# Database Course Project Workout

For the course project, you can come up with an idea for a database application, or you may talk to a person, business, service, etc. that needs a database application for their activities.

Examples of businesses with a need for database application:

* Body Shop
  + Entities: Customer, Car, Mechanic, Part or Material, Project, etc.
  + Relationships:
    - A customer brings cars for service.
    - A mechanic works on a project.
    - A project is about services to be done on a car.
    - A project uses parts.
    - Etc.
  + Attributes: You can guess the usual features of entities like Customer, Car, Projects, and so on. Some other attributes could be cost of part, cost of project, is the part USED or NEW, etc. (Brainstorm other details needed in a Body Shop database).
* An online store for selling computers, parts, and providing services like upgrade and trade-in.
* An event planner
* Leasing management system
* Construction management system
* Car rental platform
* Or any other projects your team like to implement

Workout session:

* Let’s get organized: talk with your teammates on how you all want to develop and share documents related to the course project.
  + For example, you can create a Google doc and give access to the teammates to read and modify it.
  + You can have a Google spreadsheet to write down who do/did which part.
* Discuss with teammates to decide what is your project about, or its title.
  + For example, Shark Tech System
  + I suggest choosing an area that at least of the teammates know about it or is interested to do research and get familiar with the flow of information in such application.
* You may do some googling and see samples or activities like your project.
  + Feel free to simplify or choose parts of details in those samples. (We don’t need a professional production although is welcomed).
* Write down the essential information you need to maintain in the database. As an example, you can look at the description of COMPANY in our notes (Module 2 Chapter 3 parts 1 and 2). Your team project database description could be few paragraphs like that or simplify it like MOVIE description.
* Rephrase the description with simple sentences that shows entities, attributes and relationships.

For example, DEPARTMENT entity could be written as follows:

DEPARTMENT:

* Every department has a name
* Every department is identified by a unique department number
* A department may be in **multiple locations**
* **A DEPARTMENT must have one or more EMPLOYEES working for it**
* **A DEPARTMENT must have one EMPLOYEE as its manager**
* **We would like to keep track of the date an EMPLOYEE started managing his/her DEPARTMENT**
* **A DEPARTMENT may manage multiple PROJECTS**
* After finishing the previous step, drawing the ER of your project should be straightforward:
  + Go to draw.io and create the ER.
  + I suggest having a backup of your ER in draw.io file format (which is a type of text), then in case you want to change it in future, you wouldn’t need to redraw it.

How big should be the database?

* It should be big enough that total number of entities and relationships is more than 12.

## Submission for phase one of the project:

### Part A)

One or two pages for the project specification:

Rephrase the description with simple sentences that shows attributes and relationships.

### Part B)

ER diagram of the project:

* + Specify cardinality ratios and total or partial participations.

## Submission:

* Create a docx file, paste parts A and B, then convert it to PDF and upload on D2L, team project section.
* One submission per team is enough (list the name of teammates on the top of the pdf file).