Software Development Cycle and Version Control Improvement
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The Mobility and Robotic Systems Section's Dynamics And Real-Time Simulation (DARTS) lab develops advanced high-fidelity, multi-mission simulation tools for the closed-loop development and testing of spaceflight systems. The DARTS Lab provides multimission support due to its highly modular simulation framework which is used by many missions at JPL and elsewhere at NASA. This modularity is facilitated by an inhouse concurrent software development tool called Pyam. My work on the Pyam codebase during the summer involved implementation of various improvements and features to allow increased productivity throughout the software development cycle. These features included the development of regression tests, implementation of automated email alerts related to version control failures, improvement of the management of software modules by resolving issues with their addition and removal to the development environment (the sandbox), and the addition of an intricate maintenance feature to facilitate the delivery of delta updates and patches to NASA project teams that must remain on older, or mission specific, versions of the lab's simulation tools.