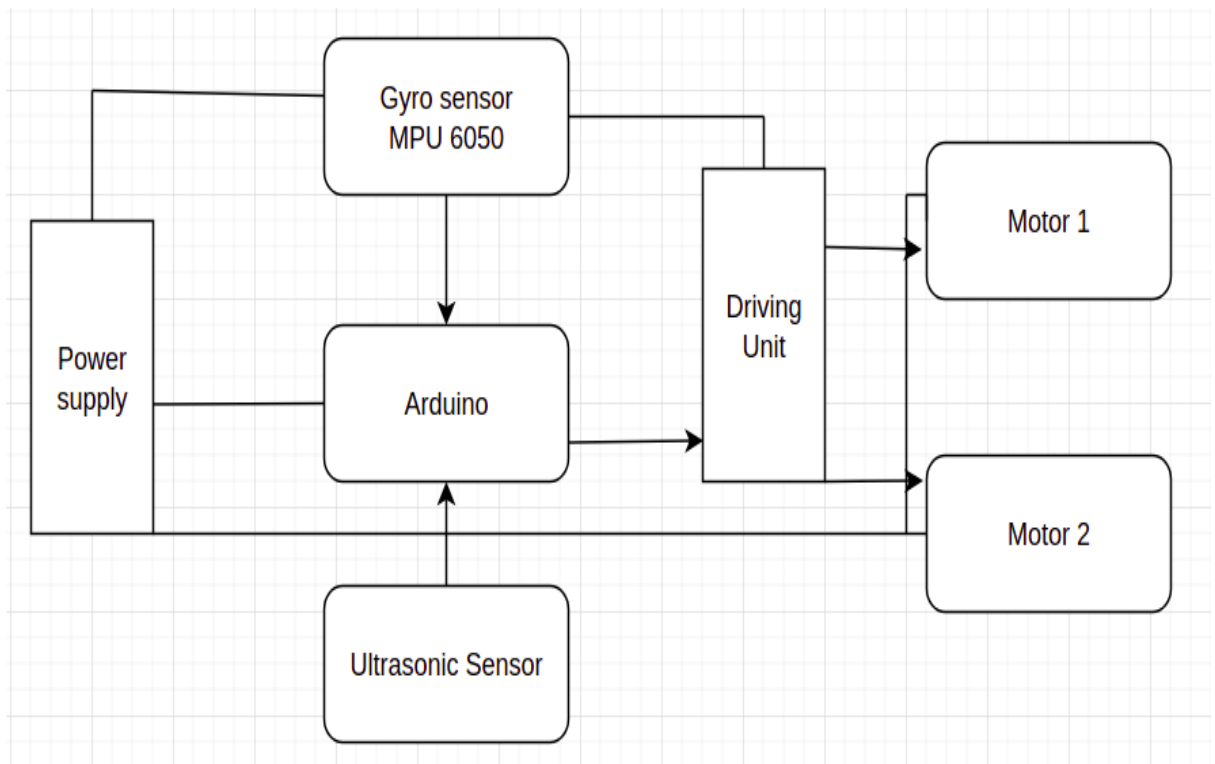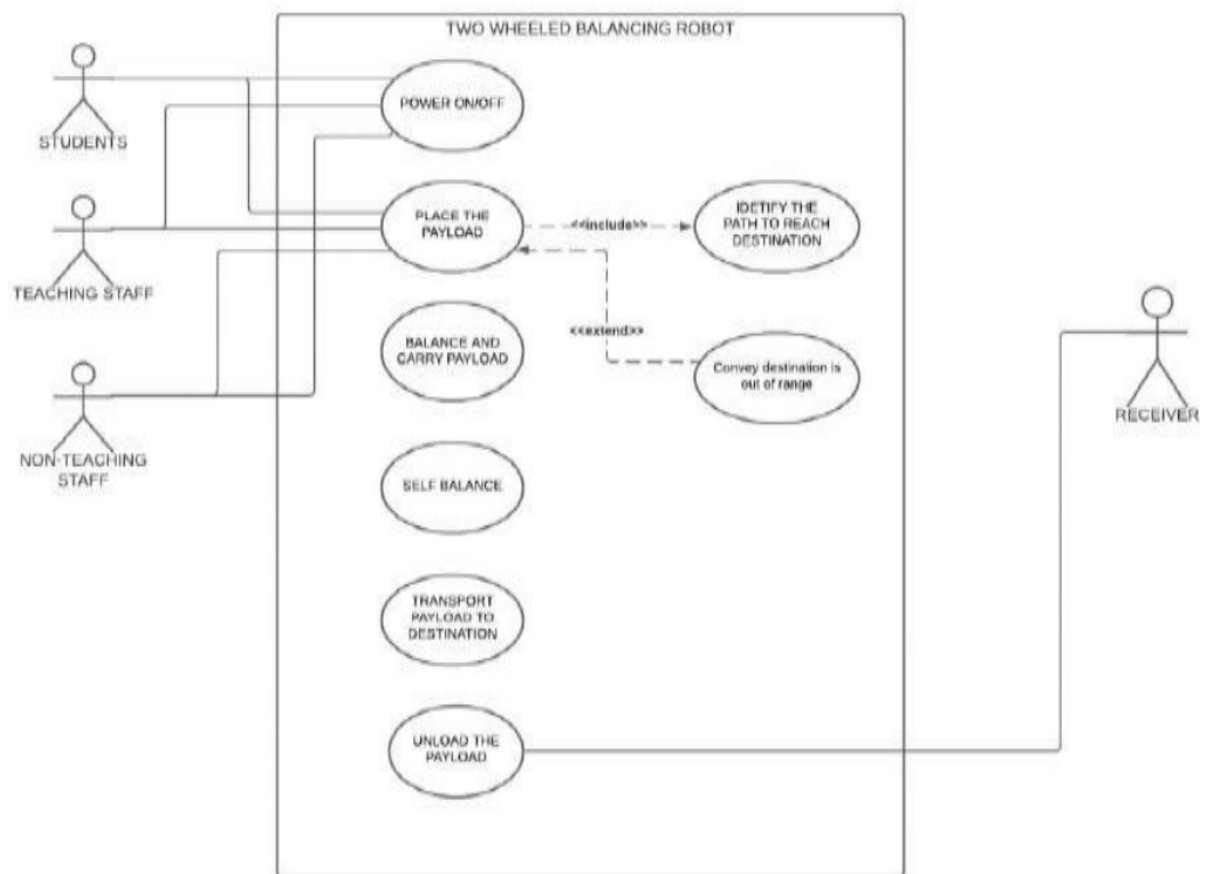# Flow-charts:

1. Behavioural diagrams:

1.1 Component Diagram:

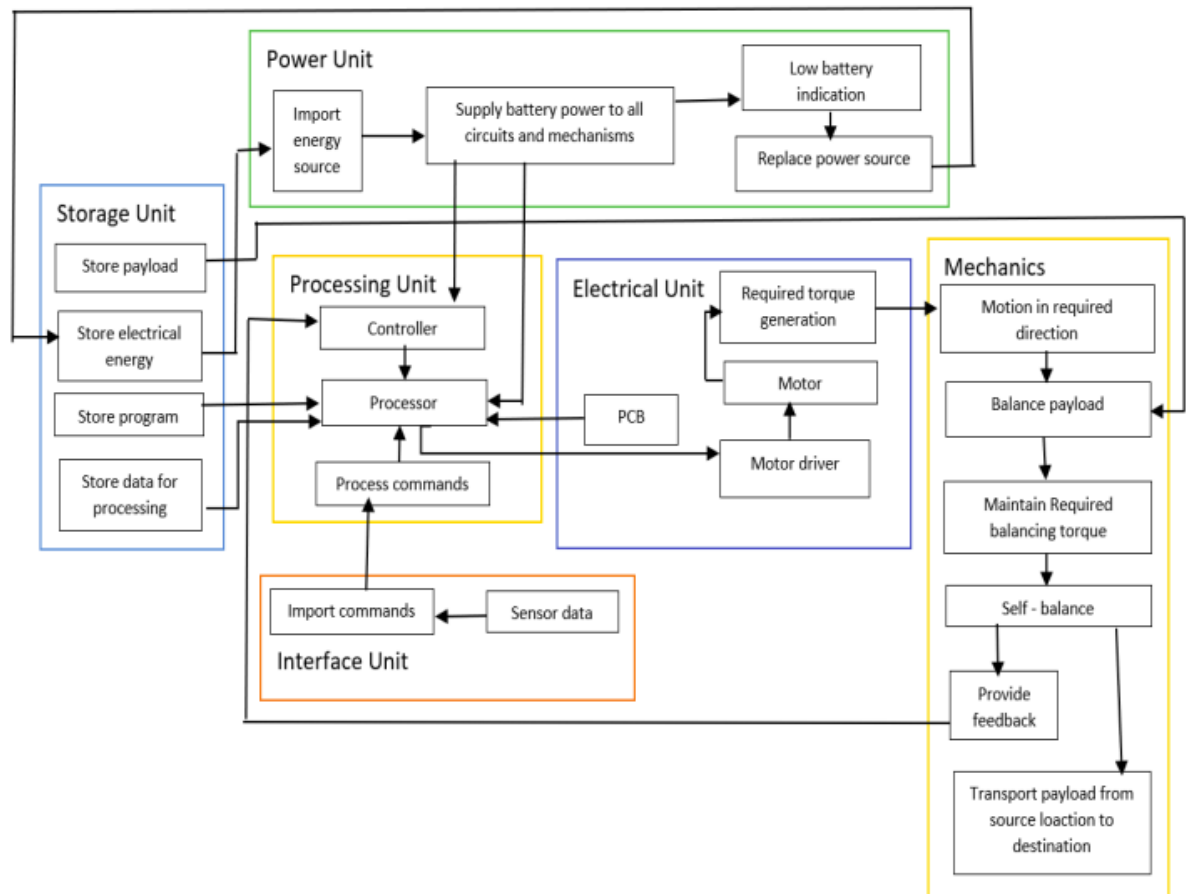## 1.2 UML Diagram:

2. Structural diagrams

2.1 Embodiment_diagram:

Power Unit
- Import energy source
- Supply battery power to all circuits and mechanisms
- Low battery indication
- Replace power source

Storage Unit
- Store payload
- Store electrical energy
- Store program
- Store data for processing

Processing Unit
- Controller
- Processor
- Process commands

Electrical Unit
- Required torque generation
- Motor
- PCB
- Motor driver

Mechanics
- Motion in required direction
- Balance payload
- Maintain Required balancing torque
- Self - balance
- Provide feedback
- Transport payload from source loaction to destination

Interface Unit
- Import commands
- Sensor data

2.2 Sub functions diagram:

A robot which is capable of transporting payload from one place to another place by balancing on its own based on the sensory input received by generating friction and required torque.

- Payload transportation
  - Friction generation
  - Torque generation
- Self-balance
  - Adjust centre of mass
  - Adjust tilt angle
- Processing the commands
  - Determine direction
  - Determine torque and friction
  - Actuation in required path