İTÜ
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19.03.2019

Object Oriented Modeling and Design 3rd Assignment

Question:

Assume that you have to design a part of the "library automation software". Consider the use case written in the 1st assignment.

Remember:

- There are two types of users: Academic personnel and undergraduate students
- Two types of media can be barrowed: Book, Multimedia material
- The operation is performed using the Self-Check machine.

Consider the following operations:

The user enters her ID number and the PIN. If the PIN is accepted, the user enters the ID number of the media (via barcode reader) to be barrowed.

The system checks the rules and accepts (or does not) the barrow-operation.

If the user has more media to barrow, she repeats these steps, otherwise ends the barrow operation.

At the end, the system lists all the media that the user is currently keeping (There can be also previously barrowed items). The system shows return dates for all barrowed media.

Information about the media barrowed by the user are kept in a database system (for example SQL server). This database system may be replaced with another system in the future (for example Oracle). We are sure that, there will be always only one database in our system at a certain time.

- Construct and draw the proper design class diagram according to only the given operations by considering object-oriented design principles and GRASP patterns. It is important to protect the designed part of the system from possible changes.
- Draw sequential interaction UML diagrams for these operations.
  - You may assume that the necessary initial operations have been performed and all information about users and media reside in the memory in proper data structures.
  - You don't need to submit use cases or domain models.

SUBMISSION:

- Prepare your solution as a file(s) only in pdf format. You may split your drawing in separate pages and create more than one pdf files. In this case you have to combine them in a zip file.
- Upload the file (pdf or zip) to Ninova until **23.00 on 31 March 2019**, **Sunday**. Late submitted assignments are not accepted.
- **Cheating** will not be tolerated. If cheating is discovered, all responsible students will be subject to the University disciplinary proceedings.
  It is allowed to discuss how to solve a problem with your classmates; however, **this assignment is not group homework. The actual solution should be an independent effort**.