Back End

DBHandler.py

Defines database models using orm_sqlite

Models

- Material
- Experiment
- Body
- Reading

Classes

DBHandler

Handles database connection and CRUD operations

Methods

- **init**(self, db_path)
- add_material(self, name, batch)
- add_experiment(self, name, material, date, time, load_loss_limit, max_load, max_travel, max_time, compress, z_axis_speed)
- add_reading(self, experiment, load, z_pos, time)
- get_materials(self)
- get_material_by_id(self, id)
- get_bodies(self)
- get_body_by_id(self, id)
- get_bodies_by_material(self, material)
- get_bodies_by_type(self, body_type)
- get_bodies_by_material_and_type(self, material, body_type)
- get_experiments(self)
- get_experiment_by_id(self, id)

- get_experiments_by_material(self, material)
- get_experiments_by_date(self, date)
- get_experiments_by_date_and_material(self, date, material)
- get_experiment_readings(self, experiment)
- delete_experiment_by_id(self, id)
- delete_material_by_id(self, id)
- populate(self)

DataHandler.py

Handles Raspberry Pi GPIO and data acquisition

Classes

DataHandler

Abstract class for data acquisition

LoadCell

Handles load cell data acquisition

StepMotor

Handles step motor data acquisition