



Automated Corrosion Testing Fixture

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Project Objective and Intern Contribution:

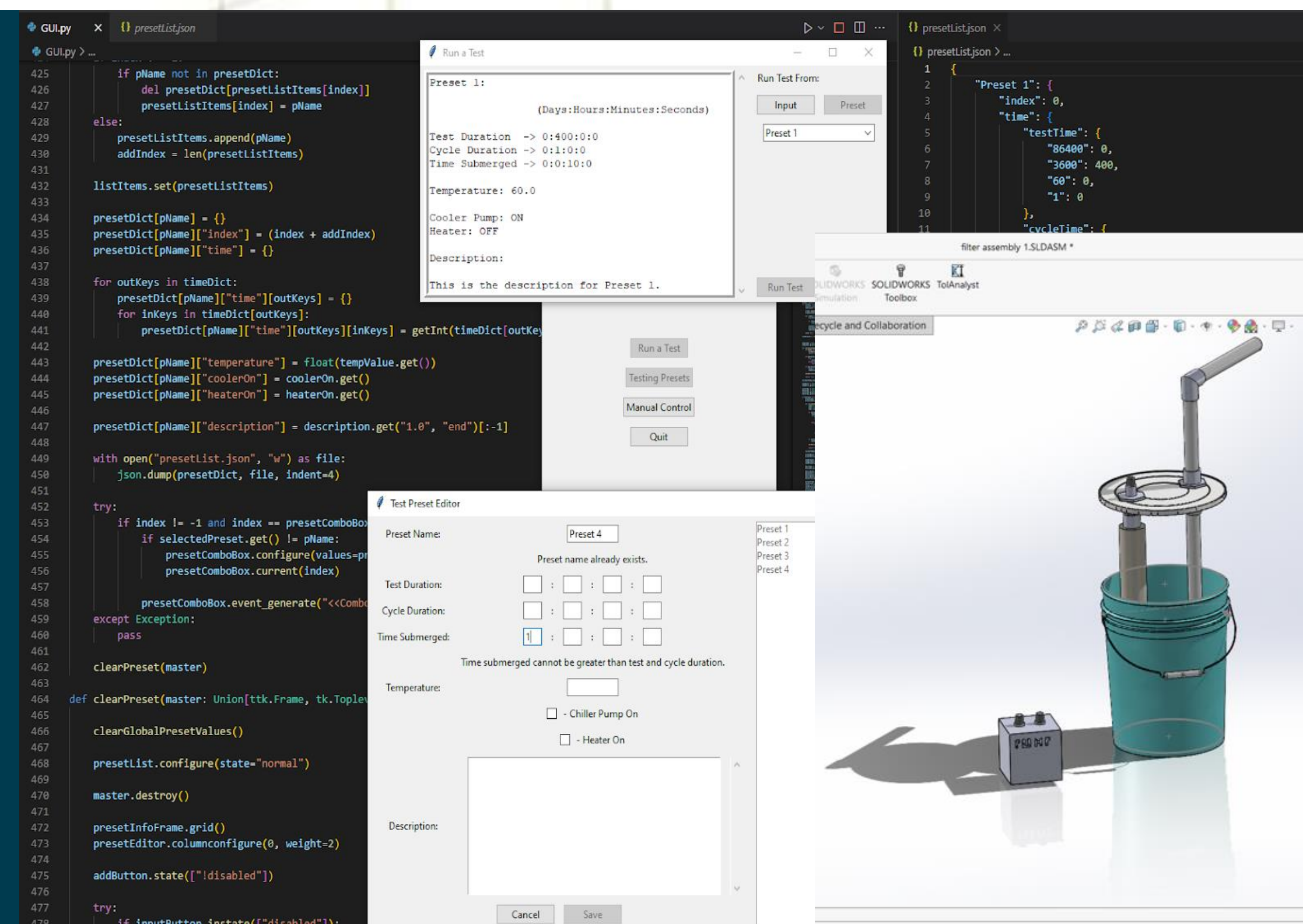
The aim for this summer was to continue the advancement of the immersion tester from previous years through the redesign of the graphical user interface (GUI) and the incorporation of a drainage filtration system. Running tests with the fixture was a goal as well.

To accomplish these goals, the tasks were divided between interns. Updating the GUI code was done using the Visual Studio Code software and the Python programming language. The creation of the filtration system was accomplished using SolidWorks for designing the model, and the assembly of PVC components to construct it.

To update the GUI, a rewrite of the existing GUI code was done to include extensive user input and control. The updated code allows for the saving of test conditions and precise control of testing time parameters. This upgrade makes the fixture more user friendly and approachable for anybody, no matter their knowledge of the unit. To write the code, we had to learn many aspects of Python, including much about its GUI programming package.

Regarding the filtration system, it is important for environmentally sound waste disposal since the water after testing can be contaminated with metal particulates. In the process of designing the filter, we had to research different materials and learn more about the SolidWorks CAD software.

Due to time constraints, we were unable to run testing. We fixed various broken components on the fixture as well.



Results / Accomplishments / Next Steps:

The impact of this project is high because the Navy, along with many other industries, spend billions of dollars combating corrosion annually.

What is most important is that our team worked together and expanded our knowledge to accomplish the tasks to the best of our ability.

In the future, this work will be able to simulate real ocean environments to give accurate testing in accelerated time.

Next steps for this project should be integration of more upgrades and the continued development of the GUI to properly implement it into the fixture for functional control.

What are you most proud of this summer [with respect to your experience/project]?

- To learn new skills and apply them to help solve an important problem.
- To gain hands-on experience with useful technologies like Python and SolidWorks.

Why was the internship valuable?

- Obtaining professional experience and building connections.
- Applying what we learned to not only this project, but towards future engineering endeavors.

Advice for future cohorts?

- Know when to lead and when to follow.
- It's okay if you don't know something. The first step is asking your best friend Google for help.

