Below is a quick guide on how to **clone** (or otherwise connect) the [CTGAN GitHub repository](https://github.com/sdv-dev/CTGAN) to your local environment in **Visual Studio Code (VS Code)**. Once you have it locally, you can explore or modify the source code and run it in VS Code.

**1. Prerequisites**

1. **Git Installed**
   * Make sure Git is installed on your machine.
   * You can check by typing git --version in your terminal (Command Prompt or PowerShell on Windows, or Terminal on macOS/Linux). If you don’t have Git, download it from [git-scm.com](https://git-scm.com/).
2. **VS Code Installed**
   * Download from [code.visualstudio.com](https://code.visualstudio.com/).
3. **GitHub Account** (Optional but recommended if you want to push changes to a fork).

**2. Cloning the Repository in VS Code**

There are two common ways to get the **sdv-dev/CTGAN** repo into VS Code:

**A. Using VS Code’s Built-In Git Tools**

1. **Open VS Code**.
2. **Open the Command Palette**:
   * On Windows: Ctrl + Shift + P
   * On macOS: Cmd + Shift + P
3. Type **“Git: Clone”** and select **Git: Clone** from the list.
4. **Paste the repository URL**:

arduino

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https://github.com/sdv-dev/CTGAN.git

1. **Choose a local folder** to clone into.
2. After it finishes, VS Code may prompt you to open the cloned repository. Select **Open**.

**B. Using the Terminal in VS Code**

1. **Open VS Code** and open the integrated terminal (View → Terminal).
2. Navigate (cd) to the folder where you want the repo to live, e.g.:

bash

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cd C:\Users\ortho\Documents\GitHub

1. **Clone the repo** using Git:

bash

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git clone https://github.com/sdv-dev/CTGAN.git

1. When the clone is complete, you can **open** that folder in VS Code:

bash

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cd CTGAN

code .

The code . command opens the current folder in VS Code.

**3. Installing Dependencies**

Once you have the CTGAN repository locally, you might want to **install** the library (and its dependencies) in a virtual environment so you can run or modify the code.

1. **Create a virtual environment** (optional but recommended):

bash

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python -m venv venv

Then activate it:

* + Windows:

bash

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venv\Scripts\activate

* + macOS/Linux:

bash

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source venv/bin/activate

1. **Install the local CTGAN** (and dependencies) in editable mode:

bash

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pip install -e .

This will install everything from the setup.py or pyproject.toml in the cloned folder.

Now you can **import ctgan** or run any scripts within that repository directly in your VS Code environment.

**4. Running and Modifying Code**

With the repository open in VS Code:

* You can **browse** the source code (e.g., ctgan/ctgan.py, ctgan/synthesizers/ctgan.py, etc.).
* You can **create new Python scripts** in the same folder to experiment with CTGAN.
* If you want to **push changes** to GitHub, you would typically:
  1. Fork the original repo to your own GitHub account.
  2. Update your local clone’s remote URL to point to your fork (or clone your fork directly).
  3. Commit and push changes to your fork.

**5. Quick Commands Reference**

* **Clone a repo**:

bash

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git clone <repo\_url>

* **Check repo status**:

bash

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git status

* **Add changes**:

bash

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git add .

* **Commit changes**:

bash

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git commit -m "My message"

* **Push changes**:

bash

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git push origin main

*(Replace “main” with your branch name if different.)*

**6. Alternative: Install CTGAN from PyPI**

If your goal is just to **use** CTGAN (not necessarily modify the source code), you can simply install from PyPI:

bash

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pip install ctgan

Then in your Python scripts, you can:

python

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from ctgan import CTGANSynthesizer

# usage code...

But if you want to **contribute** or **edit** the code, then cloning the GitHub repo is the correct approach.

**Final Tips**

* **Use GitHub’s VS Code Integration**: You can also install the official GitHub extension in VS Code for a streamlined experience.
* **Keep an eye on branches**: The master or main branch is usually stable, but sometimes there are development branches with new features.
* **Check the CTGAN docs**: The official docs are in the SDV website.

With these steps, you’ll have the **CTGAN** repository cloned and ready for local development in VS Code. Enjoy exploring and customizing the code!