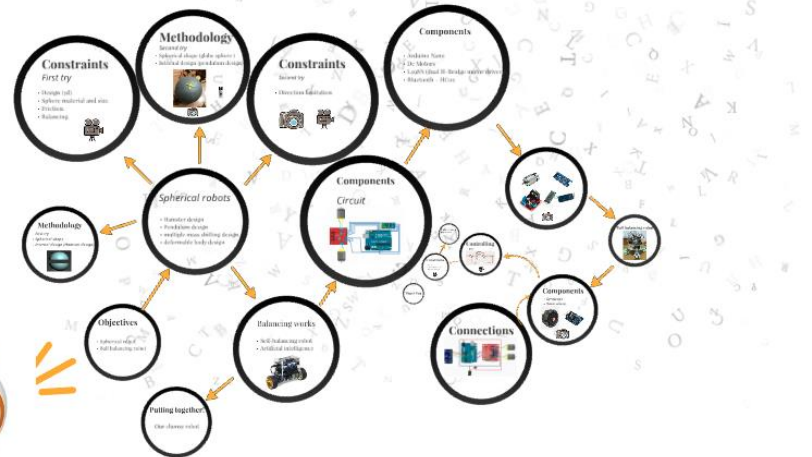


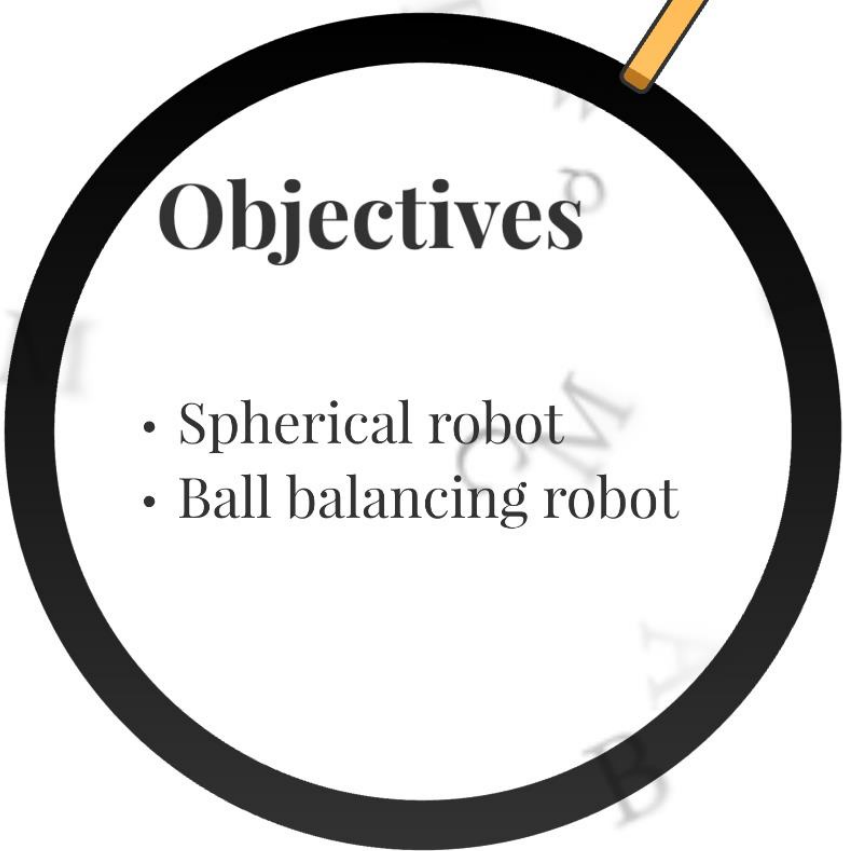
Clumsy Robot

Supervisor : Dr. Ashraf Armoush

Presented by:
Sally Salous
Safaa Omar

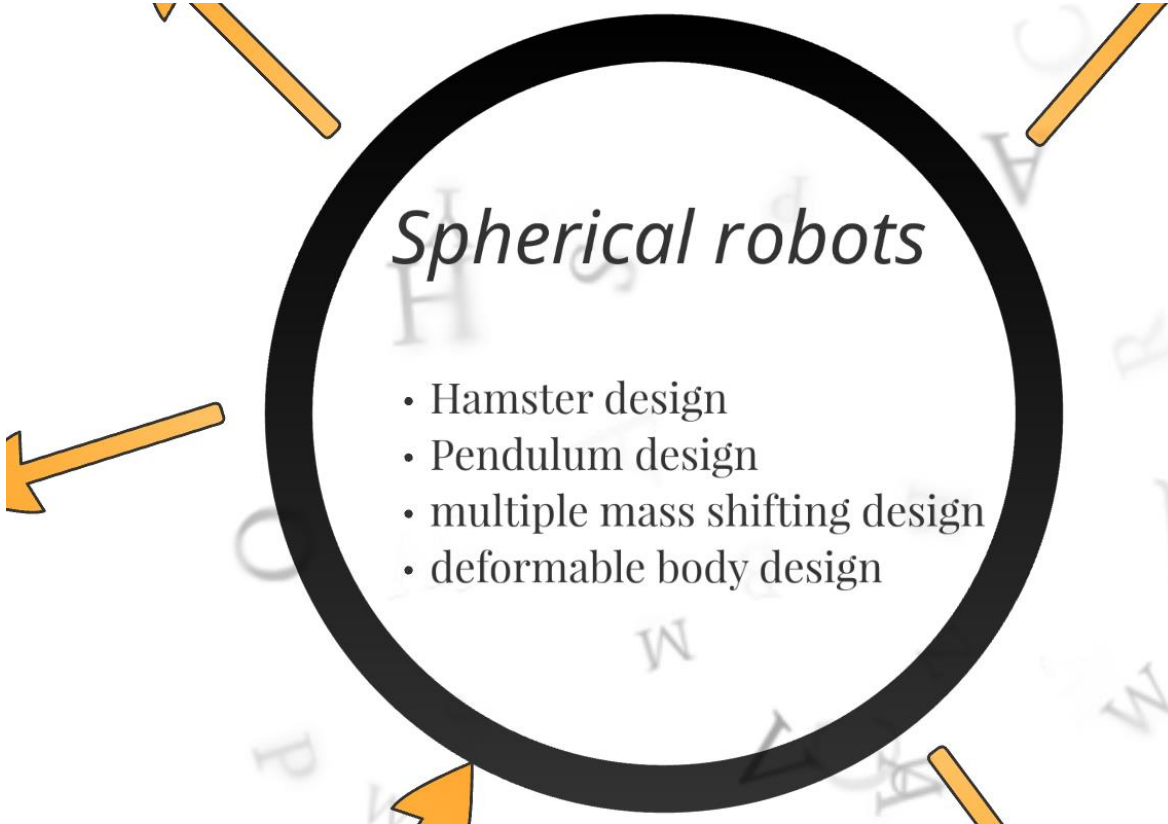
Robot





Objectives

- Spherical robot
- Ball balancing robot



Spherical robots

- Hamster design
- Pendulum design
- multiple mass shifting design
- deformable body design

Balancing works

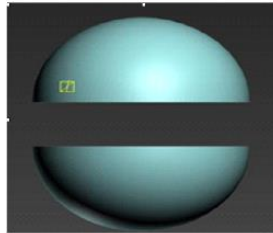
- Self-balancing robot
- Artificial intelligence



Methodology

First try

- *Spherical shape*
- *Internal design (Hamster design)*



Constraints

First try

- Design (3d).
- Sphere material and size.
- Friction.
- Balancing.



Met

Second try

- Spherical
- Internal c



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lobe sphere)
endulum design)



Constraints

Second try

- Direction limitation.

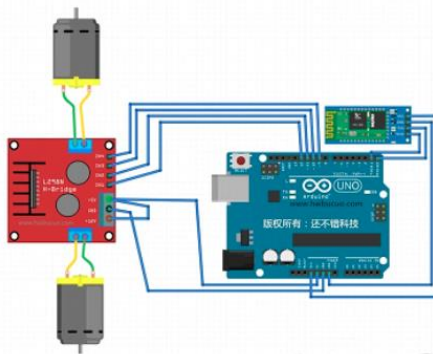


- Ardui
- Dc M
- L298N
- Bluet



Components

Circuit



Future work

Whatever it takes
- Educational
- Entertainment

Constrains

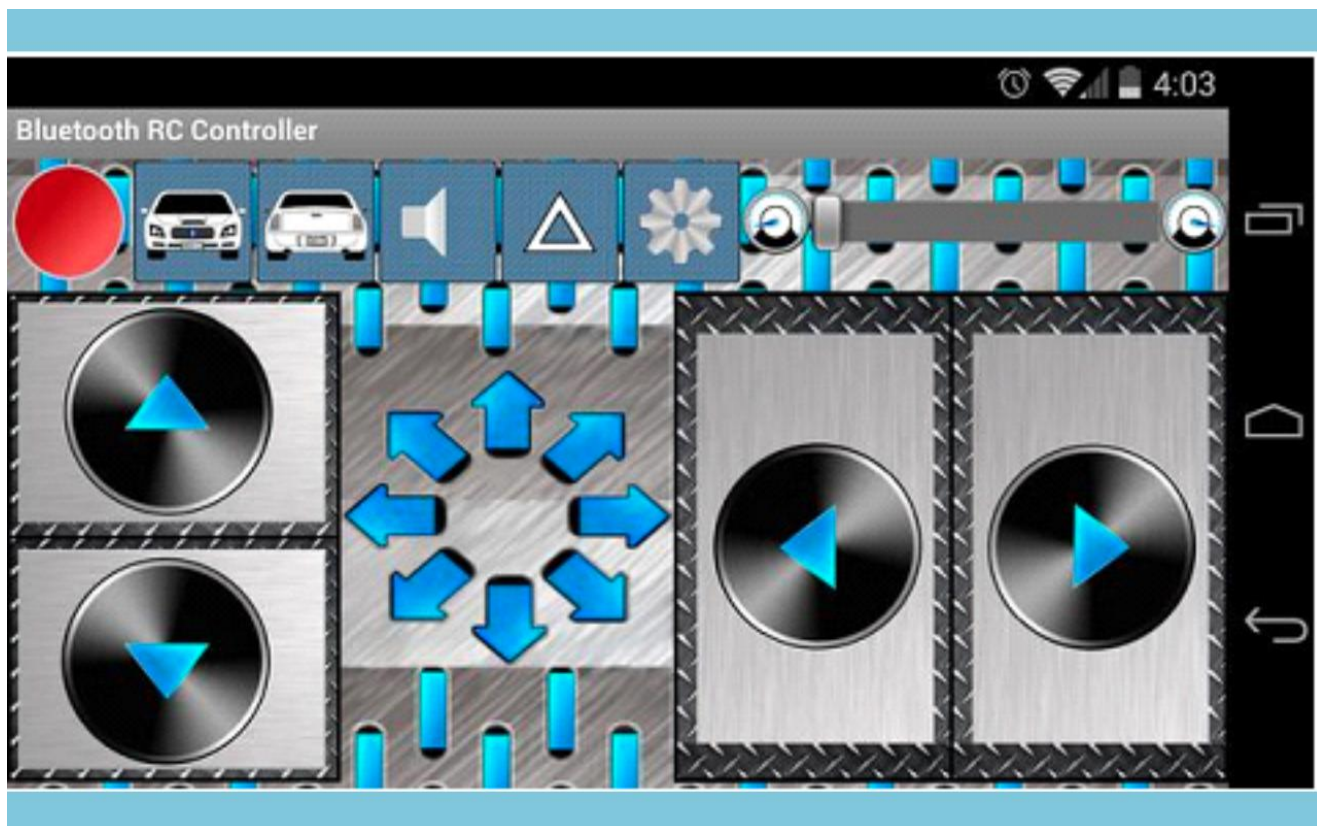
- Wheels
- rotation if the ball
- design constrains

Con - PID



Components

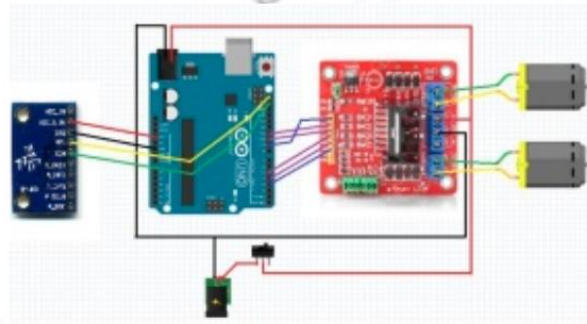
- Arduino Nano
- Dc Motors
- L298N (dual H-Bridge motor driver)
- Bluetooth – HCo5



Ball balancing robot



Connections



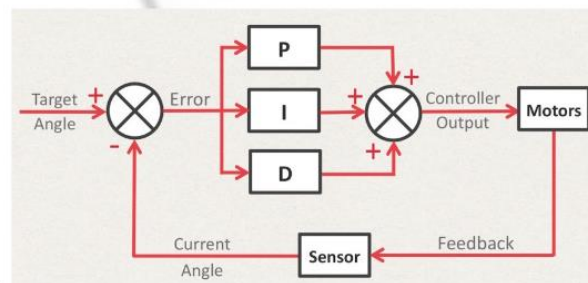
• Omni wheels





ver it takes
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Controlling - PID





Constrains



Future work

Whatever it takes

- Educational
- Entertainment