SE 3860 Maintenance Project Proposal

Project Background

The-Godfather is a general-purpose, multi-featured Discord bot written in C#. Development began in August of 2017 and features have regularly been added/refactored/improved upon since. The project is active on GitHub with an average of 30 commits per week. Currently, this codebase appears to be suffering from bloat and patchwork development. Within a few minutes of browsing the repository, Vince was able to identify several areas in need of refactoring, or areas that would benefit from complexity-reducing rewrites. Additionally, as this is a general-purpose bot, there are several features we believe would add to its usefulness.

Candidacy Justification

While The-Godfather as a whole is a complex, 25k+ LOC project, it is highly modular and its core is easily understandable at only ~350 LOC. With a rich feature base (including local database provisions and existing API hooks for popular software/services), we can practice adding features to existing software without needing to develop the dependencies as well. The current code bloat also allows us to experience refactoring on a much larger project than most of us have worked with previously. Finally, this project would expose us to DSharpPlus (a Discord-specific C# library) and Git/GitHub.

Team Expectations

Vince – I am expecting to be able to share my experience of refactoring and maintaining code with the rest of my groups. I am expecting that this may require some more extraction and usage of some refactoring tools, Resharper or Coderush. I also plan on spreading this knowledge to others on the team. I also plan on using my experience of putting in an Inversion of Control (IoC) container in to my Intermediate Software project around the DSharpPlus library, as well as several others to help make it easier to test when necessary to use these objects that cannot easily be mocked or faked.

Tod – I am looking forward on improving the Godfather project. I plan on refactoring and evolving the code one small part at a time. I also plan on becoming familiar with DSharpPlus tools and bot programming in general, and hope to gain more insight working with Vince and Dakota who have more experience with software maintenance.

Dakota – I want to add features to this project to gain experience with APIs. Because Discord is primarily used in gaming communities, I have chosen the player statistics API for the game “Rainbow-Six: Siege” provided by Ubisoft. This API is an appropriate choice because the game’s multiple, individually-tracked modes allow for the integration of many bot commands to request and display relevant data.