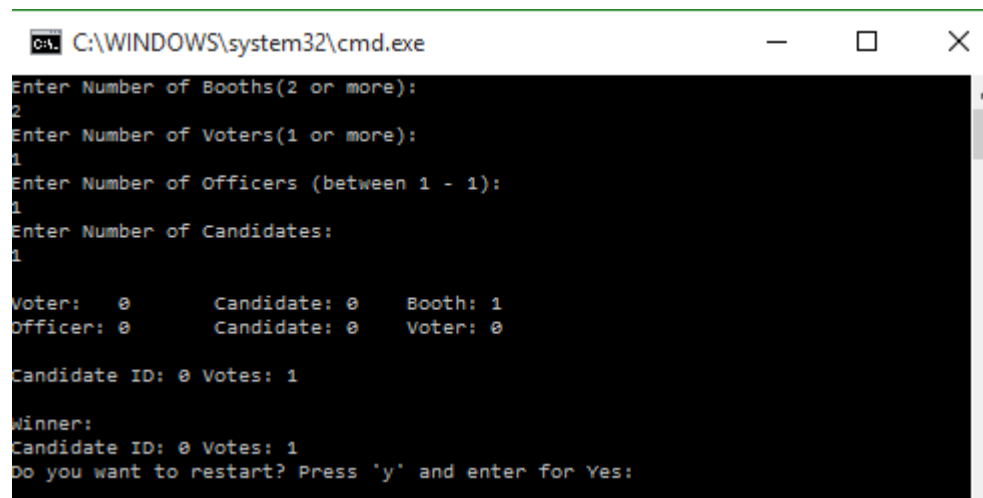This shows what is output when two or more candidates have the same number of votes.

```
C:\WINDOWS\system32\cmd.exe                              —    □    ×

Enter Number of Booths(2 or more):
2
Enter Number of Voters(1 or more):
2
Enter Number of Officers (between 1 - 1):
1
Enter Number of Candidates:
2

Voter:   0        Candidate: 0    Booth: 0
Officer: 0        Candidate: 0    Voter: 0
Voter:   1        Candidate: 1    Booth: 1
Officer: 0        Candidate: 1    Voter: 1

Candidate ID: 0 Votes: 1
Candidate ID: 1 Votes: 1

Draw Between:
Candidate ID: 0 Votes: 1
Candidate ID: 1 Votes: 1
Do you want to restart? Press 'y' and enter for Yes:
```

Lowest possible Values

This shows the program running with the lowest possible values that can be entered for each parameter. Booths must be 2 or more as there has to be less officers than booths.

```
C:\WINDOWS\system32\cmd.exe                          —    □    ×

Enter Number of Booths(2 or more):
2
Enter Number of Voters(1 or more):
1
Enter Number of Officers (between 1 - 1):
1
Enter Number of Candidates:
1

Voter:   0        Candidate: 0      Booth: 1
Officer: 0        Candidate: 0      Voter: 0

Candidate ID: 0 Votes: 1

Winner:
Candidate ID: 0 Votes: 1
Do you want to restart? Press 'y' and enter for Yes:
```

Large Values

This shows that the program can handle larger values for each parameter.

```
C:\WINDOWS\system32\cmd.exe                              —    □    ✕

Enter Number of Booths(2 or more):
10
Enter Number of Voters(1 or more):
20
Enter Number of Officers (between 1 - 9):
8
Enter Number of Candidates:
4

Voter:   0        Candidate: 3     Booth: 9
Voter:   1        Candidate: 0     Booth: 7
Officer: 6        Candidate: 3     Voter: 0
Officer: 3        Candidate: 0     Voter: 1
Voter:   2        Candidate: 0     Booth: 5
Officer: 0        Candidate: 0     Voter: 2
Voter:   3        Candidate: 1     Booth: 3
Officer: 2        Candidate: 1     Voter: 3
Voter:   4        Candidate: 2     Booth: 2
Voter:   5        Candidate: 3     Booth: 4
Officer: 4        Candidate: 2     Voter: 4
Officer: 1        Candidate: 3     Voter: 5
Voter:   6        Candidate: 0     Booth: 0
Officer: 3        Candidate: 0     Voter: 6
Voter:   7        Candidate: 2     Booth: 8
Officer: 7        Candidate: 2     Voter: 7
Voter:   8        Candidate: 0     Booth: 1
Officer: 0        Candidate: 0     Voter: 8
Voter:   9        Candidate: 3     Booth: 6
Officer: 5        Candidate: 3     Voter: 9
Voter:   10       Candidate: 2     Booth: 9
Officer: 4        Candidate: 2     Voter: 10
Voter:   11       Candidate: 0     Booth: 7
Officer: 6        Candidate: 0     Voter: 11
Voter:   12       Candidate: 2     Booth: 2
Officer: 7        Candidate: 2     Voter: 12
Voter:   13       Candidate: 1     Booth: 8
Officer: 4        Candidate: 1     Voter: 13
Voter:   14       Candidate: 3     Booth: 5
Officer: 5        Candidate: 3     Voter: 14
Voter:   15       Candidate: 3     Booth: 6
Officer: 0        Candidate: 3     Voter: 15
Voter:   16       Candidate: 3     Booth: 0
Officer: 3        Candidate: 3     Voter: 16
Voter:   17       Candidate: 3     Booth: 3
Voter:   18       Candidate: 1     Booth: 9
Officer: 2        Candidate: 3     Voter: 17
Officer: 1        Candidate: 1     Voter: 18
Voter:   19       Candidate: 3     Booth: 1
Officer: 6        Candidate: 3     Voter: 19

Candidate ID: 0 Votes: 5
Candidate ID: 1 Votes: 3
Candidate ID: 2 Votes: 4
Candidate ID: 3 Votes: 8

Winner:
Candidate ID: 3 Votes: 8
Do you want to restart? Press 'y' and enter for Yes:
```