CS4ZP6 Problem Statement
Ampersand Tarski Event-Condition-Action Rules

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Ampersand Tarski is a tool for requirement engineers, system designers, and business users to develop prototype solutions for real world problems. Ampersand provides users with a dynamic model that allows them to translate real-world problems into quantifiable requirements, so that potential solutions can then be tested in order to ensure that all requirements are met.

Currently, Ampersand is live and readily accessible to the engineering community through Github; it has the ability to assess logical discrepancies on sets of data based on user specified limitations. Though it has the ability to manipulate data and generate prototypes, logical inconsistencies still arise in the systems data. These inconsistencies occur when the user changes the restrictions imposed on the data and the data struggles to remodel itself to fit the new restrictions. Not all sets of data can easily remake themselves to fit the restrictions imposed by the user, and as a result there can be contradictions that violate one or more of the restrictions. Data that violate the restrictions are dealt with in one of two ways: elimination or rehabilitation.

The purpose of this project is to rehabilitate data and maintain the artificial system according to user-defined limitations. Although Ampersand has the ability to recognize inconsistencies, it relies entirely on the user to manually them. The goal of this project is to automate the rehabilitation of data in order to restore a realistic representation of Ampersand's artificial system that is consistent with reality. It is important to automate the repair of inconsistent data because it makes Ampersand less tedious for users and more efficient overall.

This project is important to Ampersand stakeholders (e.g. Ampersand contributors and designers) because it enhances a functional requirement and brings Ampersand closer to becoming a finished product. For other stakeholders, such as Ampersand's end users, this project means a drastic decrease in the amount of time users would normally spend searching and correcting inconsistencies within their information system. Moreover, this project is important to us becaues it addresses a fundamental challenge that all software engineers face: the need to facilitate and maintain an essence of reality in an artificial system that has no natural boundaries.