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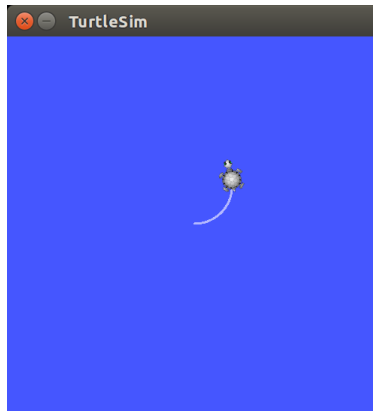# 16-681 Task 4: ROS Familiarization

1.

Figure 1: Result of message published to cmd_vel

When a message is published using the ROS command "rostopic pub" on the cmd_vel topic, Turtlesim, which is subscribed to the topic, receives the message and moves the Turtle at the specified linear and rotational velocity.

2.

Figure 2: Smileyface

When we use "rosservice call" to call the "spawn" service, we specify input arguments that, as shown by "rosservice type spawn — rossrv show", specify the position, angular heading, and name of the new turtle. This turtle is shown in TurtleSim, and the service returns with the turtle name. A ROS service allows for two-way communication, whereas topics can only be published / subscribed; these are one-way messages.

3.

Figure 3: Smileyface made with draw_smiley.py

It's kind of ugly, but I modified the original *draw_smiley* to draw a smiley face similar to the one in question 2. Code is attached.