1 Robot System Description

First, choose a robotic system that takes input from sensors and produces output in a non-trivial way to produce some outcome. Your research is a good place to look for finding a good problem. Answer the following questions about your problem and the robot system.

1. What problem will your robot be solving? Define this formally.
2. What sensors will be used in solving this problem?
3. What actuators does your system have?
4. What sensory processing will you use to give inputs to your control system?
5. What control, planning, or other data processing is necessary in creating your solution?
6. What other important details of your system should we know about that are not answered in the above questions?

2 ROS Architecture

Now that you have your problem and system described, we want you to sketch out a ROS architecture for this problem. Your description does not need to give all details, but should be a clear blueprint for implementing the system in software. Make sure to address the following questions in your response.

1. What nodes would you create in making this architecture?
2. What topics or services would you use in creating your solution? Name all message types when defining the topic message types. If these are custom message types, define them in the ROS syntax.
3. Can you make use of any standard message types or packages already offered in ROS? (Checkout ros.org for help in finding common ROS packages)
4. Draw a diagram of the interconnection of all of your nodes and topics that you defined above. Make sure to clearly label node and topic names.