1 Installing ROS on macOS using Robostack

ROS (Robot Operating System) is a flexible framework for writing robot software. Robostack allows you to use ROS on macOS through conda.

1.1 Step 1: Install Miniconda

To get started, you'll need to install Miniconda. You can download it from the following link:
`https://docs.anaconda.com/miniconda/`
Follow the instructions for your system to complete the installation.

1.2 Step 2: Set Up the ROS Environment

Open a new terminal and create a conda environment for ROS using Python 3.8:

```
conda create -n ROS python=3.8
```

Activate the environment:

```
conda activate ROS
```

You should now see `(ROS)` in your terminal prompt, indicating the environment is active.
Next, add the required channels for conda and set strict channel priority:

```
conda config --add channels conda-forge
conda config --add channels robostack
conda config --set channel_priority strict
```

Now, install ROS Noetic Desktop Full and other required tools:

```
conda install ros-noetic-desktop-full
conda install compilers cmake pkg-config make ninja catkin_tools
```

1.3 Step 3: Test Your Installation

To deactivate or activate the environment, run:

`conda deactivate` OR `conda activate ROS`

Now, try running `roscore`:

```
roscore
```

If everything is set up correctly, `roscore` should start successfully.

1.4 Step 4: Running RViz

Here is a step-by-step example of running `roscore` and RViz in two separate terminals:

1. Open the first terminal:

   ```
   conda activate ROS
   roscore
   ```

2. Open the second terminal:

   ```
   conda activate ROS
   rviz
   ```

If RViz doesn't open, you may need to downgrade its version:

```
conda install ros-noetic-rviz==1.14.8
```