**Essay Draft Deliverable**

*All of the following can be presented in rough paragraphs or even bullet points, but make sure to get your whole idea across clearly. Section headings will be the same for the final submission, and you can delete all of the italicized text in order to fill in your draft.*

**Summary:**

*Please describe the setting of your topic in a paragraph or two (if necessary). The setting should be a general outline of what the topic domain is, the scope, and the specific scenario within such. Aim for a novel idea that is interesting to you as it is easier to write about.*

*E.g.,*

*Traffic flow within side streets is always an issue especially during rush hour when people (unfortunately) try to avoid main roads and drive through side streets to try and reach their destinations faster. The problem that I will be tackling is the issue of traffic movement in suburban area side streets. The problem will be scaled down to a single intersection within these suburb areas. specifically, I will model the standard problem of what order cars will move through a stop sign based on when they arrive.*

**Propositions:**

*There should be an included list of propositions that will be present in your specific problem. Please provide a list of all your propositions and define what makes each of these propositions true. Make sure to consider all the key players within your specific problem. For example, I care what car has arrived at what time, what direction it would like to move, and what cardinal direction in the intersection it has arrived in.*

*E.g.,*

* *Nij: is true when a car has arrived in the north position of the 4 way stop intersection and wants to move in direction I, and has arrived at the intersection at j priority. Ex: (Nr,1) means a car would like to turn right and has arrived at the intersection first.*
* *Sij: is true when a car has arrived in the south position of the 4 way stop intersection and wants to move in direction I, and has arrived at the intersection at j priority. Ex: (Sl,2) means a car would like to turn left and has arrived at the intersection second.*
* *Etc..*

**Constraints:**

*The constraints of the problem should also be present. These are the statements that define what is possible or not within your setting. In a reasonably complex problem, there would be at least 3 constraints, but given a more complex setting, I would expect there to be more (no need to get incredibly crazy but just make sure a car crash can’t happen and there are no paradoxes).*

*E.g.,*

*A car can’t want to turn left and right at the same time:*

*~(N r j ^ N l j)*

*Etc…*

**Limitations:**

*This is where you would talk about the limitations of your model. This should be a paragraph describing more complex situations that your model does not account for and why they were not included. Do your best to be exhaustive as this shows awareness of your setting, propositions, and constraints. Here is a singular example:*

*My model does not account for when more than one car has arrived in a queue for a single position, meaning I could not account for a situation where two cars have both arrived at the north position and the one which arrived second needs to wait for the car in front to move. This was not included as when 1 car moves, the general state of the intersection has changed and can be re-evaluated in that state based on current car arrival.*