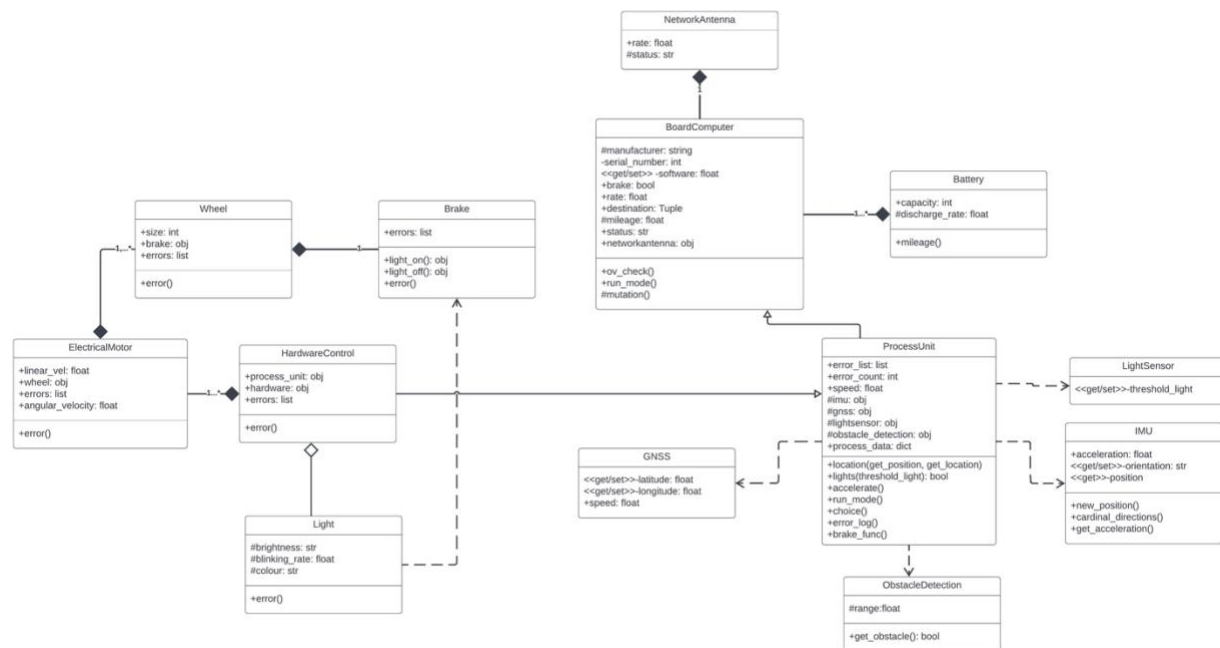| Assignment title	Assignment 2: Software System Proposal for Driverless Car
Discussion	System Implementation
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Module	OOP_PCOM7E November 2023
Due date	12/02/2023

Feedback Implementation

Some feedback has been implemented into the model, as well as changes to the class diagram due to a restructuration for a better system.

This is the updated class diagram:

These are the logged changes:

BoardComputer

- accelerate() method removed, added to the ProcessUnit. This one does not return anything, only modifies attributes..
- run_mode() and mutation() methods added to onboard computer module.

- Computer split into Hardware control module and Process Unit. HardwareControl class inherits from ProcessUnit.
- rotate() method removed from BoardComputer for simplicity.

ObstacleDetection

- Camera modules, radio and lidar removed, no longer considered.

ProcessUnit

- Added speed, imu, gnss, light sensor and obstacle detection attributes error log function and attribute on ProcessUnit class. run_mode(), choice(), updater() and brake_func() added.

Chassis
- Chassis removed, purely mechanical not functional for autopilot.

ObstacleDetection

- set_obstacle() removed from ObstacleDetection.

NetworkAntenna

- Network antenna frequency changed for rate.
- NetworkAntenna rate now public and changed to dependency between computer and antenna.
- NetworkAntenna now composition to BoardComputer, as autopilot cannot run without it.

HardwareControl

- Electrical motor and Light classes now aggregated to the HardwareControl class as the HardwareControl class has both electrical motors and lights however these still work without a chassis.
- Also, composition with the ElectricalMotor, Wheel and Brake as they depend on their composite classes.

- Brake modified errors attribute added and methods light_on, light_off and error added.
- ElectricalMotor odometer_reading removed and linear_vel, wheel, angular_velocity and errors attributes added. Error method added too.
- Wheel size attribute public now, brake and errors list attributes added as well as error() method.

Lights

- Rear and front lights to be created as instances of the Light class.
- Light class added error_function(), set_colour() method removed.
- Aggregation relation between ElectricalMotor and HardwareControl as the latter "has a" electrical motor and MUST have it, hence why aggregation.
- LightSensor added getter/setter method, get position changed by new_position(), cardinal_directions() added, get_acceleration() added.

GNSS

- GNSS get_location() method removed and replaced by getter setter on latitude and longitude attributes.

Battery

- Battery capacity public.
- Composition relation from battery swapped, it was wrong.
- Discharge rate added as float in Battery class.