

## Unifying Workflows with the Strangler Fig Pattern

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### **ABSTRACT**

The mission of EPIC, the Earth Prediction Innovation Center, and the Unified Forecast System (UFS) is to be the catalyst for Community research and modeling advances. To achieve this goal, the EPIC Unified Workflow Team plans to leverage the existing Applications during our unification process.

To increase user productivity and UFS adoption, we seek to encapsulate existing complexities while maintaining functionality, through the implementation of the Strangler Fig Pattern, a strategic software architecture pattern for refactoring monolith legacy systems.

The Strangler Fig Pattern is aptly named after the parasitic fig tree that slowly envelops its host tree over time, allowing for a seamless transition. Similarly, in software modernization, this pattern involves gradually replacing legacy components with modern ones while maintaining functionality and minimizing disruption to users. Meanwhile, a well-designed facade acts as the intermediary layer between legacy and modern components, ensuring seamless communication and encapsulating legacy complexities.

This abstract provides an overview of a real-world implementation of the Strangler Fig Facade pattern with an existing UFS Application – the Short Range Weather App. We hope to showcase its effectiveness in improving the user experience as we introduce a Unified Workflow Toolkit to the first of several UFS Apps. Our work illustrates its potential to gradually transition to a modern user interface while shielding end users from legacy intricacies, and without compromising system stability or developer needs.