

ASSIGNMENT A1

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- **Objective**

The objective of this assignment is to allow students to become familiar with layers architectural pattern, repository, services and unit tests.

- **Application Description**

Use JAVA/C# Desktop to design and implement a ticket selling system or the Untold festival. The application should have two types of users (a cashier and an administrator) which must provide a username and a password to use the application.

The administrator user can perform the following operations:

- CRUD (Create, Retrieve, Update and Delete) on cashiers' information.
- CRUD on the performances at UNTOLD (Tiesto/ Armin/ Martin Garrix/ ...). Keep track of the Genre (Techno, Pop, Rap), Title (One last night in Berlin), Date and time of the show (2021 – 08 – 03 1am) and the Maximum Number of tickets per show (20000).
- Administrators can export all the tickets that were sold for a certain show (either in a csv or json file).

The cashier can perform the following operations:

- Sell tickets to a show. A ticket contains the show and can contain one or more places (I can buy a ticket for me and my brother).
- The system should notify the cashier when the number of tickets per show was exceeded.
- A cashier can see all the tickets that were sold for a show, cancel a reservation, or edit it.

- **Application Constraints**

- The data will be stored in a relational database.
- Use the Layers architectural pattern to organize your application.
- Passwords are encrypted when stored to the database with a one-way encryption algorithm (base 64).
- Provide unit tests for the number of tickets for show exceeded validation and the encryption algorithm.

- Your application should prove the use of validations (for example if the number of places in the sell ticket screen is below 1).
 - Use **factory method (not factory)** for export to csv/xml.
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- **Requirements**
 - Create the analysis and design document (see the template).
 - Implement and test the application.
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- **Deliverables**
 - GIT link with:
 - Analysis and design document.
 - Source files.
 - SQL script / Migration project for creating and populating the database with initial values.
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- **Deadline – 1 week**