Qiskit Exercises

Environment Setup

1. Install Anaconda.

   > On Linux, you will need to download the install script and run it from the terminal. For example:

   ```
   curl -O https://repo.anaconda.com/archive/Anaconda3-2022.05-Linux-x86_64.sh
   bash Anaconda3-2022.05-Linux-x86_64.sh
   ```

2. Open the Anaconda prompt (search the program and click on it).

   > On Linux, simply open a new terminal.

3. Navigate to the `QiskitExercises` directory. For example:

   ```
   cd /path/to/repo/exercises/QiskitExercises
   ```

4. Setup a new virtual environment and activate it.

   ```
   conda create -n qiskit python=3
   conda activate qiskit
   ```

   > You only need to create the virtual environment once, but you need to activate it each time you open the project.

5. Install Qiskit with pip.

   ```
   pip install qiskit
   ```

VS Code Integration

1. Install the official Python extension by Microsoft.
2. Open the QiskitExercises folder.
3. Use the Command Palette (`F1` or `Ctrl+Shift+P`) to set your Python interpreter to the virtual environment you created. (Search for "Python: Select Interpreter" and click on the one with your virtual environment in the path.)

Now, whenever you open the terminal, the environment will automatically be activated for you.

> There is some additional setup to get `conda` working with PowerShell. Best workaround on Windows is to set the default profile to use Command Prompt instead.

Running the Tests

1. Open the terminal and make sure the virtual environment is activated.
2. `cd` into the lab folder.
3. Run `python -m unittest` to run all tests. To target individual tests, use `python -m unittest lab12tests -k <test_name>`.