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Project Title: Mobile Manipulator for Automated Delivery for Essentials in Hospitals

Objective:

In this project, the purpose is to build a mobile manipulator to collect food and medicines from the dispatch center and deliver them to the hospital cabins. The robot model will be demonstrated in a simulated hospital environment inside the CoppeliaSim software and controlled via a remote API on MATLAB.

Contribution:

In this Vrep simulator, for the simulation process, we need to have a robot model and design a virtual hospital model that fulfills our purpose of this project. In this project, I am handling this part. CoppeliaSim software has an enriched library of different robot models and components like furniture, infrastructure, etc.

For our project, we need a robot model that works as a line follower and also has a robotic arm implemented as it has to pick up an object from specific places and drops it at the destination. For example, the KUKA YouBot model will serve our purpose. Also, we have the facility to implement extra features like vision sensor, proximity sensor, etc., in the robot model if necessary.

For the hospital environment, we had decided to design several cabins-each having an identical infrastructure and furniture. Besides, we have designed sliding door facilities at the entrance that will open automatically for the robot. We want the simulated hospital to have a close resemblance to the real one. The controlling and coding part is our future concern and we are working on that.