

## **CS 319-1 Group 8**

### **Deliverable 3 - 1st Iteration**

### **Bilkent Tanıtım Ofisi Management System**

Short-name: BILFO

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# 1. Design Goals

## 1.1. Functionality

One of BILFO's most important design goals is its functionality. BILFO aims to satisfy the needs of the Information Office and provide a comprehensive program that contains all of the functionalities of the previous system. In addition to implementing already existing features that were previously manually done, we aim to implement more features that we think are useful and weren't possible previously such as a feedback system, statistical data collecting and viewing system, viewing and editing system for availability schedules of guides and advisors, and an e-mail system to notify users. These features will increase the usefulness of our program, but it may lead to performance issues because more features mean more data stored and more data makes it time-consuming to find the necessary data. Additionally, the presence of too many features may lead to UI clusters decreasing usability. However, the functionalities are imperative for our program.

## 1.2. Security

BILFO aims to serve the entire staff of the Bilkent Information Office along with the applicants who are high school counselors and individuals who want to apply for a tour. Hence, the application stores the information of many people, including their names, passwords, phone numbers, emails, and Bilkent IDs if applicable. BILFO also stores many more not vitally private information which needs some kind of abstraction to give each user access only to the parts that they're authorized to. To provide some kind of layer of security, the entire list of counselors, schools, and previously gathered data can only be seen by the coordinator, acting director, and the admin. Also, the staff of the information office does not register to the system, they are added by the admin at the start. Guides can be added by coordinators too. After the users are added, they are sent an email with their passwords. The users must change their initial passwords to a new password that includes a special character, a number, and an uppercase letter. To enhance security, after 5 failed log-in attempts users are blocked temporarily from attempting to log in. Additionally, a captcha is present on each application form. For the security of the passwords, we use a hashing algorithm to store the hashed passwords in the database. To secure our MongoDB database, and to have protection against injection attacks we sanitize user inputs before passing them as queries. However, some of these security measures lead to possible drawbacks. One of them is the decreased performance. The encryption and decryption process of passwords can take longer than expected. These measures also decrease the usability of BILFO to a degree. The captcha can annoy users while the specifications that a password should fit may make it hard for users to memorize the password. Also, some of the security functionalities can be false positives blocking users from using the system as wanted.

## 2. Subsystem Decomposition Diagram

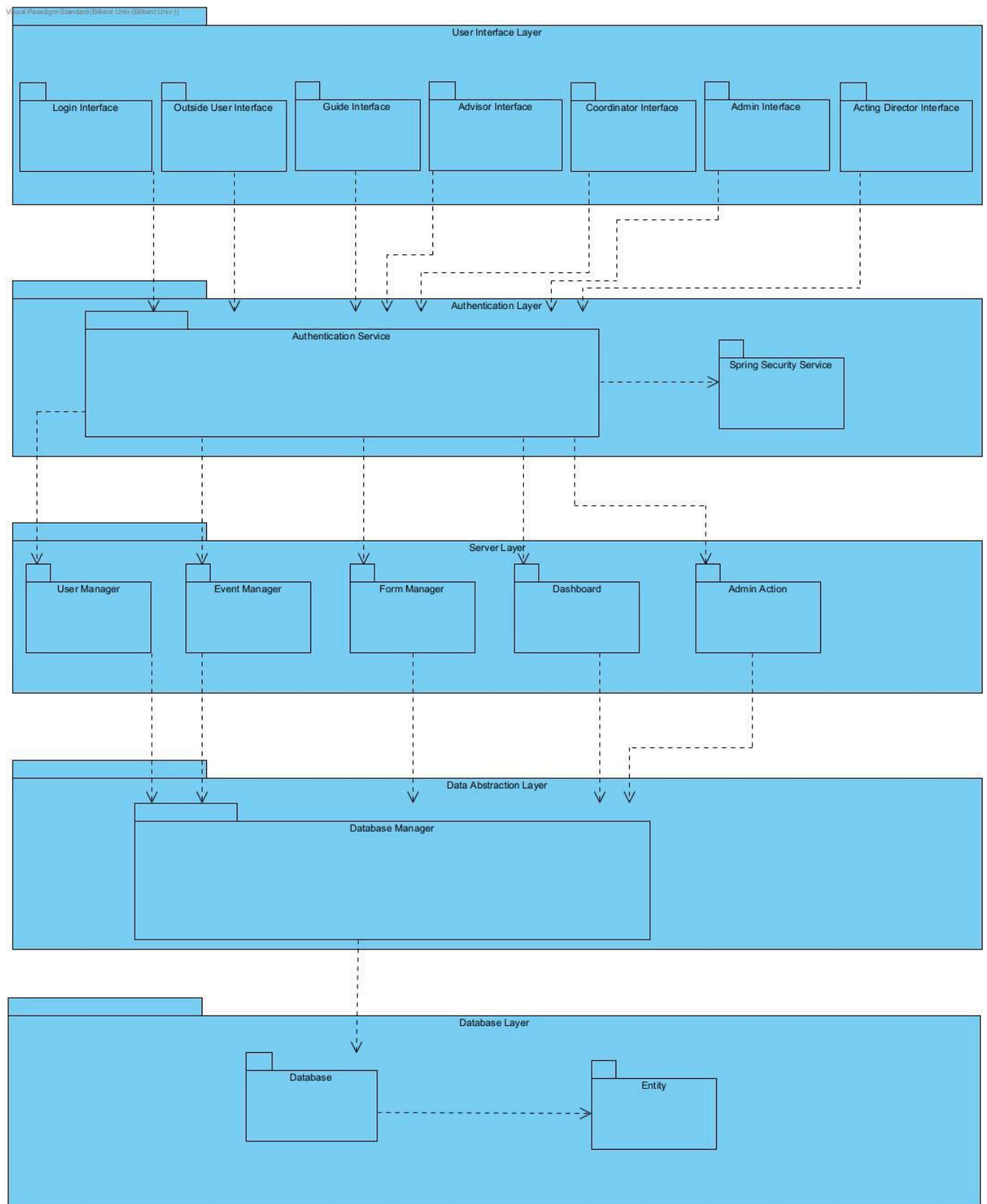


Fig. 1. Subsystem Decomposition Diagram