Object-oriented programming

Individual project

Hospital

The aim of this project is to create an administrative system for a hospital. The system is to support simple hospital employee registration. Each employee has a name, surname and id number as well as username and password. There are the following types of users in the system: doctor, nurse, administrator.

The doctor, in addition to the standard data of each user, also has a specialty (cardiologist, urologist, neurologist or laryngologist) and GMC (7 digits) number. Doctors and nurses also have a list of their 24-hour duties, assuming that one person can have a maximum of 10 duties per month and their duties must not occur day after day. In addition, there may be only one doctor on duty per day for a given specialization (e.g. a cardiologist, urologist and laryngologist may be on duty on a given day, but not two cardiologists).

After starting, the system asks you for your username and password. After logging in, in the case of doctors and nurses, it is only possible to display a list of all doctors and nurses (first name, last name, position + specialisation, if present) and the duty plan of the indicated person in a given month.

The administrator after logging in sees all users on the list. He can also edit the data of each of them (along with the duty schedule) and add new users (including administrators) to the system.

At the end of the program, the entire employee list is serialized and saved to a file, and at start-up - read and deserialized.

The whole world of employees is to be modelled in a separate project (class library), and the control panel - as a separate application (*Console*, *Win Forms* or *WPF*).

The project must be implemented in accordance with the object-oriented programming paradigm and must use inheritance, encapsulation, abstraction and polymorphism. In addition, it must be fault tolerant (both against user and system errors, e.g. missing file).