Assignment 5.2 - PyTech: Collection Creation

For this module's assignment, you will be using Python to create a new MongoDB collection based on the ORD and NoSQL you created in Module 4.

Database Setup
- Sign-in to your MongoDB Atlas account.
- Locate the **csd** project name from the left-hand drop down menu and select it.
- Under the "DATA STORAGE" section, select "Clusters."
- Under the "Clusters" section select the "COLLECTIONS" button.
- Under the "Collections" tab, select the "Add My Own Data" button.
- In the "Create Database" pop-up window
  - Name the database **pytech**
  - Name the collection **students**
- Expand **pytech** and you should see an empty collection for students.
- Take a screenshot of the database and expanded collection and save it as an image.

Database Connection
- Under the "Collections" tab select the "Overview" tab.
- Select the "CONNECT" button (right side of the screen).
- From the pop-up window, select "Connect using MongoDB Compass."
- Choose "I have MongoDB Compass."
- Select the "Copy" button to save the connection string.
  - Note: this connection string is how we will connect to MongoDB from VS Code (see below). If we were connecting to MongoDB Atlas from our Python program, we would have chosen the "Connect you application" option.

VS Code: MongoDB Connection
- Open VS Code.
- Select the MongoDB icon from the left hand menu.
- Select the "Add Connection" button.
- Under "Connect to MongoDB" select "connect with a connection string."
- In the pop-up window, paste the connection string you copied from the "Database Connection" guide.
- In the pasted string you will need to replace <password> with the word **admin** (remove the open < and closing >. You will also need to replace the last word **test** with **pytech**
- Close the tab by selecting the X in the tab's window.
- Expand the cluster and pytech directories. You should see the students collection.
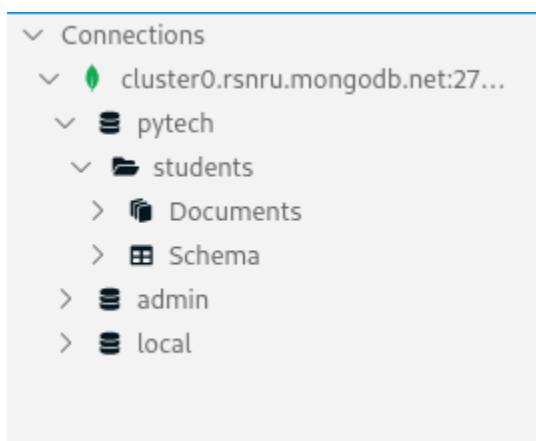
The point of this guide is to demonstrate how to connect VS Code to MongoDB Atlas. This is extremely helpful, because it saves us from having to log into MongoDB Atlas each time we want to interact with our database and collections.

MongoDB Native Driver
Before we can connect a Python program to MongoDB we need to first install their native driver. Anytime we want to install third-party libraries in a Python project we use **pip**, which should have been installed when you installed Python.

- **pip install pymongo**
- **pip install pymongo[srv]**
    - We are installing this package so we can use connection strings that start with the value **srv**

Python: MongoDB Connection Example
- Sign-in to MongoDB Atlas, select the "CONNECTION" button, and copy the connection string for connecting an application.
- Import MongoClient
    - from pymongo import MongoClient
- Create a variable named url and assign it the connection string value you copied from MongoDB Atlas.
    - url = "";
- Create a variable named client and call the MongoClient passing-in the url variable
    - client = MongoClient(url)
- Create a variable named db and assign it to the pytech database instance.
    - db = client.pytech
- Using Python's built-in print statement, calling the list_collection_names method off of the db variable
    - print(db.list_collection_names)
- Open a terminal window inside of VS Code
    - Terminal > New Terminal
- Under the "Problems" tab there will be a listing of any Python errors. Make sure you correct these before turning in your work.
- Select the Terminal tab and run the program by selecting Run > Start Debugging
- Continue to run and test the program until there are no errors and you can see the students collection in the terminal window.

Before proceeding any further, please complete the following checklist

Checklist
- Completed the "GitHub Repository Setup" guide.
- Completed the "MongoDB Atlas Signup" guide.
- Completed the "MongoDB Cluster Setup" guide.
- Completed the "Organization/Project Setup" guide.
- Completed the "Security Provisions" guide.
- Completed the "Database Setup" guide.
- Can access the database.
- Can access the students collection.
- VS Code installed with the recommended extensions.
- Completed the "VS Code: MongoDB Connection" guide.
- Installed pymongo using pip.
- Reviewed the Python code for connecting to MongoDB.

Instructions
- Complete the steps outlined in the "Database Setup" instructions.
- Create a new directory under your csd-310 repository and name it **module_5**
- Create a new Python file under **module_5** and name it **mongodb_test**
  - Note: if VS Code prompts you to install **pylint**, allow it.
- Complete the steps outlined in the "Python: MongoDB Connection Example" guide.
- Styling guidelines
  - The format must match mine (this is gradable)

Output: mongodb_test.py

```
 -- Pytech COllection List --
['students']


 End of program, press any key to exit... █
```

GitHub
- Stage, commit, and push your work to GitHub.

Deliverables
- Link to your GitHub repository.
- mongodb_test.py file