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Data Engineer Bootcamp (Full-Time)

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Notes



WeCloudData

Data Engineering Diploma

Content developed by: WeCloudData Academy

We have begun our first Capstone project for our program, which is a crucial part of our bootcamp. The grade for this project will affect your graduation score, so please take it seriously. The project will be divided into two weeks. In the first week, which is this week, you will complete the first part of the project - setting up the project infrastructure. In the second week, after the Ramadan Break, you will mainly focus on data modeling, ETL, data loading, and reports. Each morning, we will have lectures to guide you on how to complete each task, and in the afternoon, you will work with your group to complete the corresponding tasks. You will find each task outlined in the learning portal, so please follow them to complete your work.

Please submit your project code and documentation before the end of the second week. Below are the submission requirements :

1. Your Python code on AWS Lambda.
2. Your data modeling and ETL SQL code.
3. Screenshots of your Metabase report.

Please compress the above files into a zip file for submission. Name the zip file as **YourGroup_YourName.zip**.

On the last afternoon of the second week, we will conduct presentations. Below are the presentation requirements :

1. Presentations will begin at the start of the afternoon lab.
2. Presentations will be conducted on a group basis.
3. Each group will have a maximum of 15 minutes.
4. Your project grade will be based on the following aspects :
 - Completeness
 - Code Quality
 - Presentation Quality

5. If a group only submits project documentation but does not participate in the presentation, members of that group will lose 50% of their grade.
6. The presentation order will follow the given group number.
7. During the presentation, please showcase your slides, introducing each step of the project. Demonstrate each step during the presentation, including how you scheduled tasks.

[Course Content](#)

Enter code



All

Lecture

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Practices

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Program Information



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Program Administration



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Surveys



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Surveys



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[Week 3 Survey - Client Project](#)



[Week 4 Survey](#)



[Project Group Survey](#)

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Week 00 (Virtual)- Program Preparation



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Week Plan



[Week Plan](#)

Software Installation



[\[Software Installation\]: VSCode](#)



[\[Software Installation\]: Jupyter notebook](#)



[\[Software Installation\]: Python](#)



[\[Software Installation\]: MySQL](#)



[\[Software Installation\]: Ubuntu on Mac](#)



[\[Software Installation\] Ubuntu on Windows](#)



[\[Online Platform Use\]: Colab](#)

Pre-bootcamp



[Pre-bootcamp Material](#)

Presentations



[\[Lecture Video\] Sunday: Orientation Session](#)



[\[Lecture Video\] Tuesday: Introduction to Data Engineering](#)



[\[Lecture Video\] Wednesday: Curriculum](#)



[\[Lecture Video\] Thursday: Curriculum](#)



[\[Lecture Slide\] \(Wed\) Curriculum Introduction](#)

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Week 01 - SQL



[Chapter overview](#)

Sunday - Basic SQL



[\[Lecture Materials\] SQL basics](#)



[\[Lab\] SQL Basics Exercise](#)



[\[Lab\] Exercise: SQL - Airbnb \(Optional\)](#)



[\[Lecture video\] SQL Basics](#)

Monday - SQL Join and sub-select



[\[Lecture Materials\] SQL join and sub-select](#)



[\[Lab\] Exercise: Join and Sub-select](#)



[\[Lecture video\] SQL Day 2](#)

Tuesday - SQL Window Function



[\[Lecture Materials\] SQL Window Function](#)



[\[Lab\] Exercise: Window Function](#)



[\[Lecture video\] SQL Day 3](#)



[\[Lab Video\] SQL Lab Solution](#)

Wednesday - SQL DDL and CTE



[\[Lecture Materials\] DDL and CTE](#)



[\[Lab\] SQL ddl](#)



[\[Lab\] SQL CTE](#)



[\[Lecture Video\] SQL Wednesday](#)

Thursday - SQL Review



[\[Weekly Quiz\] SQL - Week 1](#)



[\[Lecture Video\] SQL Thursday Review](#)



[\[Lecture Slides\] SQL Review](#)

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Week 02 - Python



[Chapter overview](#)

Sunday - Python data type and structure



[\[Lecture Materials\] Python Data Structure and Data Types](#)



[\[Lab\] Exercise: Python Data type and structure](#)



[\[Lab\] Exercise: OpenAI ChatBot \(Optional\)](#)



[\[Lecture Video\] Python Sunday](#)

Thursday - Holiday



Monday - Python Control Flow and Function



[\[Lecture Material\] Python Control Flow and Function](#)



[\[Lab\] Exercise: Python Function](#)



[\[Lab\] Exercise: Python Control Flow](#)



[Python Quiz \(Multiple-Choice\)](#)



[\[Lecture Video\] Python Monday](#)

Tuesday - Pandas 1





[\[Lecture Material\] Pandas 1](#)



[\[Lab\] Pandas Intro](#)



[\[Lecture Video\] Python Tuesday](#)

Wednesday - Pandas 2



[\[Lecture Material\] Pandas 2](#)



[\[Lab Demo\] PandaSQL](#)



[\[Lab\] Exercise: Advanced Pandas](#)



[\[Lecture Video\] Python Wednesday](#)

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Week 03 - Client Project



[Chapter overview](#)

Sunday - Real Client Project Intro



[\[Lecture Material\] Web Scraping](#)



[\[Real Client Project\] Project Requirements](#)



[\[Note\] Project Group Assignment](#)



[\[Lecture Video\] Webscraping Sunday](#)

Monday - Real Client Project Day



Tuesday - Real Client Project



[\[Real Client Project\] Code & Data Submission](#)

Wednesday - RCP



Thursday - RCP



[\[Lecture Video\] Webscraping Thursday](#)

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Week 04 - Linux and AWS



[Chapter overview](#)

Sunday - Linux



[\[Lecture Material\] Linux](#)



[\[Lab\] Exercise: Bash Commands](#)



[\[Lab\] Mini Project: Riyadh Climate Data - Cron Job](#)



[\[Lecture Video\] - Linux Sunday](#)

Monday - AWS Intro



[\[Lecture Material\] AWS Intro](#)



[\[Lab\] AWS Account Setup](#)



[\[Lab\] Workshop AWS EC2](#)



[\[Lab\] Workshop S3](#)



[\[Lecture Video\] AWS Monday](#)

Tuesday - Lambda



[\[Lab\] Workshop: Lambda](#)



[\[Lecture Material\] Lambda](#)



[\[Lab\] Mini Project: Lambda](#)



[\[Lecture Video\] Lambda Tuesday](#)

Wednesday - Practice Day



[\[Lecture Material\] Plan For Today](#)



[\[Lab video\] 2024-03-06](#)

Thursday - Practice Day



[\[Lecture Material\] Plan For Today](#)



[\[Quiz\] Linux and AWS Quiz](#)



[\[Lab Video\] EC2, S3, Lambda workshops demo](#)

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Week 05 - Docker and Client Project phase 2



[Chapter overview](#)

Sunday - Docker I



[\[Lecture Material\] Docker](#)



[\[Lab\] Software Installation: Docker](#)



[\[Lab\] Account Creation Create your Dockerhub account](#)



[\[Lab\] Workshop Demonstrating Hello World Example](#)



[\[Lab\] Workshop: Work with Docker Image](#)



[\[Lab\] Exercise: Basic Docker Commands](#)



[\[Lecture Video\] Docker Sunday](#)



[\[Lab\] Exercise: Basic Docker Commands Updated](#)

Monday - Docker II



[\[Lab\] Workshop: Install Zeppelin with Docker](#)



[\[Lab\] Workshop: Docker Compose --Flask](#)



[\[Quiz\] Docker Commands Quiz](#)



[\[Lecture Video\] Docker II - Monday](#)



[\[Lab\] Workshop: Install Zeppelin with Docker Updated](#)

Tuesday - Real Client Project Phase 2



[\[Lecture Video\] Learning Roadmap & RCP Feedback](#)

Wednesday - Real Client Project Phase 2



Thursday - Real Client Project Phase 2



[RCP project Submission \(Competition\)](#)

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Week 06 - Data Warehouse



[Chapter overview](#)

Sunday - Snowflake Data Warehouse



[\[Lecture Material\] Snowflake](#)



[\[Lab- W601\]: Software Installation: DBeaver](#)



[\[Lab-W602\]: Account Creation: Snowflake](#)



[\[Lab-W603\]: Software: Connect Snowflake with DBeaver](#)



[\[Lab-W604\]: Exercise: Snowflake](#)



[\[Lecture Video\] Snowflake - Sunday](#)



[Shaohua Weekly Review \[RCP\] - Sunday](#)



[\[Lab Video\] Snowflake Demo - Monday](#)

Monday - Data Warehouse Intro



[\[Lecture\] Data Warehouse Intro](#)



[\[Quiz-W611\] Data Warehouse Concept \(Grading!!\)](#)



[\[Lab-W612\] Exercise: Use SnowSQL \(Optional\)](#)



[\[Lecture Video\] Data Warehouse - Monday](#)

Tuesday - SQL in ETL



[\[Lecture Materials\] SQL in ETL](#)



[\[Lab\] TA Exercises Review](#)



[\[Lecture Video\] SQL in ETL - Tuesday](#)

Wednesday - Data Modeling and ETL



[\[Lecture Material\] Data Modeling and ETL](#)



[\[Lab-W631\] Exercise: Data Modelling and ETL \(Group\)](#)



[\[Lecture Video\] Data Modelling and ETL - Wednesday](#)

Thursday - Data Loading



[\[Lecture Material\] Data Loading](#)



[\[Lab-W641\] Exercise: ETL and Data Loads \(Group\)](#)



[\[Lecture Video\] Data Loading](#)

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Week 07 {Project Week} - Capstone Project-1



[Chapter overview](#)

Sunday - Data Warehouse Review



[\[Lecture Material\] Agenda For Today](#)



[\[Lecture Video\] Data Warehouse Lab Review - Sunday](#)

Monday - {Capstone Project} Project Intro



[\[Project Material\] Project Guideline](#)



[\[Project Material\] Project Data Overview](#)



[\[Project Material\] Business Requirements Overview](#)



[\[Project Material\] Project Infrastructure Overview](#)



[\[Lab-W711\] Project Task1: Setup Snowflake, EC2 and Docker](#)



[\[Project Material\] Project Introduction \(Full-version\)](#)



[\[Lecture Video\] Capstone Project Intro - Monday](#)

Tuesday - {Capstone Project} Lambda Setup in Project



[\[Lab-W721\] Project Task2: AWS Lambda Setup](#)

Wednesday - {Capstone Project} Airbyte Setup in Project



[\[Lab-W731\] Project Task3: Airbyte Installation and Configuration](#)

Thursday - {Capstone Project} Self-work On Project Part 1



[\[Lab\] Agenda for Today](#)



[Project Material] Project Guideline

