



Fields & Keys

WV Senate Problem

Topics

- Determine appropriate field types
- Select primary and composite keys
- Identify appropriate table relationships

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 file for use in this assignment:
 - a. **senate_ppfk_wvsp.accdb** – Information on West Virginia Senate elections [1]–[5].

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

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



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Table: Elections		
Field Name	Type	Description
RedistrictingCycle	Short Text	Redistricting cycle this election used.
District	Short Text	Number of State Senate district.
Year	Short Text	Year of election.
IncumbentFirstName	Short Text	First name of incumbent.
IncumbentLastName	Short Text	Last name of incumbent.
IncumbentRetired	Short Text	Indication if the incumbent was not running.
WinnerFirstName	Short Text	First name of the winner.
WinnerLastName	Short Text	Last name of the winner.
WinnerPctg	Short Text	Percentage of the total vote received by the winner.

Table: Parties		
Field Name	Type	Description
PartyAbbrv	Short Text	Abbreviation of party name.
PartyName	Short Text	Full text of political party name.

Table: AnalysisQuestions		
Field Name	Type	Description
QuestionNumber	Short Text	Question being answered.
Response	Short Text	Response to the analysis question prompt.

2. Open the **senate_ppfk_wvsp.accdb** database in Microsoft Access.



Determine appropriate field types

3. For a database to be effective and efficient, each field must use an appropriate data type for the information it will store. While you can store everything as text, you will be very limited when writing formulas, specifying criteria, and sorting data.

For each of the tables below, evaluate each field and the data it is intended to store. Specify appropriate field types for all fields.

NOTE: You cannot set the *AutoNumber*-type on a field which already contains data. Use the *Number*-type field instead.

HINT: Attempt to run each query after you have completed setting the field types. If you are unable to run a query, that is an indicator you have specified an incorrect field type.

- a. *AnalysisQuestions*
- b. *Candidates*
- c. *Districts*
- d. *Elections*
- e. *Parties*

Select primary and composite keys

4. Each table must have a key, a value which can uniquely identify each record in the database. No two records can have an identical key value.

In cases where the value of a single field can uniquely identify each record, you can select that single field to serve as a primary key. In cases where no single field can uniquely identify each record, you can combine multiple fields into a composite key.

For each of the tables below, specify an appropriate primary or composite key:

- a. *AnalysisQuestions*
- b. *Candidates*
- c. *Districts*
- d. *Elections*
- e. *Parties*



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Identify appropriate table relationships

- The power of relational databases like Microsoft Access comes from the ability to relate pieces of data in different tables to one another. We must identify appropriate relationships for the tables which contain related data in this database.

Identify and create the relationships appropriate for the tables in this database. Some relationships may involve multiple fields. Enable referential integrity when creating relationships. If you cannot create a relationship with referential integrity enabled, that is a sign you either have an incorrect field type specified or are attempting to create the relationship between incorrect fields.

NOTE: The *AnalysisQuestions* table is not related to any other table. It will not be involved in any relationships.

HINT: When creating relationships involving multiple fields, the order in which the tables were selected in specifying the relationship matters. If you cannot create the relationship at first, try reversing the order of the tables.

- 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.



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>.