Foundations of SQL & Database Management

Summer & Fall 2020

# Instructor Information

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| Instructor | Email | Office Hours |
| Sophie M. | sylvia@thepythonacademy.com | MWF – 8 to 8:30 pm, after class on Google Hangouts |

# General Information

## Description

This Course, Foundations of SQL & Database Management, teaches you:

* + - * SQL Manipulation
      * Database Design Concepts
        + Data Integrity
        + Data Normalization
        + Best Practices
      * Data Mapping
      * As well as Data Formats including JSON, XML

## Expectations and Goals

By the end of this class, you will able to understand the fundamentals of how databases are designed and how they work. More importantly, you will be adept at extracting the information you want for data analysis.

We expect you to attend class, pay attention, and do your homework. If you don’t do your homework or code along in class, you will fall behind and get frustrated. In return, we promise you to give you 100% effort on giving you the most up-to-date material and experience you will need to be successful in the data science field.

# Course Materials

## Required Materials

* You will need to have your own laptop or desktop (we only support troubleshooting for Windows, our staff has limited knowledge of MACs)

# Course Schedule (next page)

**Week 1**

The following topics are covered in this class. All topics are covered with real life examples and applications of the topic. Homework is always given after the class and reviewed at the beginning of the next class.

* What is relational database
* Install MySQL workbench and database
* Why do you need know database and SQL
* Different types of database
* Data normalization
* MySQL workbench introduction
* Entry level SQL :
  + Select
  + Where
  + Wild card
  + Count
  + Distinct
  + Order by

**Week 2**

The following topics are covered in this class. All topics are covered with real life examples and applications of the topic. Homework is always given after the class and checked at the beginning of the next class.

* Alias
* Concatenation
* Aggregated functions
* Group by
* Join ( inner join, left join, right join)
* Data models
* Entity Relationship Diagram
* Metadata

**Week 3**

The following topics are covered in this class. All topics are covered with real life examples and applications of the topic. Homework is always given after the class and checked at the beginning of the next class.

* Advanced SQL:
  + Union
  + Subquery

* DDL:
* Create
* Alter
* Drop
* Truncate
* Other DML:
  + Insert
  + Update
  + Delete
* Data Mapping
* Data Dictionary