Program outline

Course 1: Excel and SQL Essentials

- Duration: Eight weeks

- Description: This course introduces you to data and data analytics. You'll learn to collect, organize, analyze, and interpret data using Excel and SQL through the following topics:

  - Solving problems with data

  - Following the data analysis process

  - Performing advanced spreadsheet skills with Excel, like executing numeric, time and date, and string functions, creating pivot tables, performing comparisons and logical tests, combining data from multiple sources, and cleaning, sorting, and filtering data

  - Working with relational databases

  - Using SQL to perform numeric, time and date, and string commands and combine data from multiple tables

- Skills and tools:

  - Advanced Excel

  - SQL

  - pgAdmin

  - PostgreSQL

  - Data cleaning

  - Data manipulation

  - Data analysis

  - Data-driven decision making

Course 2: Data Visualization Essentials

- Duration: Six weeks

- Description: This course shows you how to turn your data into beautiful and effective visualizations using Excel and Tableau. Also, you'll learn best practices for creating presentations in PowerPoint and communicating your insights to leaders and other business stakeholders. By the end of this course, you'll be well versed in the following topics:

  - Identifying and leveraging different types of visualizations

  - Creating bar charts, scatterplots, graphs, pie charts, heat maps, pivot charts, and dashboards in Excel

- Creating bar charts, scatterplots, graphs, pie charts, heat maps, tables, and dashboards in Tableau

- Interpreting visualizations and making data-driven recommendations

- Creating effective and customized presentations in PowerPoint

- Communicating your insights

- Skills and tools:

  - Excel

  - Tableau

  - PowerPoint

  - Creating visualizations and dashboards

  - Presenting recommendations to leaders and other business stakeholders

Course 3: Python Essentials

- Duration: 10 weeks

- Description: This course teaches you to collect, organize, analyze, and visualize data using Python programming. Programming enables you to create more customizable analyses and visualizations because you're not limited by an application's functionality. Throughout the course, you'll be immersed in the following topics:

  - Programming for data analysis

  - Identifying Python syntax, variables, and data types

  - Navigating Google Colaboratory's integrated development environment

  - Writing basic functions

  - Working with loops and conditional logic

  - Using Python packages like pandas, NumPy, seaborn, and Matplotlib

  - Accessing spreadsheet files and database files

  - Organizing and manipulating numerical data, string data, collections, Series, and DataFrames

  - Performing basic exploratory data analysis and descriptive statistics

  - Creating basic data visualizations

- Skills and tools:

  - Python

- NumPy

- pandas

- Matplotlib

- seaborn

Course 4: Career Essentials

- Duration: 1 week

- Description: This course prepares you for the next step in your career through the following topics:

  - Identifying internal career growth opportunities

  - Building a career path plan

  - Developing a personal brand and application materials

  - Preparing for an interview

- Skills and tools:

  - Networking

  - Resume

  - LinkedIn

  - Interviewing

Notes:

Career exercises

The Career Essentials course includes four exercises:

1. Practice informational interviews

2. Complete a manager check-in meeting

3. Build an updated resume

4. Practice a behavioral interview

In this course, you may need to fill out a form or answer questions to complete an exercise, but your submission won't be reviewed by a member of the Thinkful team.

Assessments

- To complete this program, you will need to pass six assessments; there are two assessments per course.

• Course	• Course assessments
• Excel and SQL Essentials	• 1. Excel assessment • 2. SQL assessment
• Data Visualization Essentials	• 1. Data visualization basics and Excel assessment • 2. Tableau and PowerPoint assessment
• Python Essentials	• 1. Python assessment • 2. pandas, Matplotlib, and seaborn assessment

- Each assessment is composed of 15-30 multiple-choice questions about the content in the preceding lessons. To pass an assessment, you need to answer at least 75% of the questions correctly. If you do not pass an assessment, you can retake it an unlimited number of times.

Relational databases versus tabular databases

As you now know, Excel is a tabular database. It holds data in a table structure that the user can see and is organized by rows and columns. A tabular database lets a user scroll through and view the full data. But a major limitation of tabular databases is that they can't hold much more than a million rows of data. In this data-driven world, datasets can be millions of rows.

A relational database is a database in which the relationships between data matter. Imagine that you have a database with two tables: table A, which has customer demographic data, and table B, which has customer order data. Each order in table B points to a customer whose information is stored in table A. Because these tables are related to each other, the database is relational.

A relational database can house millions of rows of data without slowing down, so it is the preferred database for working with big data. In fact, relational databases can hold hundreds of data tables, each with millions of rows! But because these databases hold so much data, the user can't simply view or scroll through the data, as they can with Excel. So, programming languages are used to pull or see desired data from a relational database. A programming language is a code that instructs the database management system on what data to pull or how to manipulate the data.