



The **Authenticator** entity allows **user authentication**, implements the **JWT** (JSON Web Token) standard, manages all authentications of given access tokens

Each registered user (subscriber) has a **unique username**

System Administrator (admin) is a kind of subscriber with managing permissions, **there has to be at least 1 at all times**

Each Owner/Manager object represents an ownership/management of a **single store** by a single user, therefore a **single user can be an owner in some stores and a manager in other stores** with no problem

Each **shopping basket** contains the requested products **from a single store**

Represents the **order history** of the user consists of **sub-orders**, one sub-order for the purchase from **each store**, each order is created from the current **shopping cart**, all of its information is **copied** from the baskets once the order system successfully processed it. It allows the **OrderSystem** to retrieve orders by **username**, by **storeId** or even show all **guest orders**

Checks the **availability** using the **external services** and the **store package**. Supports **concurrent runtime** meaning customers won't need to wait for each operation of other users before beginning its their runtime

The notification system implements the **Observer design pattern**, it holds a data structure containing all the notifications that are needed to be displayed in the UI, once the UI initiates a checkNotifications request (every 500 msec for example), the UserService returns all the notifications back to the UI, simulating a real time response of the server.

Each Owner **cannot appoint itself** (or any other subscriber that is already an owner/manager of this store), this condition is enforced and explained in the relevant appointment use-cases

The **Offer System** entity holds and handles all current **Appointment Offers** in the system, when **appointing** a new Owner or Manager the offer is kept in the Offer System until the subscriber **responds** to the offer by **accepting/rejecting** it, according to the **Appointment Use Cases** (requirements 4.3, 4.6)