

IT-130 - Introduction to Databases Final Exam

Project Objectives:

Students will demonstrate real-world application of database concepts learned during the semester to a business entity. Specifically, students will:

- Research and discover appropriate structure, data types and records for a Bookstore Database.
- Design and model the database using the ER diagrams, and define the application components
- Implement the database, create the tables and establish relationships with foreign keys
- Populate the database by adding data records
- Write the SQL code for selected queries and analyze the data
- Create forms and reports
- Present database solutions professionally and effectively through both oral and written communications

Project Description:

Students in teams of 2 are required to design and build a Bookstore Database that would entail creation of a database and its components. Students will be working in a team and in an agile environment as this final project consists of the engineering of a large database. The tasks include planning, designing with an entity-relationship diagram (ERD), creating a database using a popular industry software, writing queries to analyze data and generating reports. The team will be required to submit a comprehensive MS Word Report and professionally present their completed database project using MS PowerPoint or any other visual presentation software.

Group Tasks:

I. Research/Discovery

In this initial phase, students need to research and get to know a Bookstore Database structure, design, discover the attributes, the standard tables, fields, data types, and records that can be implemented in a Bookstore Database Application.

II. Database Design:

Design and draw an Entity Relationship diagram that captures the information about your Bookstore database. The ER model should include the tables, entities, relationships, type of relationships, primary and foreign keys. The Bookstore Database should include at least the three most commonly used tables: Books, Authors and Publishers.

III. Database Implementation:

Students will:

- Create at least the three tables: Books, Authors and Publishers with appropriate data fields and data type.
- Add records to your Database, at least 10 records in each table. Try to put in real data for your Database as much as possible.
- Create the tables relationships, between the Author table and the Book table using a common Field: AuthorID. Also, between the Publisher table and the Book table using a common Field: PubID. Enforce Referential Integrity.
- Create a report that display the Last Name field from the Author table, the Title and Price fields from the Book table and the PubName field from the Publisher table. Add a grouping level using PubName. Sort the report by the Title field in ascending order. Choose Landscape orientation. Name the report Book List.
- Make at least four queries of your choice that can be beneficial to the Database user. Name the queries properly. (Examples: Listing books that were published in a specific date range. Listing books whose title contains a specific keyword. Listing books published by a specific publisher...)
- Create two forms named New Book and New Author, using the form wizard with customized layout, a search combo Box and the buttons add and save a record. The two forms should allow the user to enter a new book or a new author details to the Database.

IV. Word Report

The word report covers an introduction about the project, the purpose and the benefits of a Bookstore database. Students will also provide information on the research approach and how they have assigned tasks to each member of the group.

The body of the report narrates the entire project from planning phase, the designing / developing phase and implementing phase.

In conclusion, the students summarize the project outcomes, the overall lessons learned on the project including the challenges of working, collaborating with team members and improvements for the future.

V. Presentation:

Students will present their entire project in groups using MS PowerPoint or any other visual presentation software including a reflection on the group project.

The presentation should address mainly the following points:

- The importance/purpose and benefits of using the Bookstore Database
- Explain the database design phase and application functionalities. (ER diagram can be included)
- Description of the Database implementation: Tables, Fields, Datatypes, Records.
- Discuss the choice/selection of the Database queries
- Reflect on the Project Outcomes, lessons learned including challenges working as a group and improvements for the future