CS 319-1 Group 8

Deliverable 4 - 1st Iteration
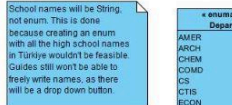
Bilkent Tanıtım Ofisi Management System

Short-name: BILFO

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2. Design Patterns

2.1. Singleton

The BILFO application system uses some centralized managers, such as UserManager, DatabaseManager, PuantajManager, FormManager, and EventManager, to efficiently perform critical operations. Each of these managers play an important role in the system. For example, UserManager oversees user authentication, DatabaseManager is used for database connections, PuantajManager handles logs, FormManager retrieves and updates forms, and EventManager manages events. If the system is to be consistent, all these managers should work as single instances throughout the application. EventManager, for example, facilitates events to avoid scheduling conflicts. We implement the Singleton Design Pattern to ensure, among every manager, there is just one instance that is usually global and allows for the operation of consistency and smooth interoperation between components.

2.2. Façade

We apply the Façade Design Pattern to manage events that happen within the system. The pattern provides an interface for running several interdependent processes in an automated way when a tour finishes. Every time a tour is finished, the façade would ensure several dependent functions run smoothly. These range from sending a feedback form to the counselor via email and collecting the responses afterward. In addition, the system updates the guide's performance statistics based on the details of the completed tour. At the same time, it sends a notification to remind the relevant personnel to log the details of the tour. Combining the process at the facade ensures consistency and decreases complexity to the user as it works for simplifying the entire work in the post-tour management process. Thus, this abstracts all that complexity and simplifies the maintenance of the whole system.

2.3. Strategy

Communication with the form submitter is important for smooth coordination in processing the applications of the BILFO application. One may apply individually or on behalf of a high school. The details of the contact person should be full and accurate in order to perform all subsequent steps of the application process for each tour. For applications that come as an individual application, this is captured directly from the form submitted by the applicant. If it were for a high school, then such information will be supplied through the counsellor. To address this, we implement the Strategy Design Pattern so that the system chooses an appropriate strategy to retrieve contact information dynamically for a specific application type. This, helps us maintain the whole approval process easily.