Feature List

1. **User management:**
   - User creation.
   - User accounts management.
   - Clients rating functionality.
2. **Travels and tickets management:**
   - Travel creation.
   - Tickets requests and approval or rejection.
   - Selling tickets and creating a form.
3. **Reports and statistics:**
   - Client, tickets, travels.
4. **Notifications:**
   - Newly created ticket request.
   - Periodical notifications for sold tickets per travel.
   - Rejected travel.
   - Incoming travel with unsold tickets.

Application Structure

1. **MVC pattern.**
2. **Layered architecture, layers:**
   - model - entities.
   - repository - responsible for all database requests.
   - service - executes all the business logic.
   - controller - UI interactions are handled by controllers.
   - view - GUI representation of the model.
3. **Technologies:**
   - Gradle
   - Java 14, JavaFX
   - JPA, Hibernate
   - Postgresql
   - Log4j
   - JUnit
   - Mockito

Planned Sprints

Sprint 1: 28.09.2020-05.10.2020:
- Use case diagrams.
- Familiarizing with the technologies.

Sprint 2: 05.10.2020-12.10.2020:
- Modeling the database.
- Model the entities and their associations.
- ER diagram (Chen model).

Sprint 3: 12.10.2020-19.10.2020:
- Implement system login (authentication, authorization).
- Implement user creation.
- Implement user account management.

Sprint 4: 19.10.2020-26.10.2020:
- Implement client rating functionality.
- Implement reports and statistics with clients.

Sprint 5: 26.10.2020-02.11.2020:
- Implement travel creation.
- Implement reports and statistics with travels.

Sprint 6: 02.11.2020-09.11.2020:
- Implement ticket requests.
- Implement ticket approval or rejection.
- Implement reports and statistics with tickets.

Sprint 7: 09.11.2020-16.11.2020:
- Implement selling of tickets and form creation.
- Implement notifications.

Sprint 8: 16.11.2020-23.11.2020:
- Implement notifications.
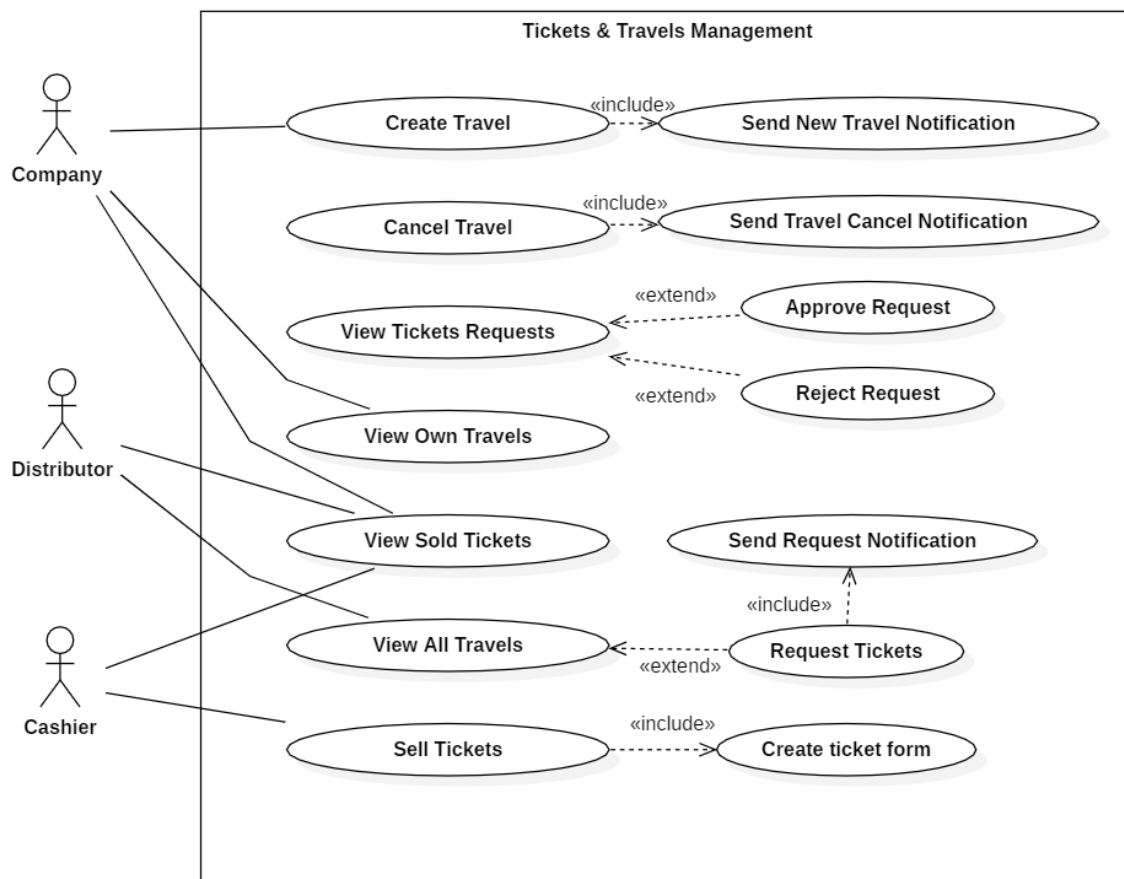- Writing integration & functional tests.

Sprint 9: 23.11.2020-30.11.2020:
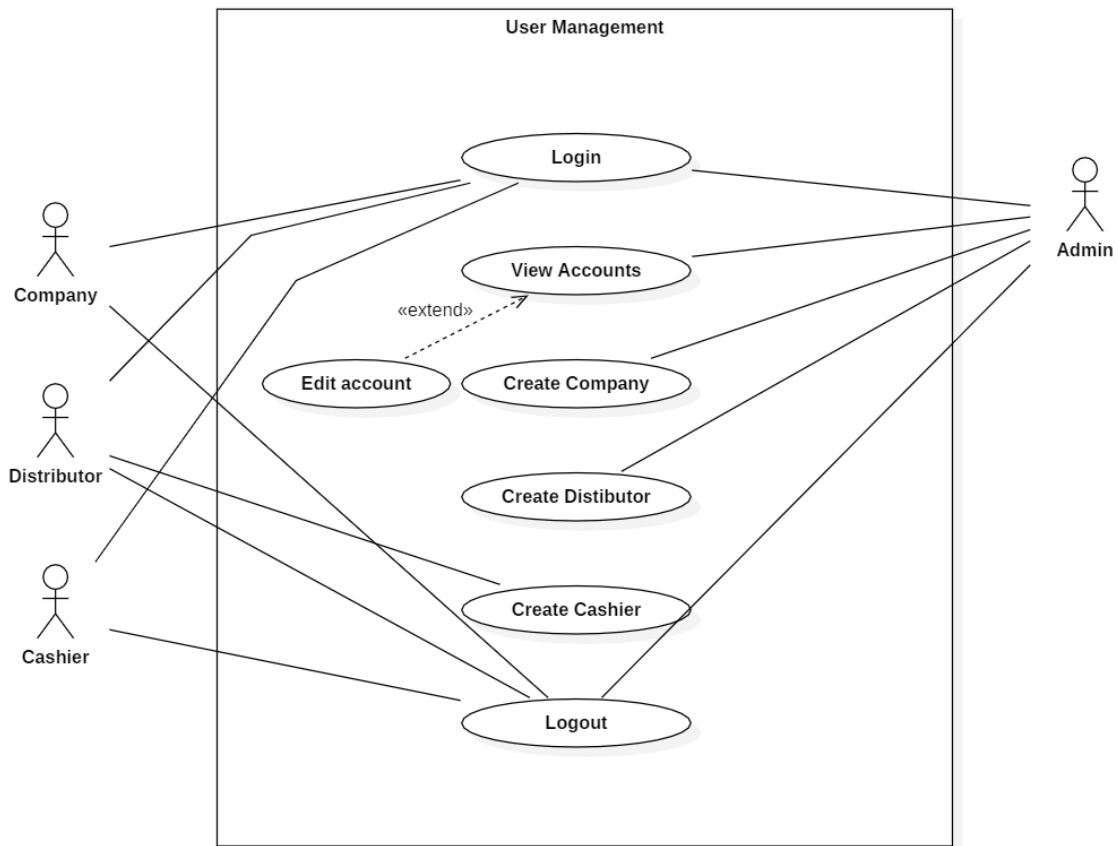- Writing tests.
- Refactoring.

Sprint 10: 30.11.2020-07.12.2020:
- Documentation.
- Preparation for project defence.

Use case diagrams

User Management

Login

View Accounts

«extend»

Edit account   Create Company

Create Distibutor

Create Cashier

Logout

Company

Distributor

Cashier

Admin

Entity Relationship Diagram (Chen notation)

Entities and attributes:

Travel: ID, Type, Status, Start date, End date, Ticket quantity, Current ticket quantity, Ticket price, Ticket buy limit, Details, Created at

Address: Address ID, Address

City: City ID, City name

Region: Region ID, Region name

Company: Client ID, Logo URL, Description

Distributor: Client ID

Cashier: Client ID, Created at, Honorarium

Ticket: Buyer name, Buyer phone, Buyer email, Created at

Client: User ID, Name, Phone, Client type

User: ID, email, username, password, role

Notification: ID, Type, Message, Created at

Relationships: stops at (Transport type, Arrival date), Location, city, in region, Creates, Own, Request ticket sell (Request status), is, belongs to, Sended, Received (Status), Creates, Sold