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Development Manager

Development Manager is a product that facilitates the management of a software engineering project with a strict style similar to that of CSE331. It is aimed at small teams of engineers, similar to those that we will break into, and has the goal of providing a simple, straight-forward interface that one can learn to use quickly. This application would allow smaller groups to easily collaborate in the design phase, as well as throughout later phases using tools like module ownership, bug reporting, and a simple task manager, all having associations to previously designed parts of the software. The greatest potential of this product is in structured team collaboration over long distances. It allows communication between team members as well as the ability to view specifics of the project itself. This is accomplished by forcing the design models taught in 331, much in the path of Rails' motto: "favoring convention over configuration."

Programmers tend not to enjoy designing/specifying/using the 331 philosophy, or may have trouble working efficiently with a team. However, they can almost always agree that it is beneficial to work methodically using such a process. Our program would help lessen the difficulties (whether it relate to time commitments or otherwise) of trying to be disciplined as a team, working through specifications and design with ad-hoc methods or just bare editing of source files. The system would in fact allow a program to be designed and then generate stub classes, methods, and unit tests, making it simpler to go from designing a unit to implementing it. At that point, the task organizer, bug tracker, and a front-end to a repository become the primary pieces of the software. All such extensions will be tied directly to the previously-made design; making it a fully packaged deal. For instance, bugs and tasks would be attached to the corresponding modules, classes, or methods.

The system would be composed of a simple, straight-forward web GUI that is browser-agnostic and allows multiple concurrent users to work on a project at the same time. There is a large selection of frameworks, such as Rails or Ring, that should be combined with Ajax to accomplish this complex task. On the server-side, there would be a need for a database system to keep track of different projects and user information, and of course, a concurrent system to allow users to communicate through the web UI. Within the application there would be an interface to a popular repository manager, allowing for the team to access code quickly from the app itself.

Since this may be the first group project large enough to have its own design phase, there may not be enough experience amongst our team members to complete this project effectively. After all, the team would be designing, possibly the first time for any program, a design program. Also, there are potentially a few new technologies, like web platforms and databases, that aren't well-known, so they must be learned. However, most should at least know the basics from 331, if not another class.

This project is similar to many alternatives. There are plenty of design tools, for instance, that use UML, a very expressive language to specify many different parts of a program. However, those tools are meant to be all-encompassing and complex enough for complex systems. This new system would have a main goal of simplicity for smaller to mid-sized projects with small teams working on them. Also, it's not just a design tool, but it combines well with well-used features like bug tracking and repository managing. While Unix has a powerful axiom of one tool per problem, there is something to be said about a unified and integrated system that does more with less branching dependencies. Our system is not completely new but is instead a new way of integrating tools with the design of a program while guiding development with 331 theory.

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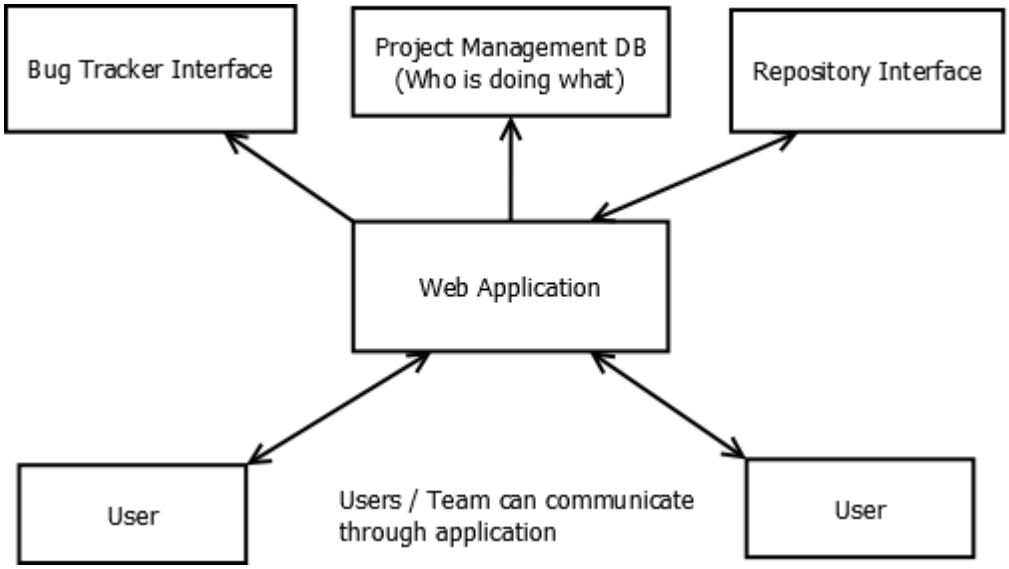
Possible Architecture:



Possible User Interface: