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Assignment 3 - OSS Proposal and Specifications
Dr. Pulimood
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Project Proposal

For my open-source project, I will be doing option 2, where I design a computational solution to a problem that I see. Many organizations on TCNJ's campus like to have off campus events, such as a trip to Applebee's or a bowling night. However, many of the students on campus do not have a car with them, meaning that they will have to share a ride with another student who does have a car with them. Coordinating these rides across an organization and making sure that everyone who wants to attend the event has a means to get there can become complicated. My project is a web-based application that will allow an organization to create an event and have the members sign up as drivers or passengers in order to make sure that everyone is accounted for and has a means of transportation. Once a user is signed up, they can be able to join multiple organizations that they are part of. For each event, passengers will be able to sign up under a specific driver and drivers will be able to see who is in their car. The administrator of the group can create events. An algorithm will be implemented to allow for automatic matching of passengers to drivers, based on living location on campus and who they have ridden with previously. This algorithm will also have to take into account how many seats are available in the car. What makes this application different from other carpool applications is the situation in which it is used and the factors in matching. Traditional carpool applications only deal with matching one or two passengers to a single driver based upon schedules and both starting and ending locations. For my application, an entire student organization is being matched up to find rides with a single common starting time, location, and ending destination.

The application will be built using Ruby on Rails, which I will need to learn in order to complete the project. Other components will be MySQL for the database, and Bootstrap for the front-end website styles and views. JQuery will be used for other interface functionality.

Open Source licensing

In general, open source licenses allow for the accompanied software to be freely used and modified. Once in the hands of the recipient, the recipient is free to do what he or she would like with it. In the open source community, free does not always reference price, but means that the source code is distributed along with the software and that the software may be modified. While there are many open source licenses out there, there are a few commonly used ones. Three of these common licenses are the MIT license, the Apache License 2.0, and the GNU General Public License (GPL). The shortest of the three of these is the MIT license, being only a few paragraphs in length. Since it is very brief, the contents are straightforward and and outlined simply. The MIT license gives the recipient of the software

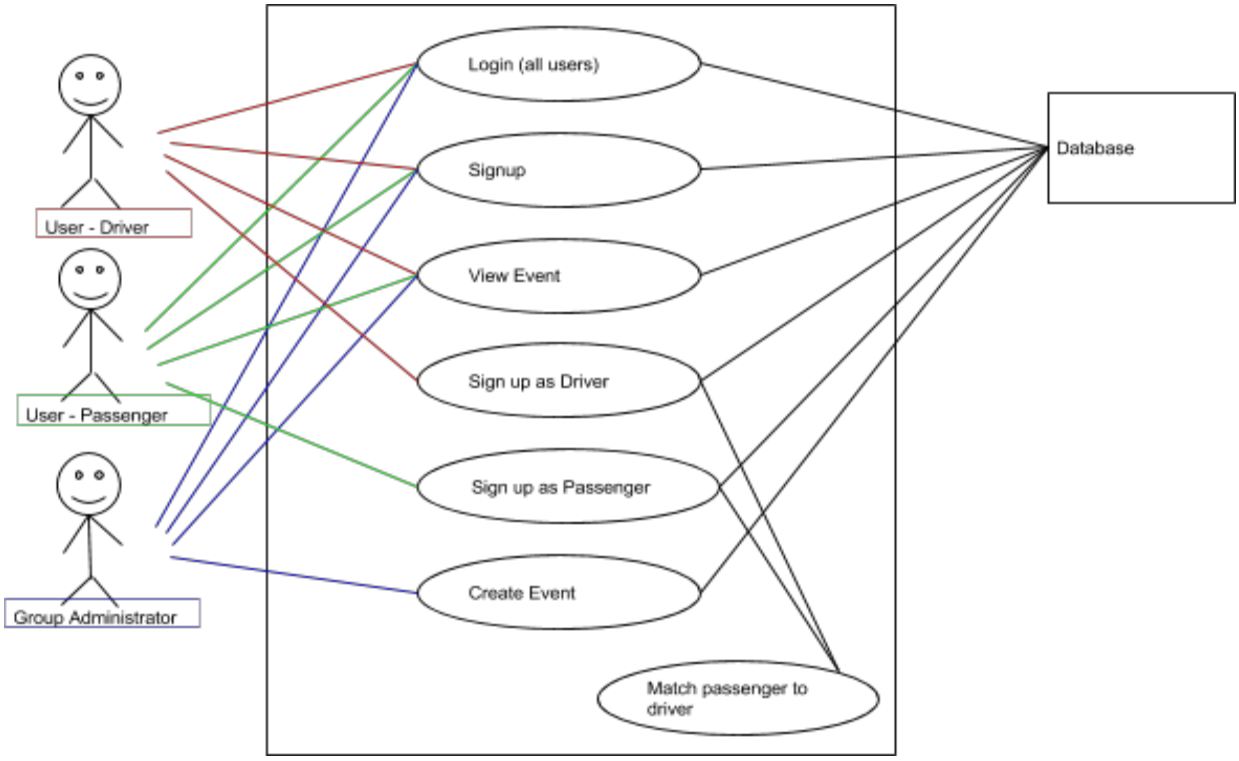
almost total control of the product, allowing them to modify or distribute the software as needed. It does require that the license be included with the software and specifies that there is no warranty on the product. This license is a good fit for frameworks where the code must be changed to fit the needs of the developer or will be packaged inside a bigger piece of software. The Apache License 2.0 offers much of the same freedoms as the MIT license but specifies more on the distribution and modification of the software. For example, any files that are changed must state that they have been changed and that the changes may have their own copyright statements or licenses. The Apache License 2.0 also states that the distributer of the software may offer a warranty if they would like, but the license itself does not give one by default. This license would be good for plugins or other small tools that can be modified but are usually not. The third license, the GPL, is the lengthiest of the three but goes into more detail over the rights of the software creator and users. While the other licenses give a general statement saying how the software can be distributed and used in projects, this license outlines the specific rights and freedoms that you have with the software and how it can be used. The GPL does state that the license is not needed to run the software program, just to modify or change it. A warranty is not provided with this license either. Complete software programs would benefit from this type of license as it allows for running the software without a license and it is hard to navigate the conditions for changing the source code of the program for redistribution. Both the Apache License 2.0 and the GPL also cover patents associated along with the software. Simply, if patents are involved, then they must not stand in the way of changing or redistributing the software.

The ride coordination web-app will use the GPL as its open source license. While the MIT license is brief and simple and the Apache License 2.0 is not as long as the GPL, the GPL lays out more details for a full program, not just a framework or plugin. Since the ride coordination program is a stand alone application and will not be integrated into other projects, this license is well suited for the project. The GPL also ensures that the software it covers cannot be used in a proprietary program, meaning that the software will stay free in the open source sense. This license will also cover my rights as a software developer and creator. The GPL can be found here: https://gnu.org/licenses/gpl.html

Github Repository

https://github.com/benjaminmeyer/ride-coordination-app

Use Case Diagram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