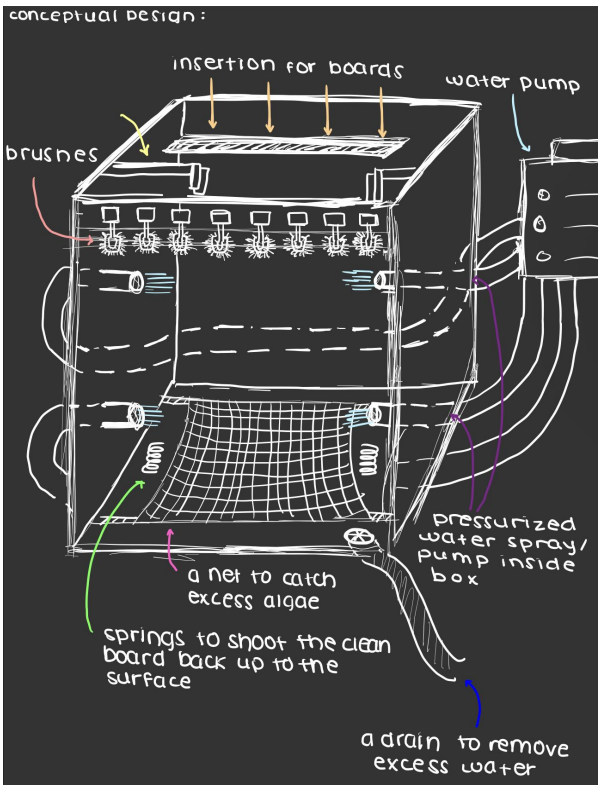
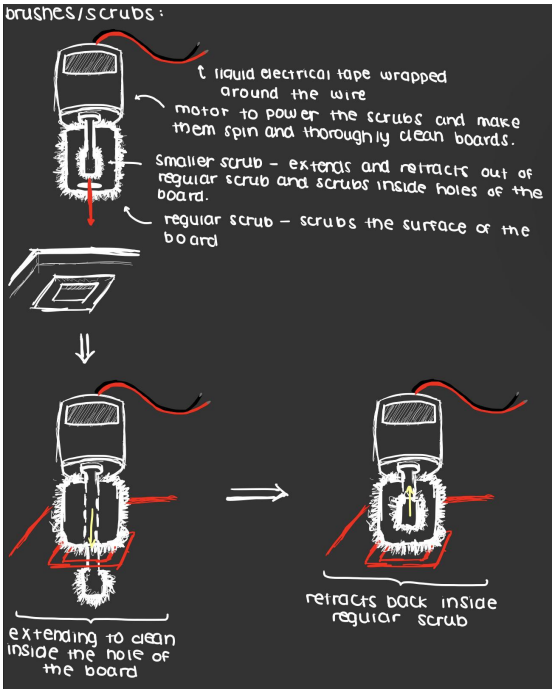
Mechanical

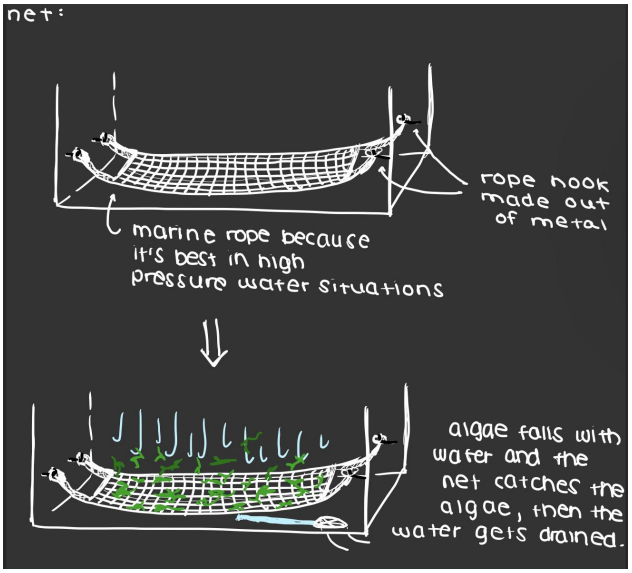
Concept Drawing:



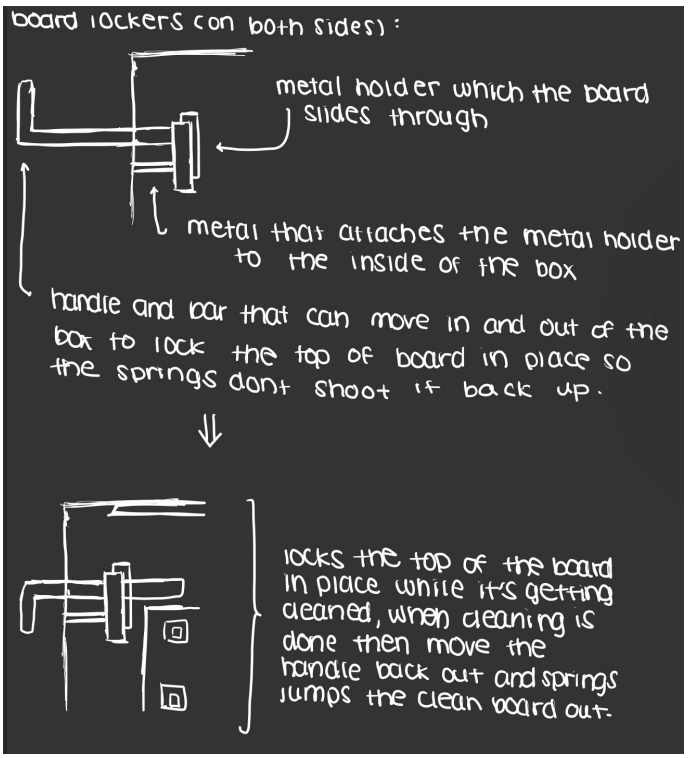
Detailed Design:



net:



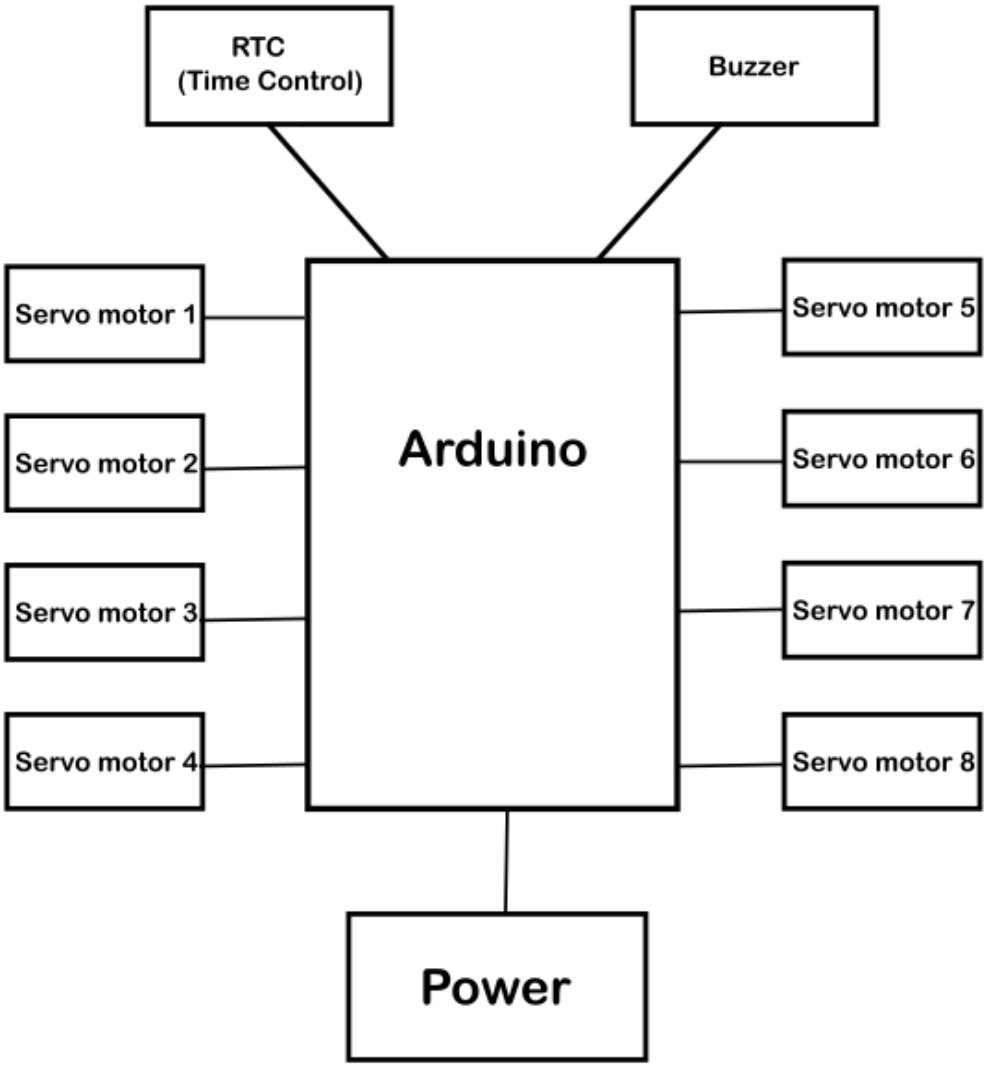
board lockers (on both sides):



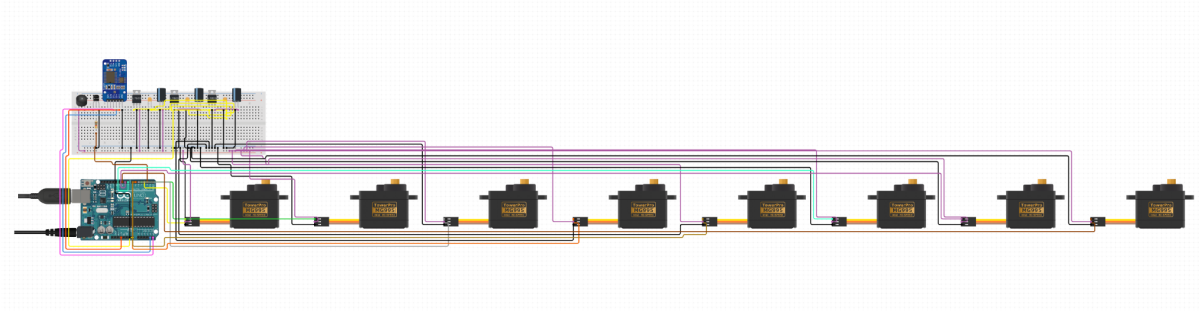
Electrical

MOTOR CONTROLLING SYSTEM

Concept Drawing:



Detailed Design:



Bill of Materials

https://docs.google.com/spreadsheets/d/1G0AfbXms_hg3lB_87F8AYCK9aX6eFgQmVM1JWmpSi6o/edit?usp=sharing

List of Equipment

https://docs.google.com/spreadsheets/d/1p9NhGJKKpr2z5bJGf_ZCSCLKlnf8QsiguEM6yyANCuw/edit?usp=sharing

List of the Project Risks:

RISK	SEVERITY	LIKELIHOOD	MITIGATION/CONTINGENCY
Cost	High	Medium	Using cheaper materials - instead of eight motors and scrubs to scrub boards, use four to go up and down the boards.
Waterproof Materials	High	Low	Finding only materials that are waterproof or that we can make waterproof - like wrapping liquid electrical tape around wires.
Block the Drain	Medium	Medium	Periodically check the water pipes, or periodically pour the solvent into the water pipes
Replacement of Brush Heads	High	High	Each brush head is designed to be easily replaced, and before using this device, prepare several brush heads in advance

Prototyping Test Plan:

TEST ID	TEST OBJECTIVE (WHY)	DESCRIPTION OF PROTOTYPE / BASIC TEST METHOD (WHAT)	DESCRIPTION OF RESSTULS - HOW THEY'LL BE USED	ESTIMATED TEST DURATION AND PLANNED START DATE (WHEN)
1	**Circuit Functional**	**Connect the circuit with the power after programming.**	**If all the components work well, the result is successful.**	**2022-10-29**
2	**Brushes Functional**	**Connect the circuit with the brushes to see if all the inner and outer brushes work well.**	**If all the brushes turn well, the result is successful.**	**2022-11-05**
3	**Water tubes Functional**	**Connect all the water tubes with the water pump to see if**	**If none of the water tubes leak, the result**	**2022-11-12**

		any of the tubes leak.	**is successful.**	
4	**Conntection of all parts Functional**	**Place water tubes, pumps, circuits, brushes into the closed machine to see if all the parts are well connected.**	**If all the parts do their jobs well (no leaking, no disconnecting, rotating well), the result is successful.**	**2022-11-19**
5	**Switches Functional**	**Add switches and LCD to let the users control the machine. The test is about the added switches.**	**If the switches attain all the requirements, the result is successful.**	**2022-11-26**