OBJECT ORIENTED DESIGN THROUGH EXAMPLE
CLINIC FOR AESTHETIC SURGERY

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ABSTRACT

This paper aims to demonstrate method of diagram UML. The theme of this work is private clinic for aesthetic surgery. This theme has been taken as an example because it is wide and has possibilities to demonstrate method of diagram UML.

Key words: Use Case Diagram, Sequence Diagram, Activity Diagram, Class Diagram, Package diagram.

1. INTRODUCTION

This Clinic offers following services: operation as well as the interventions like removing of moles, etc. For these interventions neither hospitalization nor special tests are necessary. Interventions are performed with or without local anesthesia. Preparations are necessary for operation, that is procedure done by team of experts psychologist, internist with cardiologist, and aesthetic surgeon.

2. DESCRIPTION OF A PROBLEM

2.1. Procedure before patient reception

Persons interested in Clinic services, at first, in operations, come to appointed meeting and testing with psychologist. After positive estimation given by psychologist, they are sent to aesthetic surgeon for agreement. Surgeon estimates whether expectations are real and if they are he claims laboratory analyses and as well as thinking of internist. After summering of results, surgeon makes final decision whether potential patient will be operated or not. In the case that some of results are unsatisfactory potential patient is rejected. In other case patient can be sent to the nurse’s guidance to the reception.

2.2. Description of the classes and characteristics

If the potential patient is sent to operation he is registered in Clinic IS. Patient characteristics are: PIN, name and surname, telephone number, date of birth. Operations which are input are input of new patient and listing. These data are saved and it’s not allowed to be deleted. During the reception of patient, his patient list has been opened with the data of reception and all necessary operations.

Pricelists contain the prices, identification and name. Services can be the interventions, and the time needed for them, and operations, with days number for hospitalization. All classes include operation input(), listing() and deleting().
For doctors, the following data are collected: name, surname, mobile and official phone, and ID. The patient list contains the names of all doctors in charge of the patient as well as the services scheduled and/or performed. There is also space for description of the moment condition or some other important fact for the patient. The patient list contains an operation form for the discharge list(), by which the discharging list of the patient is formed.

3. UML DIAGRAMS

3.1. Behaviour diagrams

Behavior diagrams emphasize what must happen in the system being modeled. Since behavior diagrams illustrate the behavior of a system, they are used extensively to describe the functionality of software systems.

Use case diagram: describes the functionality provided by a system in terms of actors, their goals represented as use cases, and any dependencies among those use cases (Figure 1).

![Use Case Diagram](image_url)
**Activity diagram:** describes the business and operational step-by-step workflows of components in a system. An activity diagram shows the overall flow of control (Figure 2).

![Activity Diagram](image)

**Figure 2: Activity Diagram**

### 3.2. Interaction diagrams

Interaction diagrams, a subset of behaviour diagrams, emphasize the flow of control and data among the things in the system being modeled:
**Sequence diagram:** shows how objects communicate with each other in terms of a sequence of messages. Also indicates the lifespans of objects relative to those messages (Figure 3).

![Sequence Diagram](image)

**Figure 3: Sequence Diagram**

### 3.3. Structure diagrams

Structure diagrams emphasize the things that must be present in the system being modeled. Since structure diagrams represent the structure, they are used extensively in documenting the software architecture of software systems.
Class diagram: describes the structure of a system by showing the system's classes, their attributes, and the relationships among the classes (Figure 4).

Figure 4: Class Diagram

Package diagram: describes how a system is split up into logical groupings by showing the dependencies among these groupings (Figure 4).

Figure 5: Package diagram
4. CONCLUSION

Solution to the problem of the part of the business of plastic surgery clinics is shown in diagrams UML. This example suggests that it is possible to simply change the designed information system (IS) in the future. Using the implemented IS it happens that the existing procedures are not related to the current business or after a while it comes to legal and organizational changes. In this case it is necessary to modify the existing IS. After the object designed information system can be accommodated and work on the existing IS, which is often largely synchronized (primarily for staff).

REFERENCES