

# Homework Assignment # 2 – Database Design

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## Overview

- This homework is worth 10 points (10%) toward your final grade.
- It is due on Tuesday 6/23/2019, 11:59 pm.
- Late policy applies (grace period of 3 days with 20% late penalty). After that time (6/26/2019), no late work will be accepted.
- Save results in a Spreadsheet format as in the example that we looked at in class.
- Submit your assignment in PDF on Canvas.

This project will give you hands-on practice in working with MySQL Workbench (or similar tool) to create a key-based, fully attributed, 3 NF data model. In this project you will design a database, draw a data model to represent the design, then create a “physical model” of your design in the format of DDL (table create statements).

## Objectives

1. Become familiar with a data modeling tool of your choice
2. Demonstrate ability to create a complete data model.
3. Use the data modeling software to generate the DDL to create the database you have designed.

## Deliverables

1. A key-based, fully-attributed data model depicting your database design using the output of homework 1 Normalization as your input. Your model should include:
  - All tables with primary key attributes defined
  - All attributes with data type, length, and constraints defined
  - Proper table names, key names and attribute names
  - All relationships between tables showing captions both ways, and proper optionality and cardinality
2. The DDL necessary to create the database you have designed.
3. Documentation of any assumptions you made regarding unclear or missing requirements.

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### Submission

Your results for this project assignment can be captured in a document (such as a .txt file, MS Word or similar tool.) Please then save your final deliverable document as a **PDF** for submission. The final deliverable document you submit for this project must consist of three sections:

The first section is a picture (screen shot) of your complete data model. The second section is text containing all DDL generated by your data modeling software tool necessary to create the database you have designed. You can copy the DDL as text from MySQL workbench, and paste it into your document. The DDL must include create statements for all tables in your database (including definition of all data columns.) Primary and foreign keys must be defined. DDL must include all constraints, including foreign key references. Third is list (bullet points) of any assumptions you found necessary to support decisions you made about the process and/or database design.

### INPUT

For your data model drawing, please use the 3NF result from your homework HW\_1 Normalization.

#### Third Normal Form

##### Customer

CustomerID

CustomerName

CustomerAddress1

CustomerAddress2

CustomerCity

CustomerState

CustomerZip

CustomerPhone1

CustomerPhone2

ReferredBy

CustomerSince

CustomerTypeMowing

CustomerTypeLandscaping

CustomerPriorBalance

CustomerTotalNewCharges

## Homework Assignment # 2 – Database Design

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CustomerTaxes

CustomerTotalCredits

CustomerTotalAmountDue

CustomerTypeOther

Notes

**Invoice**

Invoice Number

Invoice Date

CustomerID

InvoiceTotalAmountDue

InvoiceAmountRemitted

TotalCharges

TotalCredits

**InvoiceDetail**

Invoice Number

InvoiceDetailLineNumber

InvoiceDetailDate

Description

Charges

Credits