Assignment 1 ROS

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Identify at least 3 Practical robot applications of Fundamental Datatype and Collection Datatype?

Fundamental Datatype
1. Every environmental value can be expressed as a basic fundamental datatype, like distance, velocity, presence of object or messages in form of integer, float, boolean or string are transferred or calculated in form of these basic datatype.
2. Communication within to displays messages to the users. A robot with display would use strings to present the result or show error.
3. Calculations are performed in any Robot using the basic integers or floats.

Collection Datatype
1. To present the complex data like 2D list representing the environment.
2. Dictionary may be used to define rules within a robot.
3. Tuples can be used to log data.

Identify the Importance of variables in the filed of robotics.

Variables within robotics field have very high importance because robotics relies on the outside environment, and as the outside environment is not fixed variables are very useful. Even in static environment, a robot has code encoded which may need to be calibrated according to the respective static environment. And in case of dynamic environment we need to analysis the change, and as the values keep changing, we use variables which allow to update the data without entering the data again and again throughout every instance in the code. Example, a change in velocity from 20 to 30 need to be updated at a single place, and wherever the velocity is used, the updated value will apply.