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6.2 Assignment

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Strangler Fig Pattern and Blackboard Education

It is no secret that the software industry remains in a constant state of growth and change, with dozens of new tools, technologies, and methodologies coming into the spotlight every year. That said, keeping up with these latest trends is a daunting task that software companies must face if they wish to maintain customers' attention. Sometimes this means migrating an application from one system to a more relevant, efficient one. The Strangler-fig application pattern provides a streamlined way to approach this obstacle by migrating components of an application from one architecture to another incrementally, preventing developers from getting overwhelmed while simultaneously freeing them from the constraints of a monolithic system. An example of a company that has successfully used the Strangler-fig pattern to transfer its services is Blackboard.

In 2011, Blackboard's "Learn" software ran on an outdated system (a J2EE codebase created in 1997). As the platform continued to grow to meet new business and user requirements, developers began to struggle with the monolithic architecture they'd built, as it constantly got in the way of key processes such as build, integration, and testing. As a result, the efficiency of these processes began to decline. Furthermore, the outdated system had developers trapped in a terribly long feedback loop, which hindered their ability to provide value to customers. Eventually, the legacy system became so difficult and demanding to work with that the amount of code in the Learn repository grew grossly disproportionate to the number of commits.

Hoping to resolve this issue, Blackboard decided to update the software's architecture. They did this through "building blocks," a set of modules decoupled from the monolith and

accessed through APIs. These building blocks increased modularity and allowed programmers to work independently without constantly coordinating with the rest of the team. Furthermore, if a developer made a mistake within a building block, the failure remained inside that block without having any adverse effect on the rest of the project. This not only increased the stability of the system but also emphasized accountability within the team.

Ultimately, Blackboard's attempt at restructuring using the Strangler fig pattern was a success, and developers began moving their code from the monolith into the building block repositories. As a result, the gap between the number of lines of code and the number of commits decreased. Developers became more productive, lead times decreased, and they were able to receive feedback much faster, allowing them to provide customers with better value faster.

References:

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