BatteryRobot Manual

Version 0.1.1

9th May 2024

Document Control Page

Document Name: Battery Robot Manual

Version Date: 9 May 2024

Version: 0.1.1

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| Document History (Prior version sub-revision history are suppressed) | | |
| Date | Initials | Version or Revision |
| 9th May 2024 | XA | Version 0.1 Initiate documentation |

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# Project Overview

## Robot Parts

Robot Arm

Powder Dispenser

Heat Plate

Electrolyte Testing

## Electrolyte Synthesis

Electrolytes are synthesized on the rack/deck using th

## Testing Electrolytes

# General Limitations and Warnings

Cannot perform vial and pipette operations for safety purposes

# Requirements

North API is flexible in the Python versions and will run as long as an interpreter is provided.

However, Python 3.7.9 is required to install Gamry packages through the .whl files they provide. Therefore, the entirety of this project is written using Python 3.7.9, including the packages installed.

# File Hierarchy

Project is under the BatteryRobot folder.

# Version Control

Project uses Git for version control. Project repository is on GitHub under the Lopez Group email.

[GitHub link here](https://github.com/lopezgroup-NU/BatteryRobot)

To clone:

Request collaborator access and clone.

# Codebase

## Main.nproj

The most important file for this project is the \*.nproj file (for this project, it’s named Main.nproj). This file contains all the robot configurations, locators etc.

## Locators

All locators are imported from MainProject\src\main\Locator.py. However, locations are stored in the Main.nproj file, not the Locator.py file itself. They are only exported to the latter for script execution.

Locators can be edited through the “Locator” tab on the NorthIDE (see “View”).

### Pipette and Gripper Locators

Locations can either be relative to the pipette holder or gripper of the robot. On the “Locator” tab, each Locator will have an icon denoting which part of the robot it is relative to.

### Types of Locs

#### Standard

#### Grid

### Mapped Locs

All the currently mapped Locs are accessible through Locators.py (See Appendix X).

## Classes

### BatteryRobot

Class for North’s robot arm.

### T8

Class for North’s heatplate

### PowderShaker

Class for North’s powder dispenser

### PStat (Todo)

Class for Potentiostat. Class not implemented, but methods are. Available in utils/PStat

## Gamry

Stuff about Gamry goes here.

## Powder Protocols

All powder protocols are defined in MainProject\src\main\settings\powder\_protocols.py.

## External Libraries

Pandas

Gamry Python API

## Errors Raised for Safety Purposes

Some Exceptions (errors) are raised during runtime to avoid collision between components of the robot.