Installation Instructions for Ros and Gazebo:

Note: The instructions are for Ubuntu 16.04, and other versions of linux might require minor changes. As the first step, please install Ubuntu 16.04 on your laptop (you can make it dual boot, but installing on a virtual machine does not work well).

1. Log into your Ubuntu 16.04 system, and open the terminal (Ctrl+Alt+T by default)

2. We first need to install RoS, which stands for Robot Operating System onto our machines. This software will help us completely control the robot in both simulated as well as real world environments.

3. Please follow the instructions given at http://wiki.ros.org/kinetic/Installation/Ubuntu to install RoS onto your Ubuntu system. Do not forget to install the dependencies given at the end. You just have to copy the command, paste it in your terminal window and press enter each time. Do this for all the commands given on the page.

   Note: **Make sure you install just the FULL DESKTOP version of RoS** (1st option under the 1.4 Installation section on the page). Do not copy any other commands in this section.

4. After RoS has been installed, we need to install Gazebo for RoS. This is a simulator which can be used to visualize the movements of our robot.

   Turtlebot, which is the what our robot is called, already has a package available for download and install. This package will enable us to visualize and play with the turtlebot in its simulated environment.

   To install the packages, type the following in your terminal (Again, Ctrl+Alt+T by default):

   sudo apt-get install ros-kinetic-turtlebot-* -y

5. That's it! You have successfully finished installing RoS and Gazebo onto your Ubuntu 16.04 system. You can explore the Gazebo environment if you like. Just open up a terminal and type "gazebo". The simulator should start up an empty world which you can modify yourself for fun.