

Database Design

Project Overview and Getting Started

Objectives

This lesson covers the following objectives:

- Identify a data-modeling project to solve a business information need
- Demonstrate essential skills in solving business problems using technology, and professionally presenting these solutions
- Demonstrate effective team-building skills

Purpose

What if there were a competition to design a house, or a car, or a landmark that would be featured in your school campus? You have this great idea for a design and have drawn up the plans according to the specified requirements.

However, you don't have experience at presenting to a group of people. Perhaps you are uncomfortable or nervous. Or perhaps you do not know how to explain your design to the judging committee.

Purpose (cont.)

If you do not know how to speak publicly or prepare written documentation to support your presentation, you may lose a big opportunity.

Purpose (cont.)

You will encounter similar situations in school and at work. You may have the best idea or the correct solution, but you will not be recognized if you cannot present it in an effective way.

What if you were the only worker at a restaurant? Your responsibilities would include: greeting the customers, seating them, taking their orders, preparing their food, delivering their food, producing their bill, taking their money, giving them their change, and thanking them for coming!

Purpose (cont.)

That would be exhausting and you might not have many customers because the service would be unsatisfactory.

A restaurant is a business that typically requires a team to run it. Different people perform different roles, all in the hope that customers will feel welcome, enjoy their food, and come back to the restaurant again. In school and in the workplace, you will have many opportunities to work on a team.

Purpose (cont.)

Working on a team requires successful interaction with others who have varying skills and strengths. Learning to be a productive member of a team will allow you to accomplish complicated or difficult tasks effectively and efficiently.

Final Class Project

You will now have the opportunity to apply your knowledge of data modeling and fine tune your presentation skills by working on a final class project.

Working in groups, you will choose a scenario based on a real-world business example where a database would be needed.

Role as a Consultant

Acting as consultants to this business, you will define the need for the database, identify the components, create an ERD, write documentation, and present your database design.

Each group will present its project results as a culminating activity for this course.

Presentation Project Ideas

The purpose of the project is to combine what you have learned about modeling information with the development of presentation skills.

Investigate the following categories to identify an area of interest. This will form the basis of your project. At the end of this course, you will give an oral presentation using visual aids to convince your audience that there's a real need for a database and that your company is the best one to design and implement it!

Presentation Project Ideas (cont.)

You will begin the project by choosing a topic with your group. You will then identify your "client's" business requirements by doing some research, and create an entity relationship diagram (ERD) and technical documentation explaining your design solution. Finally, your group will present your solution to the "client."

Presentation Project Ideas (cont.)

The following list contains starting points for possible database systems. If you really think about it, any topic is a database waiting to happen. For additional ideas for your projects, flip through one of your favorite magazines or search online. Try to think of a database that would come in handy after you read an article. It's easy!

Presentation Project Ideas: Environmental

- Tracking forest fires: areas of country, acres of devastation, people injured, firefighter experience with forest fires
- Collecting data for fossil digs: types of fossils, locations on site
- Tracking earthquakes: areas of country, magnitudes, damage, animals affected

Presentation Project Ideas: Environmental (cont.)

- Tracking volcanoes: areas of country, names, eruption dates, type of lava flow
- Documenting recreational and scientific uses of caves: study of bats in caves: types, locations, countries, safety
- Charting world oil pollution: areas, magnitude, occurrences, biggest offenders, clean-up efforts

Presentation Project Ideas: Historical

- Building a presidential archive: letters, speeches, books
- Tracking the artifacts of a great leader: Mahatma Gandhi, Mother Teresa, Winston Churchill

Presentation Project Ideas: Historical (cont.)

- Exploring and categorizing information about a historical event/place for tourists or researchers: Battle of Bull Run, Great Wall of China, Stonehenge
- Designing a system to group artifacts and/or collections: tableware of the first ladies and queens, King Tutankhamen's tomb, barbie dolls

Presentation Project Ideas: Business

Collecting data for:

- Coin collections, stamp collections
- Children enrolled in a daycare
- Dog-obedience school
- Bed-and-breakfast lodging
- Amusement Park
- Pet store

Presentation Project Ideas: Business (cont.)

Collecting data for:

- Organic farmer
- Egg farmer
- Limousine service
- Auto-body repair
- Restaurant orders and point of sale system

Presentation Project Ideas: Science

Collecting data on:

- Health: current world epidemics, statistics and locations, people affected, origins, causes, effects
- Energy: gas resources, geothermal, solar, wind
- Nuclear power plants
- Radio telescopes
- Marine aquarium
- Waves/tides/tsunamis
- Household chemicals: disposal

Presentation Project Ideas: Humanities

Collecting data for:

- Art museum
- Music collection of an orchestra or the church organist
- Church congregation
- Philosophers

What other ideas do you have? What do you want to know more about? Start there! There's definitely a database need around something that interests you.

Written Documentation

Your presentation must be accompanied by an ERD and written documentation that you will submit to the “client.” Your instructor will provide you with an example.

Final Presentation Rubric

The Final Presentation Rubric, accessible from the Section 0 – Course Resources page, will be used to evaluate your project.

Team Roles

Working in teams can be fun if the members share common goals and experiences. At the same time, successful teams are composed of members who have different skills and interests that complement each other.

When working in teams, make sure you identify the role of each team member. Keep in mind that every role plays a valuable part in making group work successful.

Team Roles (cont.)

Take time to make a list of all the team roles, just like you make a list of all of the tasks needed to complete a project. Discuss each team role and the importance of each role with the entire team. All team members should recognize the importance of their contributions to the final project.

Summary

In this lesson, you should have learned how to:

- Identify a data-modeling project to solve a business information need
- Demonstrate essential skills in solving business problems using technology and professionally presenting these solutions
- Demonstrate effective team-building skills