



Queries III

WV Senate Problem

Topics

- Use grouping in a query
- Use IIF function in a calculated field
- Set criteria on fields not displayed in query results
- Use an outer join in a query

Background Information

This project includes information on West Virginia Senate elections from 2000 to 2014.

Instructions

IMPORTANT: This assignment requires the Windows version of Microsoft 365. macOS users can access a ready-to-use version through Windows Virtual Desktop by following the instructions at <https://cs101.wvu.edu/wvd>.

IMPORTANT: Complete the steps below in the order they are given. Completing the steps out of order may complicate the assignment or result in an incorrect result.

1. Download and extract the provided Data Files ZIP file. It contains the following file for use in this assignment:
 - a. **senate_ppq3_wvsp.accdb** – Information on West Virginia Senate elections [1]–[5].

Table: <i>Candidates</i>		
Field Name	Type	Description
CandidateID	AutoNumber	Primary key. Unique identifier for the candidate.
CandidateFirst	Short Text	First name of candidate.
CandidateLast	Short Text	Last name of candidate.
ServedInHouse	Yes/No	If yes, the candidate has served in the West Virginia House of Delegates.

Table: <i>Districts</i>		
Field Name	Type	Description
District	Number	Part of composite key. Number of State Senate district.
RedistrictingCycle	Number	Part of composite key. Census data year used for redistricting.
Counties	Short Text	List of counties or parts of counties in the district.
Population	Number	Population of district.



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Table: <i>ElectionCandidates</i>		
Field Name	Type	Description
ElectionCandidateID	AutoNumber	Primary key.
Seat	Short Text	Seat up for election.
Year	Number	Year of election.
CandidateID	Number	Unique identifier for the candidate.
PartyAbbrev	Short Text	Abbreviation of party name.
Contributions	Currency	Amount of money contributed to the candidate's campaign.
Expenditures	Currency	Amount of money spent by the candidate's campaign.
VotesReceived	Number	Number of votes received by the candidate.
Incumbent	Yes/No	If yes, candidate was an incumbent in the election.

Table: <i>Elections</i>		
Field Name	Type	Description
Seat	Short Text	Part of composite key. Seat up for election.
Year	Number	Part of composite key. Year of election.
District	Number	Number of State Senate district.
RedistrictingCycle	Number	Redistricting cycle this election used.
WinnerPctg	Percentage	Percentage of the total received by the winning candidate.
IncumbentRetired	Yes/No	If yes, incumbent did not run for re-election.

Table: <i>Parties</i>		
Field Name	Type	Description
PartyAbbrev	Short Text	Primary key. Abbreviation of party name.
PartyName	Short Text	Full text of political party name.

Table: <i>AnalysisQuestions</i>		
Field Name	Type	Description
QuestionNumber	Short Text	Primary key. Question being answered.
Response	Long Text	Response to the analysis question prompt.

2. Open the **senate_ppq3_wvsp.accdb** database in Microsoft Access.
3. There is nothing to do for this step. Please proceed to the next step.
4. There is nothing to do for this step. Please proceed to the next step.



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5. Create separate queries to provide the information requested below. Name each query after the step in which it appears (e.g., the name the query in Step 5a as *Query5A*).

HINT: Run your queries to test them. Make sure that they display all and only the records that you would expect to appear.



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Use grouping in a query / Use IIF function in a calculated field

- a. We wish to calculate the number of candidates each party fielded for each election. Create a query listing, for each year, the full name of each political party, the number of candidates from that party, and an indication if that party contested all of the available seats.

A party contested all of the available seats if they had 17 candidates running in a given year. You can determine whether or not a party contested all of the available seats using the formula:

```
IIf (Count ([Candidates.District])=17, "True", "False")
```

HINT: Since we are providing the count function in the formula for the calculated field, please change the **Total** line to *Expression* for the all seats contested calculated field.

HINT: This query will show 31 records and 4 fields.

Set criteria on fields not displayed in query results

- b. We wish to list all candidates from either the Democratic or Republican parties. Create a new query listing the redistricting cycle, election year, candidate last name, candidate first name, amount raised, and votes received.

Only display records for members of the Democratic or Republican parties. Do not display the party name in the result.

Sort by redistricting cycle, then by year, candidate last name, and candidate first name, all in ascending order.

HINT: This query will show 233 records and 6 fields.



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Use an outer join in a query

- c. We wish to calculate the number of candidates from each party. Create a new query that lists each party's name and the number of candidates from that party.

Your results must include all parties, even if they had no candidates.

Sort by party name in ascending order.

HINT: This query will show 8 records and 2 fields.

- d. We wish to count the total number of candidates for each year. Copy-and-paste this SQL code into a new query:

```
SELECT Candidates.Year, Count(Candidates.District) AS  
CountOfDistrict  
FROM Districts INNER JOIN Candidates ON Districts.District =  
Candidates.District  
GROUP BY Candidates.Year;
```

The provided query will show incorrect candidate counts because it has an unnecessary table. For example, there were actually 39 candidates in 2014, not 117. Remove the unnecessary table to fix the query.

HINT: This query will show 8 records and 2 fields.

6. In the *AnalysisQuestions* table, answer the analysis question below. Respond to one question per record.
- a. Why might a party not contest all of the races in a given year?
7. Run the Compact and Repair Database utility on your database. Ignore any errors you receive when running the utility

Grading Rubric

This assignment is worth 8 points. It will be graded by your instructor using this rubric:

Standard	Meets Requirements (8 points)	Does Not Meet Requirements (0 points)
Student made reasonable effort in correctly completing assignment.	Assignment is at least 70% complete and correct, or student contacted instructor for help on incorrect or incomplete items.	Assignment is less than 70% complete and correct, and student did not contact instructor for assistance on incorrect or incomplete items.



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This rubric will be used for peer evaluation of this assignment:

Standard	Excellent	Satisfactory	Needs Improvement
Assignment is correct and complete.	Assignment is at least 90% complete and correct.	Assignment is 70%-89% complete and correct.	Assignment is less than 70% complete and correct.

The analysis question in Step 6a will be evaluated using this rubric:

Standard	Meets Requirements	Does Not Meet Requirements
Answer is reasonable.	Answer addresses the question prompt and is factually correct or a reasonable interpretation of available data.	Answer does not address the question prompt, is factually incorrect, or is an unreasonable interpretation of available data.
Answer is supported.	Logical rationale is provided to support the given answer.	Logical rationale is not provided to support the given answer.

References

- [1] D. E. Holmes, *West Virginia Blue Book 1999*, vol. 81. Charleston, West Virginia: West Virginia Legislature, 1999.
- [2] D. E. Holmes, *West Virginia Blue Book 2008*, vol. 90. Charleston, West Virginia: West Virginia Legislature, 2008.
- [3] D. E. Holmes, *West Virginia Blue Book 2012*, vol. 90. Charleston, West Virginia: West Virginia Legislature, 2012. Available: <http://www.legis.state.wv.us/legisdocs/2012/bluebook/bluebook2012.pdf>.
- [4] "Elections - History & Data," *West Virginia Secretary of State*. Available: <http://www.sos.wv.gov/elections/history/Pages/default.aspx>.
- [5] "Campaign Finance Reporting System," *West Virginia Secretary of State*. Available: <http://cfrs.wvsos.com/#/home>.