Panel Build Readme

**Goal**: To extract a given order from inventor and assemble said order using a hybrid robotic system in the panel build area.

**Materials**:

* 2 UR10e robots
* Robotiq Hand-e gripper
* Kolver screwdriver
* 2 Kolver screw presentors
* Station for robots and panel
* Storage bin to store parts for orders

**Summary**:

Coordinates of part locations are extracted from inventor and stored in the oracle database in the table Y\_Panel\_Build\_Positions. Parts required for each order are stored in the storage bin and their coordinates are stored in the table Y\_Panel\_Build\_Storage\_Locations. There are multiple other tables in the database that begin with Y\_Panel\_Build that store information such as part sizes, hole locations, robot plane coordinates, etc. After an order is extracted, there is a program called PanelBuild\_V1.1 (may be a newer version) that gets the data from the database and sends it to the robots. The robots then begin their own programs (gripper: \_NewPickPart.urp; screwbot: \_NewScrewPart.urp). The gripper is responsible for grabbing parts from the storage bin and placing them in the correct positions on the panel. The screwbot is responsible for getting the proper screw and tightening down the parts. The process runs one part at a time until no more parts remain.

For a more in-depth understanding of the project, continue reading the rest of the documentation.