Auto-07p installation in MAC OS

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I followed these steps for Auto07p installation on Mac OS Monterey 12.5, M1 Processor. Though not tested, I feel the procedure should be identical for other MAC operating systems.

1. Install XCode from Apple AppStore. The software is bulky, around 12 GB. A lighter alternative, not tested by me but found in some blogs, is to use XCode command line tools.

2. Get the latest Auto07p. As of today, the Auto is maintained on GitHub at
   https://github.com/auto-07p
   Clone or download the repository. You should also download the manual from
   https://github.com/auto-07p/auto-07p/releases/tag/v0.9.3
   Alternatively, if you have LaTeX installed in your system, you can generate manuals from the downloaded Auto/doc folder.

3. For Auto installation in Mac, there are installation steps in section 1.1.2 of the manual. Follow them religiously. To make this document self-contained, I have copied the commands from the manual below. Paste the `typewriter font` black commands in the terminal.

   a) if you don't have brew in your system, install it. You can find the installation command at https://docs.brew.sh/Installation.

   b) Install Gfortran by typing following in the terminal
      ```
      brew install gfortran
      ```

   c) Install python-based dependencies:
      ```
      brew install python-tk
      pip3 install matplotlib
      ```

   d) The next few commands install plotting abilities for Auto07p. The installation is a bit painful. Keep an eye on the errors when you execute the commands. Depending on your system, you may get some errors and have to install more dependencies.
      ```
      brew install cmake qt@5 coin3d
      brew link qt@5 -force
      export PATH="/usr/local/opt/qt@5/bin:$PATH"
      curl -O -L \
       https://github.com/coin3d/soqt/releases/download/SoQt-1.6.0/soqt-
      1.6.0-src.tar.gz
      tar xf soqt-1.6.0-src.tar.gz
      cd soqt/build
      cmake ..
      make
      sudo make install
      ```

   e) Install user interface toolkit for plotting
      ```
      brew install openmotif
      ```
      The steps 2c,2d, and 2e are optional. They are required for plotting, but you can run an Auto07p code without going through these steps.

4. If you have downloaded/cloned the Auto repository following step 2, proceed to install Auto. Go to the Auto folder, open a terminal in the folder, and write the command
   ```
   ./configure
   ```

5. If you could install the plotting abilities using step:2c-2e, you should be ready to compile Auto. If you faced an error related to PLAUT, you may have had some issues with the plotting abilities installation. Do not worry– you can still compile Auto and run Auto codes without plotting abilities. Type the following in terminal
   ```
   make
   ```

6. If `make` is successful, you can run the preinstalled demos. Read the Auto demos from the manual (chapter 12) and you may start with the cusp demo.

7. (optional) I also like setting up the path in the .zshrc or .bashrc file. Open .zshrc or .bashrc file (the one you have) and add the following lines

   ```
   AUTO_DIR=/Users/arunkumar/CodeRepos/auto07p
   PATH=$AUTO_DIR/cmds:$AUTO_DIR/bin:$PATH
   export AUTO_DIR
   export PATH
   ```

   where you should replace `"/Users/arunkumar/CodeRepos/auto07p"` with the location where you have installed Auto07p. After setting these environment variables, you can type auto in the terminal and execute the desired commands. Alternatively, you would have to source the environment variables every time you want to run Auto07p.