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Model-Driven Software Development

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Alloy Project Proposal

1) Explain your problem in one page.

Our problem is designing a model that takes one or more student's schedules and compares them to find open time slots where all people may be able to meet. Each person will have their name (as a sig ID) and a list of classes and activities they are involved in. These classes and activities will have a time slot allocated to them which will be used as an inverse availability relation as well as an available teacher/professor field for who is running the class (or event). The model will then be created to find all possible times where a student is not available, and then generate a list of the inverse times where they would be available based on their schedule. These available times are then referenced against other student's available times. Various predicates will be available for this model to describe the activities of the students such as: what classes a particular student is enrolled in, what all classes a student shares with another student, how often they have a specific teacher/professor , what available times to meet with other students may be available based on what they are involved in, and a teacher/professor may determine how many times they have a particular student.

2) Create a numbered list of all the functionalities your system will provide.

1. A student can gather the schedule for the classes they are enrolled in.
2. A student can determine how many classes they have in common with another student.
3. A teacher/professor can determine which students are in their classes.
4. A teacher can determine how many times they have a given student.

3) Create a numbered list of all the functionalities your system will NOT provide.

1. A student cannot get a variation of their current schedule (i.e. if they can take the same set of classes at different times).

2. A student cannot see when they cannot schedule meetings with other students (due to class schedule).
3. A student will be able to enter arbitrary time slots for when they are not available.

4) Target Audience:

Our target audience for this model would be all students, and to some extent teachers. This model can be used to determine what classes students have in common, what teachers students have, and also what students are in classes taught by a teacher.