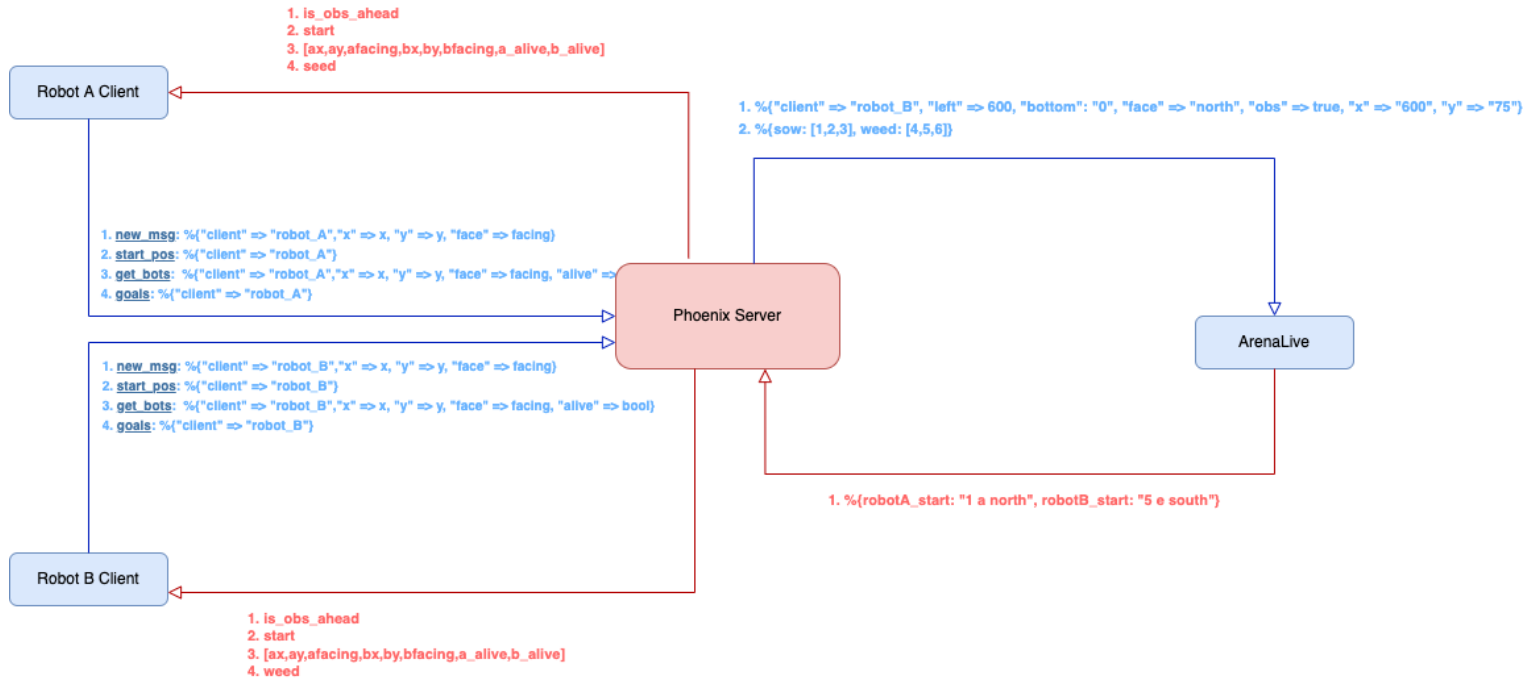
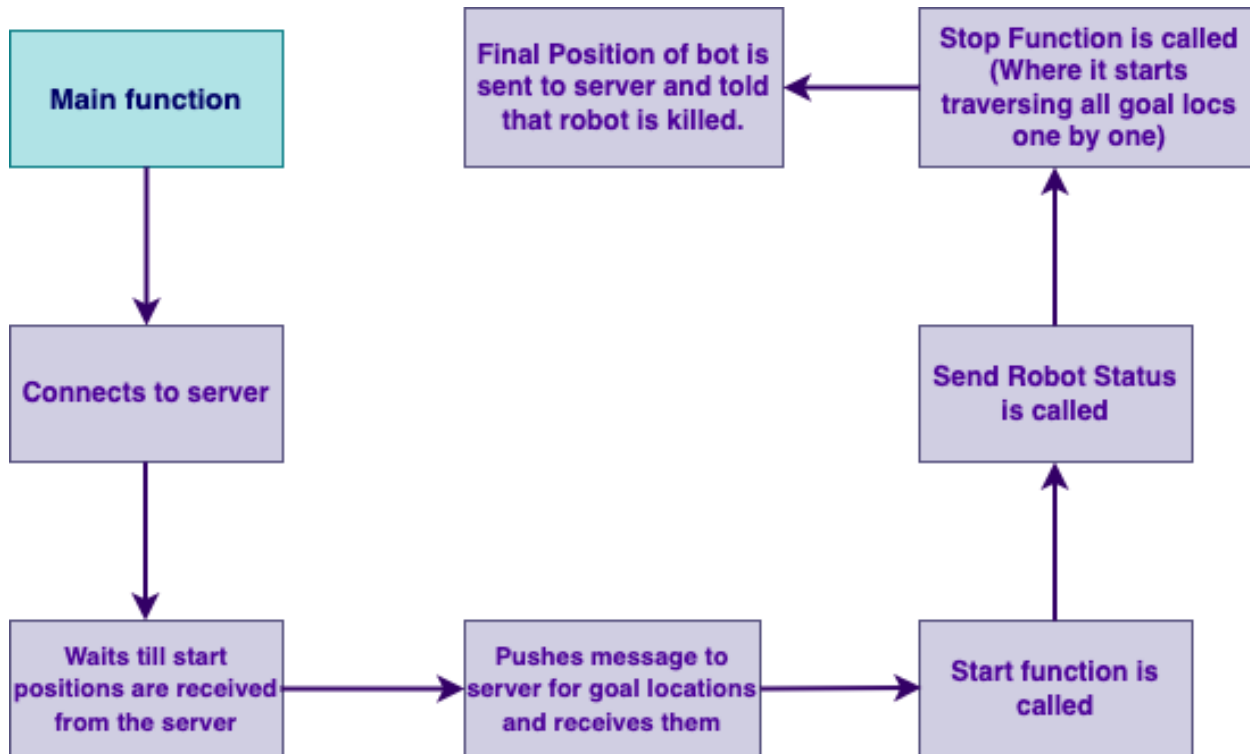


ReadMe.pdf

Various Messages Exchanged between clients and server:



Main Function for both the clients:



1. We have set up a **GenServer** in the Phoenix server project. Using this server we are storing the **current states/position** of both robots. Whenever both the robots change their position or direction, they send a message to the server with the updated positions.
2. Now, to avoid a **crash** they also receive the current position of the other robot when it sends its current position. We have set up conditions to avoid crashes for both the bots in the client logic based on the position it receives for the other robot.
3. We are also using **Mutex** to prevent deadlocks and maintain proper exchanges of messages between robot clients. **GenServer** is started when any client connects to the server and asks for the starting positions.
4. We read the csv files with plant positions whenever any client pushes the message "**goals**" and they receive the weed/seed based on their working.
5. When the clock is started the start positions for both robots are captured and broadcasted to **robot:update** and using the **handle_info** callback the locations are stored to the **GenServer**.
6. When bots call "**get_bots**" **handle_in** we also check if both bots are killed or not. If yes then we broadcast **stop_timer** on **timer:update**.

Messages exchanged between clients and server:

1. **new_msg**: `%{"client" => "robot_A", "x" => x, "y" => y, "face" => facing}`
2. **start_pos**: `%{"client" => "robot_A"}`
3. **get_bots**: `%{"client" => "robot_A", "x" => x, "y" => y, "face" => facing, "alive" => bool}`
4. **goals**: `%{"client" => "robot_A"}`

1. **New_msg** is for obstacle positions.
2. **Start_pos** is for sending start positions for the respective client/robot.
3. **Get_bots** is for sending clients current position and storing it in **GenServer** and sending the position of other robot in return from **GenServer**.
4. **Goals** Is for sending goal locations to respective clients. (Since we are using seeding mechanism on one robot and weeding on other, we send goal locations based on that to the client robot).