Criterion E: Evaluation

1. Evaluation based on success criteria

Success Criteria	Evaluation	Met?
1	The user creates a database by entering the name that he wants. Application does not create a database if it already exist	Yes
2	Valve is successfully pressed down when the user actuates the push. The time can be changed with the variable "actuationTime" in Arduino (as seen in *Appendix 1.3*)	Yes
3	Time of the push for cycle is recorded through the SaveData class.	Yes
4	The average is computed in Arduino for each cycle and communicated to Java to store in the database. (*Appendix 1.5*)	Yes
5	The volume sensor is read after each cycle and stored in the database	Yes
6	The average of the difference of the two pressure sensors is computed in Arduino communicated to Java to store in the database. (*Appendix 1.5*)	Yes
7	After testing the sensors and the actuation at the lab, the client decided that a radio connection did not improve the usability of the experimentation in the lab. (*Appendix 1.6*)	No
8	The LoadDataMenu class provides an interface to create tables with data	Yes
9	The LoadDataMenu class provides an interface to create tables with data	Yes
10	Instead of saving the table on the computer, my client preferred to be able to copy the data from each table.	No

- The overall satisfaction and evaluation of the client towards the success criteria and the project is evidenced in *Appendix 1.7*.

2. Recommendations for future development

The recommendations for future development were discussed during the final meeting with my client (as seen in *Appendix 1.7, 1.8*).

2.1. Graphs and charts (Client recommendation)

- Problem: Client needed to copy and paste the measurements into graph and chart softwares. This wasted time and effort.
- Improvement: Application should provide the interface to create charts and graphs based on the data stored in the database. This may be done through the use of libraries in Java.

2.2 Cloud based storage (Client recommendation)

- Problem: Client needed to use the same laptop in and outside the lab, as the data to process was solely stored on that laptop. The experimentation setup was, hence, inconvenient.
- Improvement: The application could use a cloud based database, so that the client can access and process the data through the network. For example, SQL cloud could have been utilised.

2.3. Actuation design (Client recommendation)

- Problem: Client was satisfied with the actuation of the cap. However, the press and release time led to an inaccurate timing for the actuation.
- Improvement: Instead of using a servo motor to press on the cap, a powerful solenoid could be used. The solenoid has a faster response and press and release time, and will prove the actuation to be more accurate on timing. Furthermore, to improve the accessibility, the actuation could be controlled from a distance with an infrared remote control.

2.4 Remote control of application (My recommendation)

- Improvement: The accessibility of the application could be improved by using a touch screen such as an iPad or iPhone to control the application. This could also improve the data collection from a programming standpoint as a remote actuation would

prevent human interference of the experimentation.