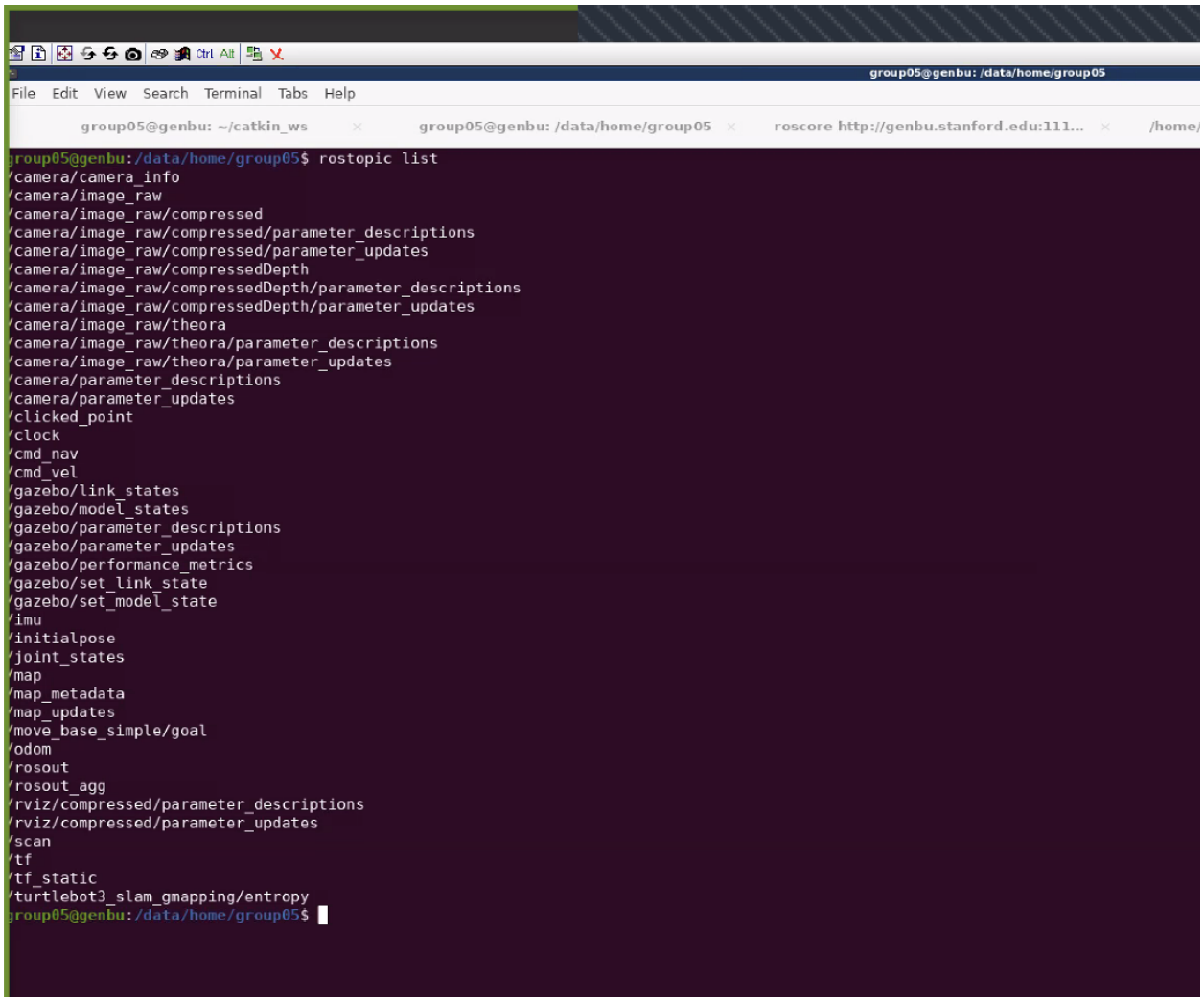
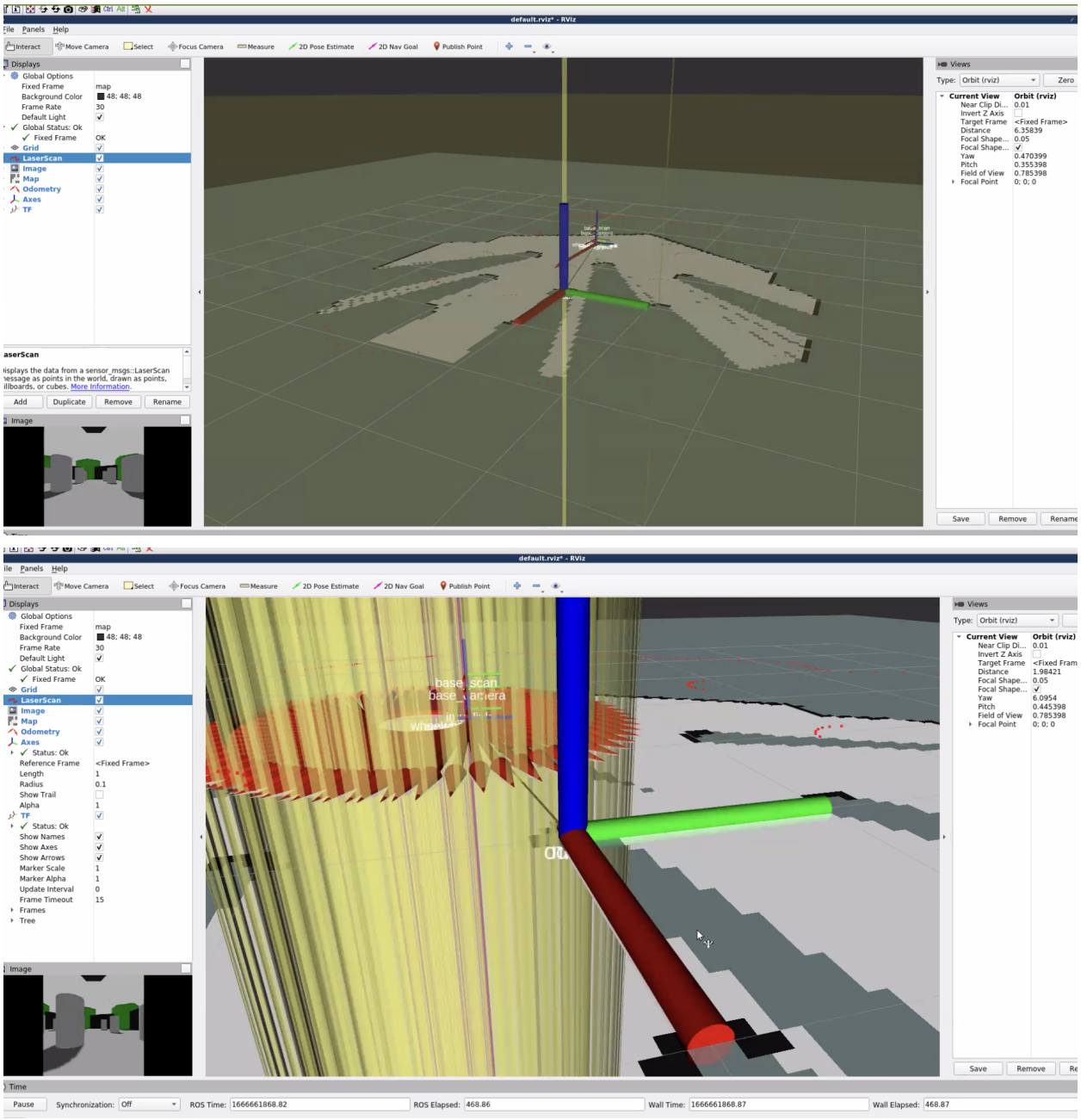
AA274A Section 4 - Oct 23, 2022

Collaborating Students: Josie Oetjen, Karthik Pythireddi, Mengyuan Wang
password: aa274g05

Problem 1: Once this is all running, which rostopics are available? Paste this list in your submission



Problem 2: Take a screenshot of your rviz display after all of the above are running. Teleop the robot (using roslaunch turtlebot3 teleop turtlebot3 teleop key.launch) to move it to a different place and see your rviz display change.



Problem 3: Paste the contents of your created .rviz configuration file into your submission.

```
Desktop         Music  rviz_config_group05_mjk.rviz
group05@genbu:~$ cat rviz_config_group05_mjk.rviz
Panels:
  - Class: rviz/Displays
        Help Height: 78
        Name: Displays
        Property Tree Widget:
        Expanded:
        - /Global Options1
        - /Status1
        - /Axes1
        - /TF1
        Splitter Ratio: 0.5
        Tree Height: 685
  - Class: rviz/Selection
        Name: Selection
  - Class: rviz/Tool Properties
        Expanded:
        - /2D Pose Estimate1
        - /2D Nav Goal1
        - /Publish Point1
        Name: Tool Properties
        Splitter Ratio: 0.5886790156364441
  - Class: rviz/Views
        Expanded:
        - /Current View1
        Name: Views
        Splitter Ratio: 0.5
  - Class: rviz/Time
        Name: Time
        SyncMode: 0
        SyncSource: LaserScan
Preferences:
  PromptSaveOnExit: true
Toolbars:
  toolButtonStyle: 2
Visualization Manager:
  Class: ""
  Displays:
        - Alpha: 0.5
```

Cell Size: 1
Class: rviz/Grid
Color: 160; 160; 164
Enabled: true
Line Style:
Line Width: 0.029999999329447746
Value: Lines
Name: Grid
Normal Cell Count: 0
Offset:
X: 0
Y: 0
Z: 0
Plane: XY
Plane Cell Count: 10
Reference Frame: <Fixed Frame>
Value: true
- Alpha: 1
Autocompute Intensity Bounds: true
Autocompute Value Bounds:
Max Value: 10
Min Value: -10
Value: true
Axis: Z
Channel Name: intensity
Class: rviz/LaserScan
Color: 255; 255; 255
Color Transformer: Intensity
Decay Time: 0
Enabled: true
Invert Rainbow: false
Max Color: 255; 255; 255
Min Color: 0; 0; 0
Name: LaserScan
Position Transformer: XYZ
Queue Size: 10
Selectable: true
Size (Pixels): 3
Size (m): 0.009999999776482582
Style: Flat Squares
Topic: /scan
Unreliable: false
Use Fixed Frame: true
Use rainbow: true

Value: true
- Class: rviz/Image
Enabled: true
Image Topic: /camera/image_raw
Max Value: 1
Median window: 5
Min Value: 0
Name: Image
Normalize Range: true
Queue Size: 2
Transport Hint: compressed
Unreliable: false
Value: true
- Alpha: 0.699999988079071
Class: rviz/Map
Color Scheme: map
Draw Behind: false
Enabled: true
Name: Map
Topic: /map
Unreliable: false
Use Timestamp: false
Value: true
- Angle Tolerance: 0.10000000149011612
Class: rviz/Odometry
Covariance:
Orientation:
Alpha: 0.5
Color: 255; 255; 127
Color Style: Unique
Frame: Local
Offset: 1
Scale: 1
Value: true
Position:
Alpha: 0.30000001192092896
Color: 204; 51; 204
Scale: 1
Value: true
Value: true
Enabled: true
Keep: 100
Name: Odometry
Position Tolerance: 0.10000000149011612

Queue Size: 10
Shape:
Alpha: 1
Axes Length: 1
Axes Radius: 0.10000000149011612
Color: 255; 25; 0
Head Length: 0.30000001192092896
Head Radius: 0.10000000149011612
Shaft Length: 1
Shaft Radius: 0.05000000074505806
Value: Arrow
Topic: /odom
Unreliable: false
Value: true
- Alpha: 1
Class: rviz/Axes
Enabled: true
Length: 1
Name: Axes
Radius: 0.10000000149011612
Reference Frame: <Fixed Frame>
Show Trail: false
Value: true
- Class: rviz/TF
Enabled: true
Frame Timeout: 15
Frames:
All Enabled: true
base_camera:
Value: true
base_footprint:
Value: true
base_link:
Value: true
base_scan:
Value: true
caster_back_link:
Value: true
imu_link:
Value: true
map:
Value: true
odom:
Value: true

```
        wheel_left_link:
        Value: true
        wheel_right_link:
        Value: true
        Marker Alpha: 1
        Marker Scale: 1
        Name: TF
        Show Arrows: true
        Show Axes: true
        Show Names: true
        Tree:
        map:
        odom:
        base_footprint:
        base_link:
                base_camera:
                {}
                base_scan:
                {}
                caster_back_link:
                {}
                imu_link:
                {}
                wheel_left_link:
                {}
                wheel_right_link:
                {}
        Update Interval: 0
        Value: true
Enabled: true
Global Options:
        Background Color: 48; 48; 48
        Default Light: true
        Fixed Frame: map
        Frame Rate: 30
Name: root
Tools:
        - Class: rviz/Interact
        Hide Inactive Objects: true
        - Class: rviz/MoveCamera
        - Class: rviz/Select
        - Class: rviz/FocusCamera
        - Class: rviz/Measure
        - Class: rviz/SetInitialPose
```

```
      Theta std deviation: 0.2617993950843811
      Topic: /initialpose
      X std deviation: 0.5
      Y std deviation: 0.5
      - Class: rviz/SetGoal
      Topic: /move_base_simple/goal
      - Class: rviz/PublishPoint
      Single click: true
      Topic: /clicked_point
  Value: true
  Views:
      Current:
      Class: rviz/Orbit
      Distance: 1.9274731874465942
      Enable Stereo Rendering:
      Stereo Eye Separation: 0.05999999865889549
      Stereo Focal Distance: 1
      Swap Stereo Eyes: false
      Value: false
      Field of View: 0.7853981852531433
      Focal Point:
      X: 0
      Y: 0
      Z: 0
      Focal Shape Fixed Size: true
      Focal Shape Size: 0.05000000074505806
      Invert Z Axis: false
      Name: Current View
      Near Clip Distance: 0.009999999776482582
      Pitch: 0.4753982424736023
      Target Frame: <Fixed Frame>
      Yaw: 5.790400981903076
      Saved: ~
Window Geometry:
  Displays:
      collapsed: false
  Height: 976
  Hide Left Dock: false
  Hide Right Dock: false
  Image:
      collapsed: false
  QMainWindow State:
000000ff00000000fd0000000400000000000001560000033 6fc020000000afb000000120053006
5006c006500630074006900 6f006e00000001e10000009b0000005c00fffffffb0000001e0054006f
```

006f006c002000500072006f0070006500720074006900650073020000001ed000001df00000185
000000a3fb0000001200560069006500770073002000054006f006f02000001df00000211000001
8500000122fb000000200054006f006f006c002000500072006f007000650072007400690065000
7300320300000288000011d000002210000017afb00000010004400690073007000006c0061007
90073010000003b00000336000000c700fffffffb000000200073006500c006500630074006900 6
f006e002000620075006600660065007202000000138000000aa0000023a00000294fb00000014
00570069006400650053007400650072006500f02000000e6000000d2000003ee0000030bfb0
000000c004b0069006e006500630074020000001860000001060000030c00000261fb0000000c00
430061006d00650072006100000002ac000000c50000000000000000fb0000000a0049006d006
1006700650300000000000002bb00000156000000c500000001000001 0f00000336fc02000000
03fb0000001e0054006f006f006c002000500072006f0070006500720074006900650073010000
0041000000078000000000000000fb0000000a005600690065007700073010000003b000003360
00000a000fffffffb0000001200530065006c006500630074006900 6f006e010000025a000000b20
000000000000000000000020000490000000a9fc0100000001fb0000000a0056006900650077
0073030000004e00000080000002e1000001970000000300007800000003efc0100000002fb0
00000080054006900 6d006501000000000000078000000 30700fffffffb000000080054006 9006d0
0650100000000000004500000000000000000000000050f0000033600000004000000 0400000008
00000008fc000000010000000200000001000000 0a0054006f006f006c00730100000000ffffffff00
00000000000000
  Selection:
      collapsed: false
  Time:
      collapsed: false
  Tool Properties:
      collapsed: false
  Views:
      collapsed: false
  Width: 1920
  X: 0
  Y: 0
group05@genbu:~$

Problem 4: Change the Marker to look like a normal red sphere and place it 1m in front of the robot (think about which axis this corresponds to), include a screenshot of your marker and its placement in your submission.