



Database Creation

WV Senate Problem

Topics

- Create a new database
- Import database tables and data
- Create database tables
- Add records
- Create lookup fields
- Create relationships
- Answer analysis questions

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 Office.

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 files for use in this assignment:
 - a. **candidates.xml** – Information on West Virginia Senate candidates [1], [2].

Table: Candidates		
Field Name	Type	Description
CandidateID	AutoNumber	Primary. Unique identifier for the candidate.
District	Number	Number of State Senate district.
Year	Number	Year of election.
PartyAbbrv	Short Text	Political party abbreviation.
CandidateFirst	Short Text	First name of candidate.
CandidateLast	Short Text	Last name of candidate.
Raised	Currency	Amount of funds raised by candidate.
VotesReceived	Number	Votes received by candidate.



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- b. **districts.xml** – Information on West Virginia Senate districts [3]–[5].

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

- c. **elections.csv** – Information on West Virginia Senate elections [1].

Table: <i>Elections</i>		
Field Name	Type	Description
RedistrictingCycle	Number	Redistricting cycle this election used.
District	Number	Part of composite key. Number of State Senate district.
Year	Number	Part of composite key. Year of election.
IncumbentFirstName	Short Text	First name of incumbent.
IncumbentLastName	Short Text	Last name of incumbent.
IncumbentRetired	Yes/No	Indication if the incumbent was not running.
WinnerFirstName	Short Text	First name of the winner.
WinnerLastName	Short Text	Last name of the winner.
WinnerPctg	Number	Percentage of the total vote received by the winner.

- d. **analysisquestions.xml** – Responses to analysis questions.

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.

Create a new database

2. Begin by creating a new Microsoft Access database named **senate_ppdc_wvsp.accdb**.

Import database tables and data

3. Import the following items into the database:
- candidates.xml** file – Import structure and data into a new table.
 - districts.xml** file – Import structure and data into a new table.
 - analysisquestions.xml** file – Import structure and data into a new table.



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- d. **elections.csv** file – Import as a new table named *Elections*. The first row of the file contains field names. Specify field types as indicated in Step 1. Do not set a primary key during the import, but afterwards create a composite key as indicated in Step 1.
4. We need to create a table to store data on political parties.

Create database tables

- a. Create a table named *Parties* with the fields below. Specify field types and a primary key as indicated.

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.

Add records

- b. Enter records for all political parties below.

HINT: The *Parties* table will contain 8 records.

PartyAbbrev	PartyName
AFP	American Freedom Party
CON	Constitution Party
DEM	Democratic Party
LIB	Libertarian Party
MTN	Mountain Party
NLP	Natural Law Party
GOP	Republican Party
WRN	Write-In Candidate

Create lookup fields

5. We wish to modify the *Candidates* table to incorporate lookup fields.
- a. Modify the **PartyAbbrev** field. Using a lookup field referencing the *Parties* table, allow the user to select the party abbreviation and party name (e.g., "DEM | Democratic Party") from a dropdown list. Sort by party name in ascending order.

Do not hide the key column. Store the value of the party abbreviation field. Enable data integrity, restricting deletes, on the relationship created by the Lookup Wizard.



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- b. Modify the **Year** field. Using a lookup field, allow the user to select the year from a dropdown list. Permit the user to choose only from these values:
- ◆ 2000
 - ◆ 2002
 - ◆ 2004
 - ◆ 2006
 - ◆ 2008
 - ◆ 2010
 - ◆ 2012
 - ◆ 2014

Create relationships

6. Create relationships for the tables as indicated below. Enforce referential integrity, but do not enable cascade updates or cascade deletes.

HINT: When creating relationships involving tables with composite keys, Access is sensitive to the order of the tables in the relationship. Be sure to specify each relationship's **Table** and **Related Table** as shown.

HINT: When creating relationships involving multiple fields from each table, specify all fields at the same time.

Table	Related Table	Common Fields for Relationship
<i>Districts</i>	<i>Elections</i>	RedistrictingCycle and District
<i>Elections</i>	<i>Candidates</i>	District and Year

Answer analysis questions

7. In the *AnalysisQuestions* table, answer the analysis question below. Respond to one question per record.
- a. Is there a relationship between the amount of funds a candidate raises and how many votes they receive? Why do you think this is or is not the case?



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8. 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.

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 7a 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] "Elections - History & Data," *West Virginia Secretary of State*. Available: <http://www.sos.wv.gov/elections/history/Pages/default.aspx>.
- [2] "Campaign Finance Reporting System," *West Virginia Secretary of State*. Available: <http://cfrs.wvsos.com/#/home>.
- [3] D. E. Holmes, *West Virginia Blue Book 1999*, vol. 81. Charleston, West Virginia: West Virginia Legislature, 1999.



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- [4] D. E. Holmes, *West Virginia Blue Book 2008*, vol. 90. Charleston, West Virginia: West Virginia Legislature, 2008.
- [5] 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>.