COG366 Project Task 6 - Belief Revision Techniques

First of all, the beliefs in our computational model would be the tasks we want to prioritize. Our belief set will include the type, the due date, and the difficulty of each task. To reason with the beliefs, we reorder the tasks based on the three aforementioned factors. Tasks with a more important type (e.g. academic) will be on the top of the list. If two tasks have the same type, then priority is determined by their due dates. The task with the sooner due dates will be prioritized. If two tasks have the same due date, our prioritization will be determined by their difficulties. We can pick whichever is easier to do first.

The main problem we had for this way of reasoning is the representation of the difficulty of a task in this project, so we did some research on some examples of difficulty representation. This is actually commonly seen in video games. Let's take Super Mario as an example. The way they measure difficulty and set an order to the levels is by testing and calculating the amount of players that are able to get through the level without losing a life and such. If all the players are able to get through the level without losing a life, the difficulty compared to a level where 1 player lost a life, would be easier since more people were able to complete it without consequence. But this is pretty complicated to implement and doesn't apply to our world that well. What we might end up doing would just be categorizing task difficulty, such as easy, medium, difficult, or extra credit.

There are two conditions for possible belief revision, which are 1) when the user adds a new task; or 2) when the user modifies an existing task. When adding a task, we first check if the task exists in the belief set. We do not do anything if it is an existing task. If this task does not exist in the belief set, then we compare this new task with every existing task in the belief set to decide where to place it, then add it at the determined position. When modifying a task, we have to remove the task being modified from the belief set because it is contradicting the new version we are going to have. After that, we follow a similar approach in adding, where we compare this modified task to the rest of the belief set to determine its new position in the set. The

techniques for prioritization of two tasks are mentioned in the first paragraph.