

## 3.5.4

## Determine Candidates' Percentage of Votes

**With** the total votes and each candidate's votes in hand, you can now calculate the percentage of votes each candidate received. You feel confident doing this because you've been doing so performing mathematical operations.

Now that we have the total number of votes as well as the number of votes each candidate received, our next task is to calculate the percentage of votes for each candidate. This means we need to divide the candidate's vote count by the total vote count, and then multiply by 100. Here's the equation:

```
vote_percentage = (votes / total_votes) * 100
```

The votes are the values of each `candidate_name` in the `candidate_votes` dictionary. To get a percentage, we need to convert `votes` and `total_votes` to floating-point decimal numbers because the `votes` in the dictionary and the `total_votes` are integers.

To retrieve the votes for each candidate and get the percentage of votes, follow these steps:

1. Use a `for` loop to iterate through the `candidate_options = []` list. We will get the candidate's name.
2. Use the `for` loop variable to retrieve the votes of the candidate from the `candidate_votes = {}` dictionary.
3. Calculate the percentage of the vote count.
4. Print each candidate and the percentage of votes using f-string formatting.

Add the following code below to your script after `candidate_votes[candidate_name] += 1` and make it flush with the left margin. Here's how this code might look.

```
# Determine the percentage of votes for each candidate by looping through the counts.  
# 1. Iterate through the candidate list.
```

```
for candidate_name in candidate_votes:  
    # 2. Retrieve vote count of a candidate.  
    votes = candidate_votes[candidate_name]  
    # 3. Calculate the percentage of votes.  
    vote_percentage = float(votes) / float(total_votes) * 100  
    # 4. Print the candidate name and percentage of votes.  
    print(f"{candidate_name}: received {vote_percentage}% of the vote.")
```

Save and run the file.

## FINDING

After executing the code, the `PyPoll.py` output will be:

```
Charles Casper Stockham: received 23.04854332167558% of the vote  
Diana DeGette: received 73.81224794501652% of the vote.  
Raymon Anthony Doane: received 3.1392087333079077% of the vote
```

## SKILL DRILL

Modify the f-string print statement in Step 4 (print the candidate name and percentage of votes) so the percentage is formatted to one decimal place.