Component diagram

CodeIgniter is a PHP web framework used to create MyTinerary. It provides three major components encompassing the MVC architecture, models, views, and controllers. Along with those three major components CodeIgniter allows for other components that facilitates security through encryption and provides database management.

The Views component represents the core user interface that users will be seeing. In addition to that all the business logic handled by the Models component is connected through the views which allow the views to display all sub-components found in the models such as the Scheduler, Student Profiles, and list of courses. The views component shall be routinely redirected to a new page by the controller which is why it also requires the Controller component.

The Controllers component comprises of several controller classes that correspond to their respective Views class. This component handles any user interaction with MyTinerary such as users navigating through tabs or more attempting to add new courses onto the schedule. In essence, the controllers redirect users to appropriate pages or dynamically update current pages according to user selections. Because the controller handles user selections it must require the models component to signal any potential changes within the business logic such as removing a course from the schedule.

The Models component is composed of several other sub-components that together form the core of MyTinerary’s domain logic. These sub-components include the Scheduler, the Student, and the Administrator. The scheduler component contains all the current course information and possible schedules. In order to accomplish this it provides an automatic schedule generator taking into account a students’ academic record in addition to their preferences. Therefore, in order to make the schedule, the scheduler needs to access the data information that comes from preferences entered by the student as well as his student record. The scheduler is also capable of simply displaying all available courses in a given semester.

The student component contains a student record and preferences. Note that the preferences component and the student record component are found within the student subsystem. This indicates that these components are different based on the user of the application. A separate administrator component is also defined to differentiate the role of a Student and Administrator. Students may only query the database for data access while administrators can query and modify the database. For instance, administrators can add, remove, or update any class information while students may only view class listings. The administrators are also capable of directly accessing any student profile and manually altering their schedules. All user and course information are stored in the MySQL database component that is hosted both locally and within the cloud. As mentioned earlier, many of the models sub-components are linked to the views component in order to display the information.

An external component that requires the CodeIgniter framework to function is the security. The security provides encryption and secure access and logout to MyTinerary.