sdmay18-09: Tool Support for Continuous Model-Based Verification of the Linux Kernel
Weekly Report 7
April 7 – April 20, 2018
Client: Suraj Kothari
Faculty Advisor: Suraj Kothari

Team Members:
Srinivas Dhanwada – Team Lead
Collin McIntyre – Tool Integration Lead
Benjamin Weno – Automation Lead
Matthew Wall – Web Lead

Summary of Progress this Report

A lot of work was completed in this period. We've increased testing coverage for each of our modules, including the RSS Reader, DiffMapper, Patcher, DiffLinker, and a new module we've introduced, the Data Translator. The Data Translator will receive the output from the DiffLinker and L-SAP and convert the data into a format that the website can use. We've overhauled the implementation of the Patcher due to feature creep introduced into the project, cleaning up the code and correcting its output. We've created a map from kernel version 3.19 to 4.13 using the output generated from each of our modules and have begun working on a map from kernel version 4.13 to 4.14. We've also made tweaks to the website user interface as well as finished the frontend implementation, and have also found and fixed several bugs in each of our modules.

Pending Issues

At this point, there aren't any major foreseeable issues. The only issue we're currently affected by is the execution time of L-SAP itself, which is something we can't change. We just need to wait for L-SAP to finish its execution.

Plans for Upcoming Reporting Period

We plan to finish each module of our pipeline and ensure that our GitLab CI testing coverage is as high as possible. This will ensure we're leaving our client with a high-quality solution. We also plan to create and give our final presentation. We will finish documenting each module in our pipeline and will provide our client with access to all the materials we've used and created over the past two semesters.

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Individual Contributions

Team Member	Contribution	Hours This Period	Total Hours
Srinivas Dhanwada	- Helped increase testing on the RSS Reader - Updated shared utils project - Dynamically loading instance trackers - Generalized config file reader class - Completed DiffLinker - Performed linking on kernel map from 3.19 to 4.13 - DiffMapper bugfixes - Helped generate website data - Made tweaks to website UI	25	180
Collin McIntyre	- Reworked Patcher implementation - Reworked existing tests for the Patcher - Created a patch for kernel version 4.13 and 4.14	22	139.5
Benjamin Weno	- Created data translator project - Created tests for the data translator project - Increased testing coverage for the RSS Reader	20	92
Matthew Wall	- Generated data for display on website - Finished website frontend functionality - Tweaked website UI - Created final project poster with input from group	20	98.5