Automated Core Course Scheduling

Weekly Progress Report 7

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Project description:
The project is intended to develop a system which is web based, browser independent and using a GUI to help automate scheduling of core courses. The system should be the link between the lecturers and the study coordinators, such that the lecturers can choose their prefered time slots and the system gives schedule suggestions to the coordinator based on the predefined constraints and coordinator defined constraints.

Progress

We have completed 60% of the must-have features, opened and fixed some bugs in the system.

what has been done

- The database had been modified to accommodate lecturers preferences of time slots for courses offered by them.
- A Lecturer function was implemented which ensures that the lecturers can see his/her previously saved preferences.
- Lecturers can add and modify preferences, but only for courses, for which there are no preferences set from other users. If the lecturer does not selected for which course the preference they are setting belong to, they get alerted to make this selection.
- Also, Database has been modified to disallow the Creation of multiple same semester and courses.
- Bug - When a lecturer have selected a time and modifies it, previous a new entry is created for same timeslot, the bug was fixed e.g lecturer should not be able to have multiple entries on same time and day.
- Bug - Previously no error message is given when a lecturer tries to submit a preference without selecting a course. Fixed, now Lecturer preferences can be reset and an error will be thrown if lecturers did not select courses and number of hours.
- Structure - We have modified the structure of the project as it got bigger, not all configuration of the project are separated from logic, Algoithmic routines are now located in a library file and can be imported into the app, all database function definitions have been moved out of the main logic, a new solver file created which will contain all our CSP functions that will be used to find optimized schedules based on preferences.
- We have defined the variables building a domain of our preferences to which our constraints will be applied to. And a coordnator function (schedules) views a dump of this domain. It will be limited as more constraints are added.

ongoing work

- Data models; we are yet to realize the whole data we will deal with so this section is still being refactored.
- We are still Modelling our scheduling problem using the constraint solver's model, variables are almost done, constraints yet to be modeled.
- Sequence Diagrams showing the interaction between the actors, software and database are still in the works.
- Bug fixes on authentication, password security.
- Each function in our application is being documented using the python docstring.

plans for the next week

- Continue working on the constraint satisfactioin problem and modeling into the python-constraint model.
- Refactoring of code and code level documentation.
- Fixing the existing bugs.
- Meeting with alexander to discuss hosting server architecture is set to first week of january.

Problems

Modelling our constraint tends to be challenging.