

## ASSIGNMENT A1

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### 1. Objective

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

### 2. Application Description

Use JAVA/C# API to design and implement a ticket selling system for 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 Garix/ ...). 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 seats.
- 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.

### 3. 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 have client side validations and server side validations.
- Use **factory method (not factory)** for export to csv/xml.

#### **4. Requirements**

- Create the analysis and design document (see the template).
- Implement and test the application.

#### **5. Deliverables**

- GIT link with:
  1. Analysis and design document.
  2. Source files.
  3. SQL script / Migration project for creating and populating the database with initial values.

#### **6. Deadline – 2 weeks**