States:

1. **Forward**: The robot will move forward alongside a wall. We will use a tolerance of +/- 2 cm to keep the robot in a range of 18-22 cms from the wall. If the robot moves closer than 18 cm, it goes to adjust right. If the robot moves farther than 22 cm, it goes to adjust left. If it detects a wall in front or loses a wall to the side, it goes to stop.
2. **Adjust Left**: Slightly adjusts left. Used to get back within tolerance range. Will make the robot veer left, before straightening back out. When the adjust left sequence is run, robot goes back to the forward state.
3. **Adjust Right**: Slightly adjusts right. Used to get back within tolerance range. Will make the robot veer right, before straightening back out. When the adjust right sequence is run, the robot goes back to the forward state.
4. **Stop**: The robot stops because it has either detected a wall in front of it, or lost track of a side wall. If a wall is in front, goes to the inside turn state. If it loses track of the side wall, it goes to outside turn state.
5. **Inside Turn**: Inside turn is detected. Algorithm to make sure the robot turns according to inside turn rules.
6. **Outside Turn**: Outside turn is detected. Algorithm to make sure the robot turns according to outside turn rules.

* For the turns, the robot will come to a stop, turn in place, and then continue going forward. We may need two stop states depending on how far we need the robot to travel, but for now, we will try to stick to one stop state.
* Adjust Left and Right will slightly move the robot each time the state is entered (maybe 0.5 cms, or 1 cm). This will make the robot consistently within the target distance

Outside Turn

Inside Turn

Stop

Adjust Right

Adjust Left

Forward