**Project 2 Part 1: Use Cases, Requirements, Sequence Diagrams**

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**Use Cases**

Case: IMPORT STUDY DATA

* Title - Import Study Data
* Primary Actor - Researcher
* Stakeholders – Instructor, Group Members, Backer
* Precondition - Have data file to import (XML/JSON).
* Success Condition – Data from XML/JSON file is read.
* Main Success Scenario -
  + Locate file using UI.
  + Check file extension.
    - Extension is “. json”: use JSON parser to read data.
    - Extension is not “.xml”: use XML parser to read data.
  + Data read from the file is display in GUI.
* Frequency: Every time.

Case: Export data to JSON

* Title: Export data to JSON
* Primary Actor – Researcher
* Stakeholders – Instructor, Group Members, Backer
* Precondition – Have data to export
* Success Condition – Data is written to the JSON file.
* Main Success Scenario
  + Researcher clicks on Export file button in UI.
  + UI asks for the file name.
  + Researcher types in the file name.
  + Data is written to a file and saved.
* Frequency: Every time.

Case: SAVING STATE WHILE CLOSED

* Title - Saving state while closed
* Primary Actor - Researcher
* Stakeholders – Instructor, Group Members
* Precondition - Data must be within the software
* Success Condition – State is retained after the program is restarted
* Main Success Scenario -
  + Researcher closes program
  + Software asks if researcher would like current data saved?
  + Software exports data to a file for storage (state.json)
  + Researcher opens program
  + Software checks if file (state.json) exists and opens it before display opens.
* Frequency – When state.json exists.

**Scientific Study Requirements**

1. Software shall implement a GUI with point and click functionality.
2. UI shall provide a mechanism for researcher to browse file from their computer.
3. UI shall display the data from the file.
4. UI shall provide a mechanism to start and end site collection.
5. UI shall let researcher input particular site they want to read.
6. UI shall provide interface to add new reading.
7. UI shall provide a way to export data to JSON file format with a user-specified name.
8. Software shall keep track of which readings are collected and for which study.
9. Software shall display the study name and a unique ID for each study.
10. Software shall retain the sites, readings, and studies that were previously entered.
11. Software shall be able to integrate XML format files in addition to JSON.
12. Software shall be able to error check files being imported.
13. Software shall have unit tests integrated in the code.
14. Software shall use the date the data are read if the recorded date is not specified.
15. Software shall apply a unit to each data imported.