# ECS 116
# Databases for Non-Majors

Discussion 3
(4/18/24) |Spring ‘24

# Today's Agenda

1. Installing Anaconda (Quick Overview)
2. Opening  Jupyter notebook and run a simple script
3. Understand what the script means
4. Practice referential integrity queries

# Quick Updates

Problem Set 2

- Is live
- Last date is April 19th @ 11:59 pm
- No late policy

Assignment 1

- Is live
- Last date is April 26th @ 11:59 pm

Creating Groups

- Assignment 2 onwards will be grouped (3 ppl)
- Go to the excel sheet and write names

Submission Policy Changes

- Follow the submission instructions correctly
- Focus on the naming, number of files and file structure
- If any tweaks are to be made to your submission so that the program checks it then

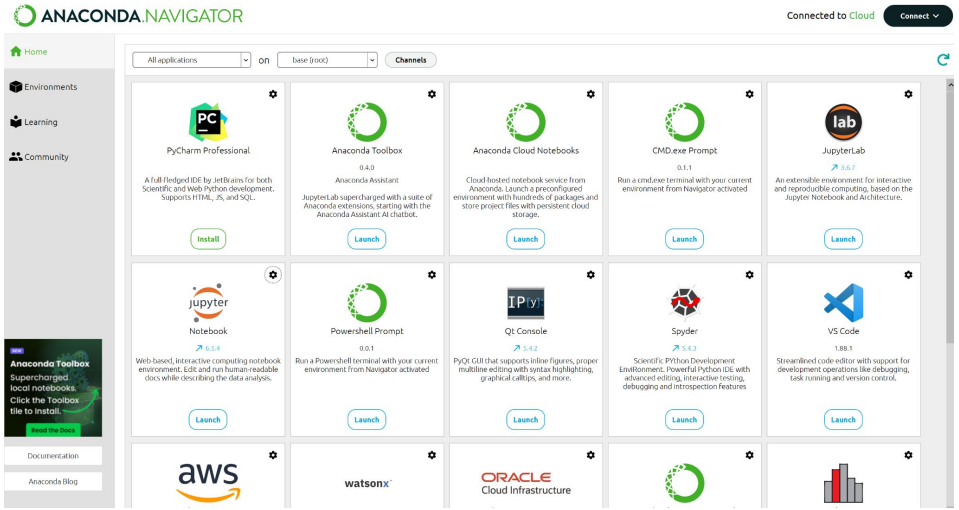
a. 1 point deduction for Problem Sets
b. 10% grade reduction for programming assignments

# Files

Today's Files:

1. Installing Anaconda doc: *Files->Discussions ->Presentations->Installing Anaconda.pdf*
2. Boilerplate: *Files->Juypter Notebooks -> DISC-3-BOILERPLATE-v01.ipynb*
3. Completed notebook: *Files->Juypter Notebooks -> DISC-3-PSQL-Queries-v01.ipynb*

# Tech




What is Anaconda?

Anaconda is a free, open-source distribution of the Python and R programming languages for data science, machine learning, and artificial intelligence. It includes over 250 pre-installed packages and tools for managing packages and environments. Anaconda also offers an AI-powered coding assistant, ready-to-code environments, and easy app deployments.

***If you haven't installed Anaconda use the installation doc to do so.***

# Tech

Jupyter Notebook?

Jupyter Notebook is a web app  for creating and sharing computational documents. It offers a simple, streamlined, document-centric experience.

pyscopg2?

Psycopg is a PostgreSQL database adapter for the Python programming language. Its main features are the complete implementation of the Python DB API 2.0 specification and the thread safety (several threads can share the same connection).

# How does it all work?

1. Open Jupyter Notebook

2. Import required packages

3. Create new ini file

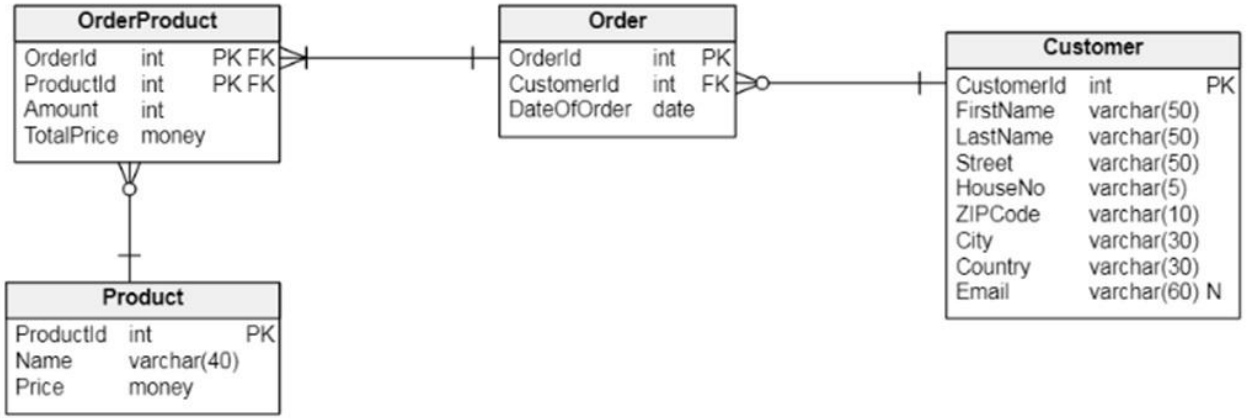
4. Open connection to local psql

5. Work on *discussion2*, schema *company*

6. Manipulate data using psycopg2

7. Work on updates, constraints and references

# What are constraints and references?




Constraints?

1. Primary Key -> Unique, not null
2. Foreign Key -> Relationships b/w tables
3. Unique
4. Check

Why?

Data Validity

Relational Integrity

Error mitigation

References?

Parent-child relationships between tables

# Working on Jupyter Notebook

1. Download the BOILER PLATE code
2. Open Jupyter Notebook through the Anaconda navigator
3. In JN, open the downloaded boiler plate code
4. Go through the boiler plate code
5. Work on queries

# What did we learn today?

1. Quick Course Updates
2. Tech Used
3. Small Working Algo
4. What are constraints, references and updates
5. Used psycopg2 to work on Jupyter Notebook

# Thank You!

See you next Thursday!