

CPRG 212 Database Fundamentals

Hand-In – Assignment 1

This task helps you become familiar with the fundamentals of relational databases through hands-on design and construction of a simple database.

Value

This lab is worth 30 marks.

Due

This assignment is due on the date specified by your instructor on Brightspace.

Directions

Part 1

You will be designing a database for an application within a team. You are to form a team and pick an application from the ones listed below:

1. Learning Management System
2. Restaurant Management System
3. Salaries Management System
4. Library Management System
5. Gym Management System
6. Hospital Management System
7. House Utilities Management System
8. Mechanic shop Management System
9. Employee Management System
10. Events Management System

Part 2

Using MS-Visio or Draw.io, draw an Entity-Relationship diagram for the database you designed in your teams.

Things to do:

1. Create a Visio Crows-foot Entity-Relationship diagram for your team's design.
 - a. The design should have approximately 4 entities. There is no need to make your database too large since this is a FastTrack exercise and we don't have a semester to finish it.
 - b. The entities should have relationship lines linking entities that are directly related, showing the cardinality of the relationships.
 - c. Each entity should have a primary key, any foreign keys that link it to related entities, and a couple of other attributes (keep this to a reasonable amount, considering the FastTrack time-frame – 2 to 4 attributes is plenty).

Part 3

Using the data models and entity-relationship, create an MS-Access database containing about 4 tables. You can have more if the scenario requires it, but keep it

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reasonable considering that this is a FastTrack exercise and you don't have an entire semester to finish it.

In this database, design and create the following components:

1. Two queries that use columns from at least two related tables.
2. Two forms that allow data entry and modification, and have some customization (field layout/formatting, company logo image, custom background, etc.)
3. Two reports that display grouped data and have page numbering in the footer of each page, and have some customization (field layout/formatting, company logo image, custom background, etc.)
4. A navigation form to make the other objects accessible.

Since this is an introductory class, do not worry about extreme detail in your components – the primary purpose of the exercise is to demonstrate that you can create the basic structures and customize them using MS-Access tools.

Handing in your work:

- **Submission is individual while the design is collaborative**
- Hand in your ER diagram and your MS-Access database by uploading them to the D2L assignment upload page.
- Your files should have your name in the filename.
- While creating your database designs you may encounter situations that require a "trade-off" or business decision to be made. If your design contains anything like this please include a note in your upload to explain your reasoning.

Marking Rubric

Your mark is based on submitted work. Submitted files will be examined using the following criteria.

PLEASE NOTE: Assignments are due on the date specified by the instructor. One mark will be subtracted if the files are submitted within one week of the due date. Files submitted after 1 week of the due date will have one mark subtracted per additional day beyond one week that the file is late.

Marks = 30 Possible Marks

Criteria	3	2	1
Table completeness	Database contains about 4 tables with adequate attributes to describe the entity properly, and at least 3 sample data rows per table.	Database has at least 4 tables, but few attributes or inadequate sample data.	Database lacks enough detail to demonstrate basic concepts. Sample data and attributes are not adequate.
Table relationships	Table relationships are correct, with proper cardinality.	Most table relationships are correct.	Most table relationship settings are missing or have serious problems.

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Normalization	Tables are normalized to 3 rd -normal form, or have notes explaining reasons for denormalization	Tables mostly follow normalization rules but have unexplained violations of normalization	Tables are not normalized
Queries	Two queries have been set up, containing table joins.	Two queries are present, but are very basic, or only one query is present with customization.	Queries do not meet the basic requirement.
Reports	Two reports have been set up, containing customization.	Two reports have been set up, but are basic, wizard generated reports, or one query is present with customization.	Reports are missing or not adequate.
Forms	Two forms have been set up, containing customization.	Two forms have been set up, but are basic, wizard generated reports, or one form is resent with customization.	Forms are missing or not adequate.
Navigation Form	Navigation Form contains sub-menus for reports and forms, with two reports or forms on each, and has some customization.	Navigation Form is complete, but has no customization.	Navigation Form is incomplete or not working properly.
Overall design	Database is well laid out and shows that some thought has been put into making components look good.	Database is adequate but minimal work went into making it look good.	Database components are wizard generated and very basic.
Submission			
File Submission	Files are submitted to instructor by due date.	Files are submitted within 1 week of due date.	Files are not submitted within 1 week of due date. Beyond one week of lateness, one mark will be subtracted per additional day that the file is late.
Filename	Files are zipped into one file. Zip file name clearly indicates the course code, module/assignment name and student name.	File name is not entirely clear on the required information.	File name has none of the required information.