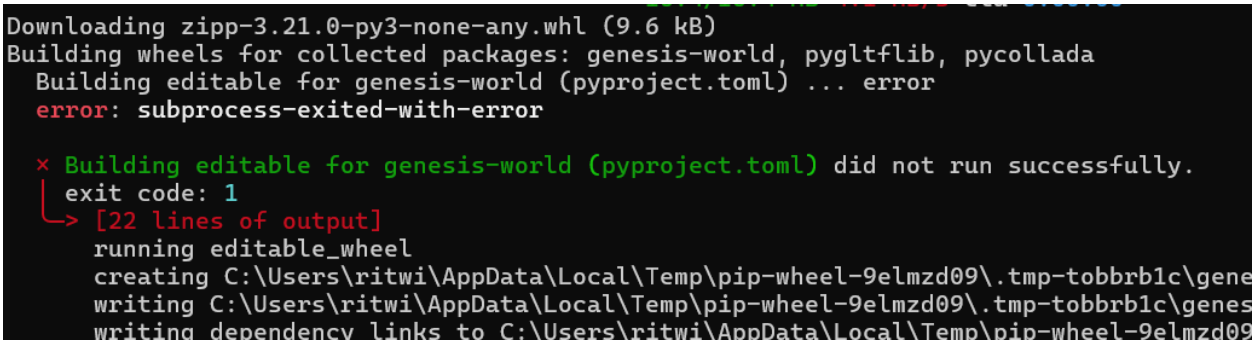
Steps to install Genesis AI

The following steps were followed to avoid the following error:



1. Create the Anaconda Environment:

conda create -n total_robotics python=3.10 -y

conda activate total_robotics

2. Install core dependencies:

pip install taichi gym numpy matplotlib

conda install git

3. Install Microsoft C++ Build Tools:

3.1. Go to the official link: https://visualstudio.microsoft.com/visual-cpp-build-tools/

3.2. Download and run the installer for "Build Tools for Visual Studio".

In the installer:

3.2.1. Select *C++ build tools*

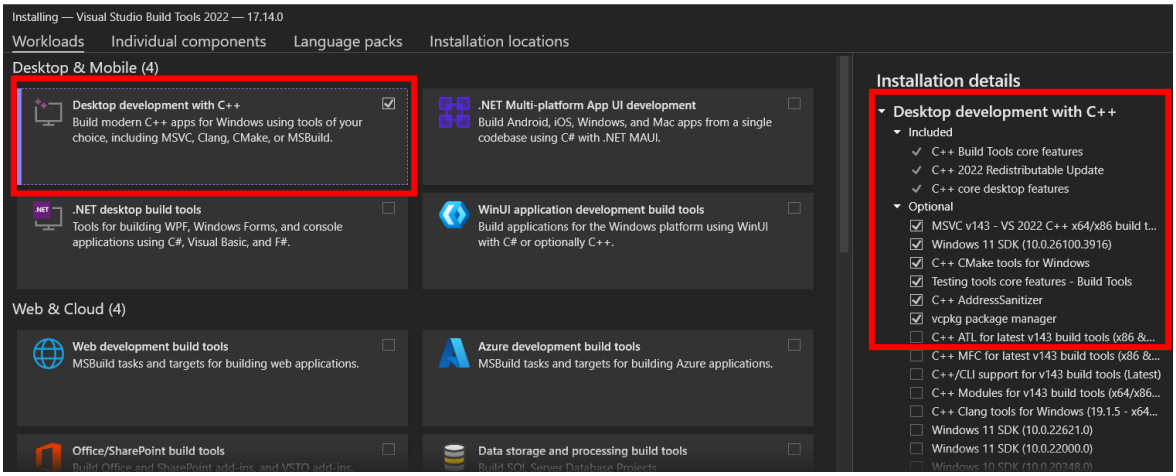
3.2.1.1. Under it, make sure the following workloads are selected:

i. MSVC v14.x (e.g., MSVC v143 for VS 2022)

ii. Windows 10 SDK (or Windows 11, depending on system)

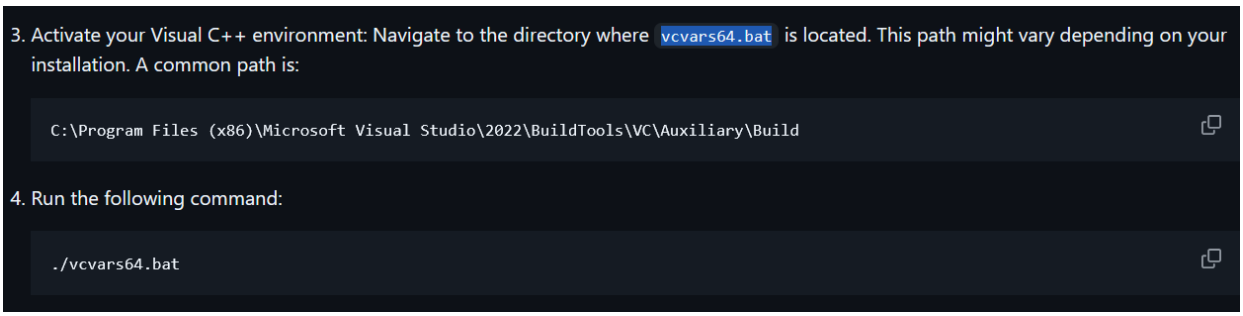
iii. CMake tools for Windows (optional but useful)

Install



4. **Install a Few Required Packages:**
   conda install -c conda-forge pybind11
   conda install -c conda-forge eigen

5. **Run vcvars64.bat File:** Go to the location as shown in the picture below and run the vcvars64.bat file by double click. [Source]



6. **Install gsplat:**
   git clone --recursive https://github.com/nerfstudio-project/gsplat.git
   cd gsplat
   pip install .
   cd..

7. **Install Wheel:**
   pip install --upgrade pip setuptools wheel build

8. **Install PyTorch:**
   For CPU-only (since you're starting with CPU):
   conda install pytorch torchvision torchaudio cpuonly -c pytorch

To use GPU (and have a compatible GPU):
conda install pytorch torchvision torchaudio pytorch-cuda=11.8 -c pytorch -c nvidia

9. **Change sympy version:**
   Pip uninstall sympy
   pip install sympy==1.13.1
10. **Finally install Genesis:**

git clone https://github.com/Genesis-Embodied-AI/Genesis.git
cd Genesis
pip install -e ".[dev]"

11. **Check the Installation:**

Open the file, check_genesis_instalation_status.ipynb in Jupyter Notebook and run. There should not be any errors when executed.

12. **Run Simulation:**

To run any simulation properly, the IDE needs to be opened from the Anaconda prompt and the file location where the simulation files are located.

```
(total_robotics) C:\Users\ritwi\Desktop\total_robotics\genesis_AI_sims>spyder
```

Open the test file, run_test_sim_robot_arm.py in Spyder, and run.