1. Install Software
   1. VSCode- [Install VSCode](https://code.visualstudio.com/)
      1. extensions-
         1. docker- [How to run Docker in VS Code](https://securecloud.blog/2021/12/07/wsl2-use-docker-with-vscode-without-docker-desktop/)
   2. WSL- [Install WSL](https://learn.microsoft.com/en-us/windows/wsl/install#install)
   3. Python - [Install Python](https://learn.microsoft.com/en-us/windows/wsl/install#install)
   4. DBeaver- [Install DBeaver](https://dbeaver.io/download/)
   5. Docker Desktop- [Install Docker Desktop](https://www.docker.com/products/docker-desktop/)

1. Source Control
   1. Create Repo in personal account
   2. Clone Repo
   3. Create Branch
   4. Learn Basics
      1. Push, Pull, Commit
   5. Download GitDesktop
      1. [Download GitHub Desktop](https://desktop.github.com/download/)
   6. Teach some basic Git commands using terminal

1. Get Ready to Code
   1. Install Python Libs
      1. Flask- for API development
         * [Flask Getting Started](https://flask.palletsprojects.com/en/stable/quickstart/)
      2. Pandas- for data manipulation
         * [Panda examples](https://www.geeksforgeeks.org/introduction-to-pandas-in-python/)
      3. Numpy- additional data manipulation
         * [Numpy basics](https://www.w3schools.com/python/numpy/default.asp)
      4. flask\_swagger\_ui
         * [flask-swagger-ui](https://pypi.org/project/flask-swagger-ui/)
   2. Create ER Diagram of purposed database schemas using lucidchart
      1. [A blue circle with dots

         Description automatically generatedWhat is an entity relationship diagram (ERD)? | Definition from Tec...](https://www.techtarget.com/searchdatamanagement/definition/entity-relationship-diagram-ERD)
      2. [A logo of a company

         Description automatically generated with medium confidenceLucidchart | Diagramming Powered By Intelligence](https://www.lucidchart.com/pages/landing?utm_source=google&utm_medium=cpc&utm_campaign=_chart_en_us_mixed_search_brand_exact_&km_CPC_CampaignId=1457964857&km_CPC_AdGroupID=57044764032&km_CPC_Keyword=lucidchart&km_CPC_MatchType=e&km_CPC_ExtensionID=&km_CPC_Network=g&km_CPC_AdPosition=&km_CPC_Creative=442433231228&km_CPC_TargetID=kwd-33511936169&km_CPC_Country=1015850&km_CPC_Device=c&km_CPC_placement=&km_CPC_target=&gad_source=1&gclid=EAIaIQobChMI1KrajbHpiQMV30H_AR0MqR2JEAAYASAAEgJpAfD_BwE)

1. Start Coding
   1. Create Database, Tables, Schemas in SQLite
   2. Load Tables
      1. [A green logo with a white background

         Description automatically generatedPython SQLite - GeeksforGeeks](https://www.geeksforgeeks.org/python-sqlite/)
   3. Write Ingestion Code using-
      1. Pandas
      2. Numpy
      3. Pure python

1. Create Flask and server APIs
   1. Create a Flask Server
      1. [Python Flask: A Comprehensive Guide from Basic to Advanced](https://medium.com/@moraneus/python-flask-a-comprehensive-guide-from-basic-to-advanced-fbc6ec9aa5f7)
   2. Create 2 endpoints
   3. Create a swagger doc to verify endpoints
      1. [Flask Python- Swagger for rest apis](https://diptochakrabarty.medium.com/flask-python-swagger-for-rest-apis-6efdf0100bd7)
2. Container Code
   1. Create a docker image that runs flask server and local database using docker compose.
      1. [A logo of a ship

         Description automatically generatedQuickstart](https://docs.docker.com/compose/gettingstarted/)
3. Code challenge
4. <https://dsigitlab.research.auto.pioneer.com/data-engineering/code-challenge> (skip the extra credit for now)