

Favorite quadcopters project.

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1. Task.

To develop web-application that simulates the work of the online store information system. The application have to perform the required user`s cases.

User cases:

- For clients:
 - To view catalog with the possibility of filtering by parameters;
 - To view and edit profile;
 - To view and edit user addresses;
 - To view and edit user password;
 - Checkout;
 - To view order history;
 - Repeat order;
- For managers:
 - To view clients orders;
 - To edit delivery status;
 - To view sales statistic (top 10 products, clients, proceeds per week, month);
 - To add new products;
 - To add and manage catalog categories.

Additionally, to develop co-application for advertisement generating from main application.

2. Project goals.

- The robust, useful and reliable system.
- Cohesive data model.
- User-friendly interface.
- Cohesive data model.
- Separate access to different system`s part.

3. Application description.

Web-application has two type of user: clients and managers.

Clients can view catalog, products, buy them. Clients also can change personal information, add and remove addresses, view order history.

Managers can add, update, delete products, their categories, properties and property groups. Managers also can looking for list of clients orders and edit their delivery status. Managers have clients options too.

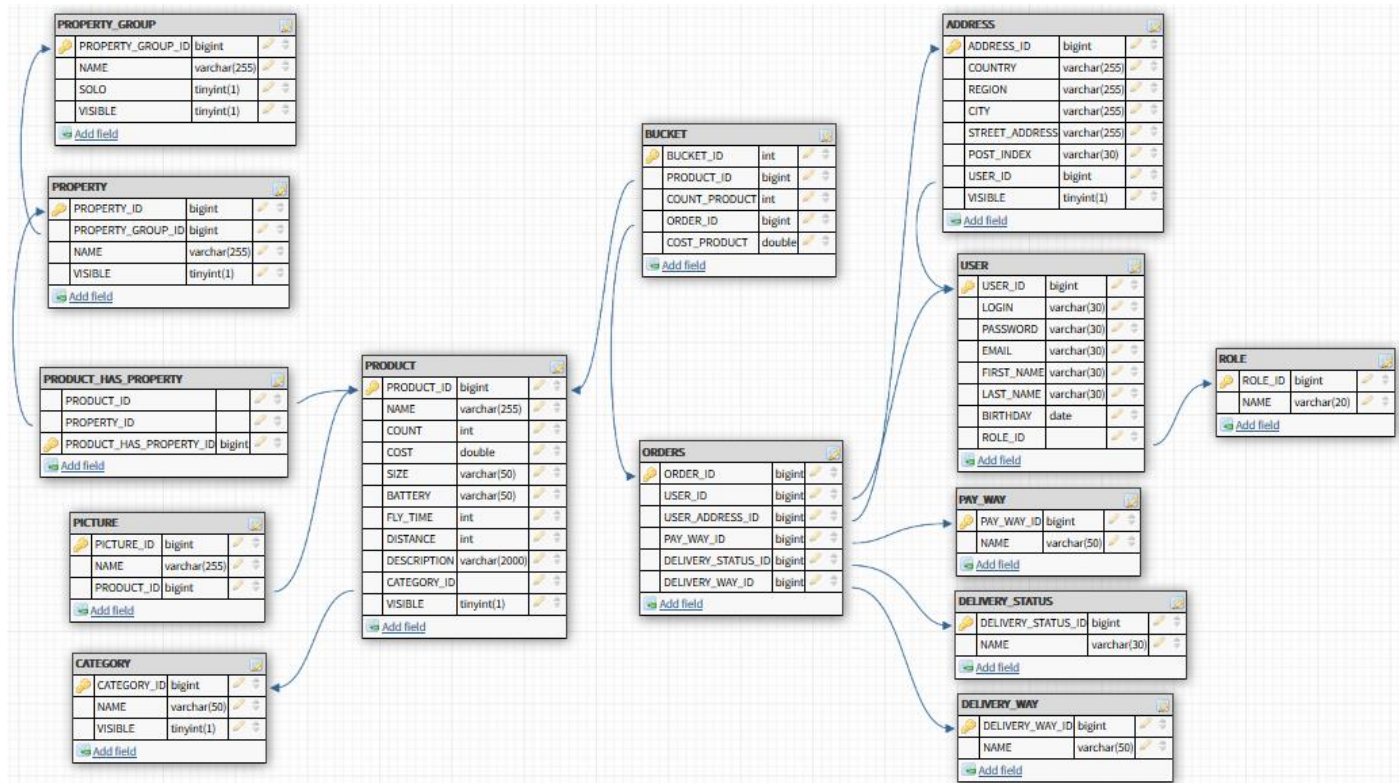
There is an authentication mechanism in system that control access to portal. Each user in application has access level that display what information he could get and what couldn't.

Data of users and their options store in reliable database.

4. Used Technologies.

- Instruments:
 - IDE - IntelliJ IDEA
 - Maven
 - Docker
- Technologies:
 - ActiveMQ 5.7
 - Ajax
 - Bootstrap 3.3.7
 - DB - MySQL 5.7
 - EJB 3
 - Jersey 1.19.4
 - Java 8
 - Javascript
 - JQuery
 - JPA 2.0
 - JSF 2.2.13
 - JSP 2.1
 - Junit 4.12
 - Log4j 1.2.17
 - Lombok 1.16.4
 - Mail-api 1.5
 - Mockito 1.10.19
 - Omnifaces 2.3
 - Primefaces 5.3
 - REST
 - Selenium 3.4
 - SonarQube 5.1
 - Spring 4.3.9
 - Spring Security 4.2.3
 - Tomcat 8.5.161
 - WildFly 10

5. Database model.



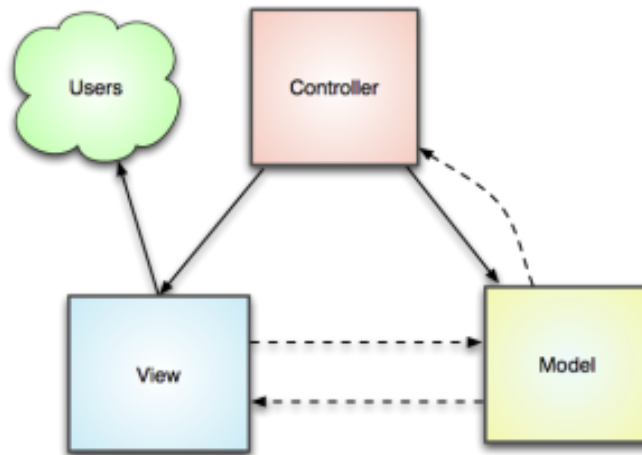
Order consists on "buckets" which has data about one product, his count in order, current cost at the checkout moment.

6. System infrastructure.

- Front-end (browser presentation level):
 - 1) Web-page structure - HTML
 - 2) Page-design - CSS
 - 3) Dynamic content - JavaScript, JQuery, Ajax.
- Back-end (server based level):
 - 1) Application server - WildFly
 - 2) Database - MySQL
 - 3) Server logic - Spring Framework
- Client advertisement application:
 - 1) Web-pages - JSF
 - 2) JMS - ActiveMQ
 - 3) Application server - WildFly
 - 4) Server logic - EJB
 - 5) WS - REST

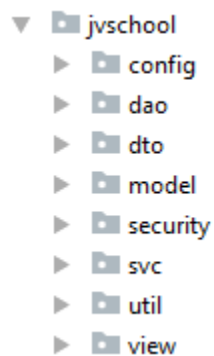
7. System architecture.

Architecture of server-based part presented by MVC - design pattern.

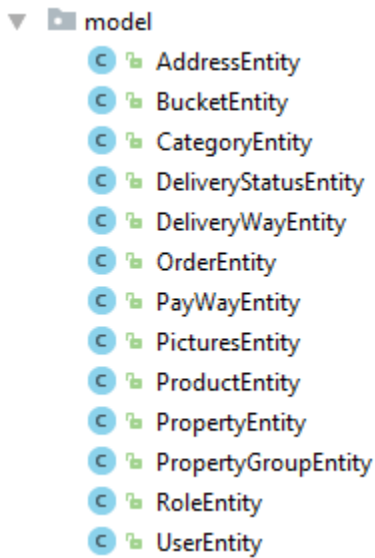


Class structure.

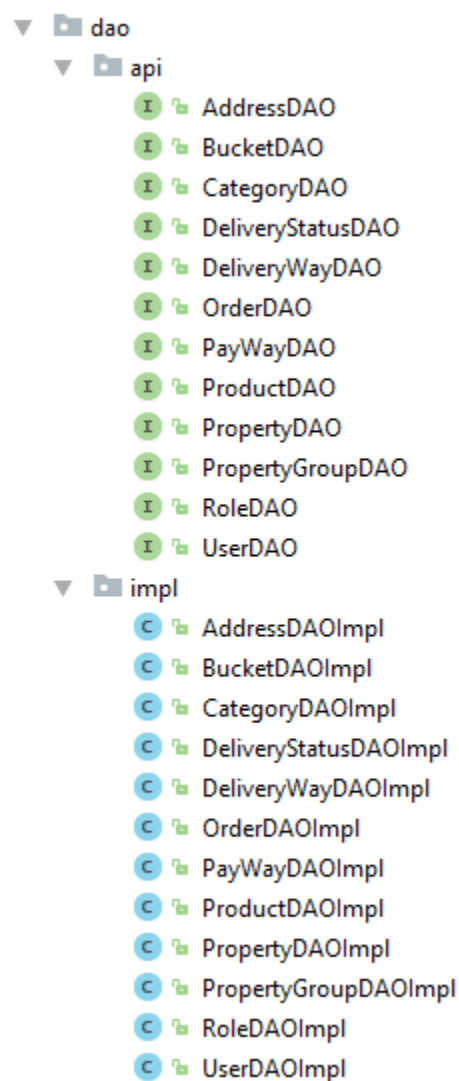
According MVC-pattern application has next structure:



Model level:



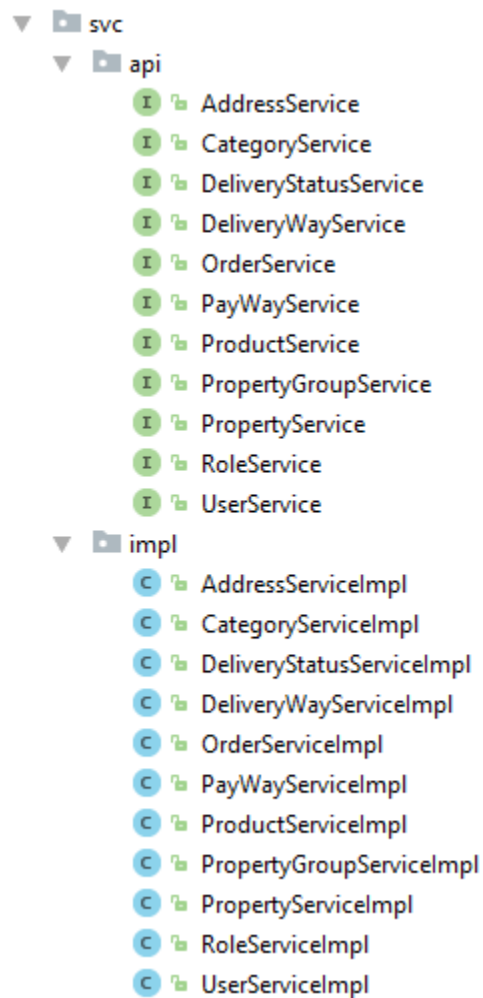
Model-service level:



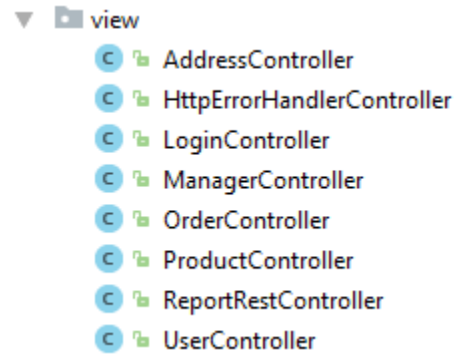
Each DAO class has queries to database. Developer has 3 ways to create query:

1. Native query
2. Hibernate query language
3. Criteria API

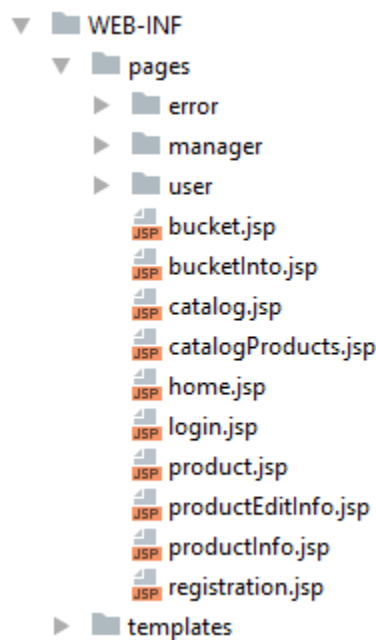
Service level:



View-service level:



View level:

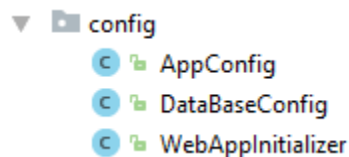


Directory *templates* is common. It contains navigation bar, header, scripts and shopping cart.

Directory *manager* contains pages which could see only users with role manager.

Directory *user* contains pages which could see users with roles client and manager.

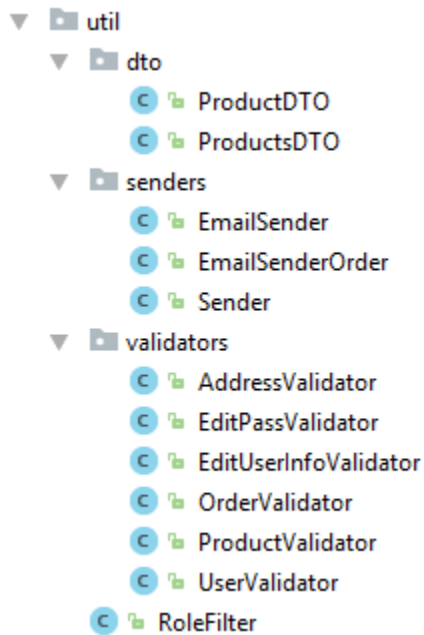
Configuration:



Security mechanism:



Support utilities:



*util.dto.** contains DTO for second application.

senders.Sender sends reports to second application by ActiveMQ.

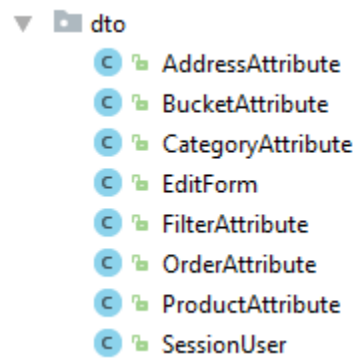
senders.EmailSender sends mails.

senders.EmailSenderOrder sends mail with details of the order.

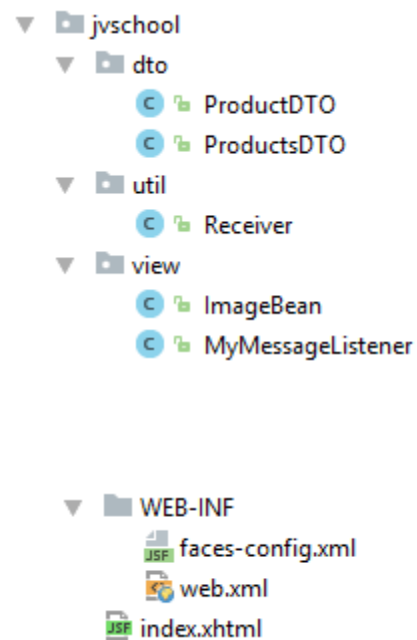
RoleFilter creates Session user with shopping cart and add him to session if he doesn't exist.

*validators.** contains some validators.

DTO:



Rest client application:



8. Additional features.

1. Email notifications.

After checkout user receives a letter with the details of his order (Pic. #1).

2. Product editing.

Manager could add items existing product, change his category, cost.

3. Product properties editing.

Manager could add, edit, remove, return product properties and their groups.

4. Selenium auto-testing.

Tests login and registration.

5. Docker.

Database and ActivMQ use docker images.



Order details.

favorite.quadcopters@gmail.com

Кому: limer@gmail.ru

сегодня, 22:33

Hello, Ludmila!

You registered order:

SYMA X5UW WIFI FPV With 720P HD Camera Altitude Hold Mode 2.4G 4CH 6-Axis Gyro RC Quadcopter RTF - Red

Count: 1

Cost: 62.99\$



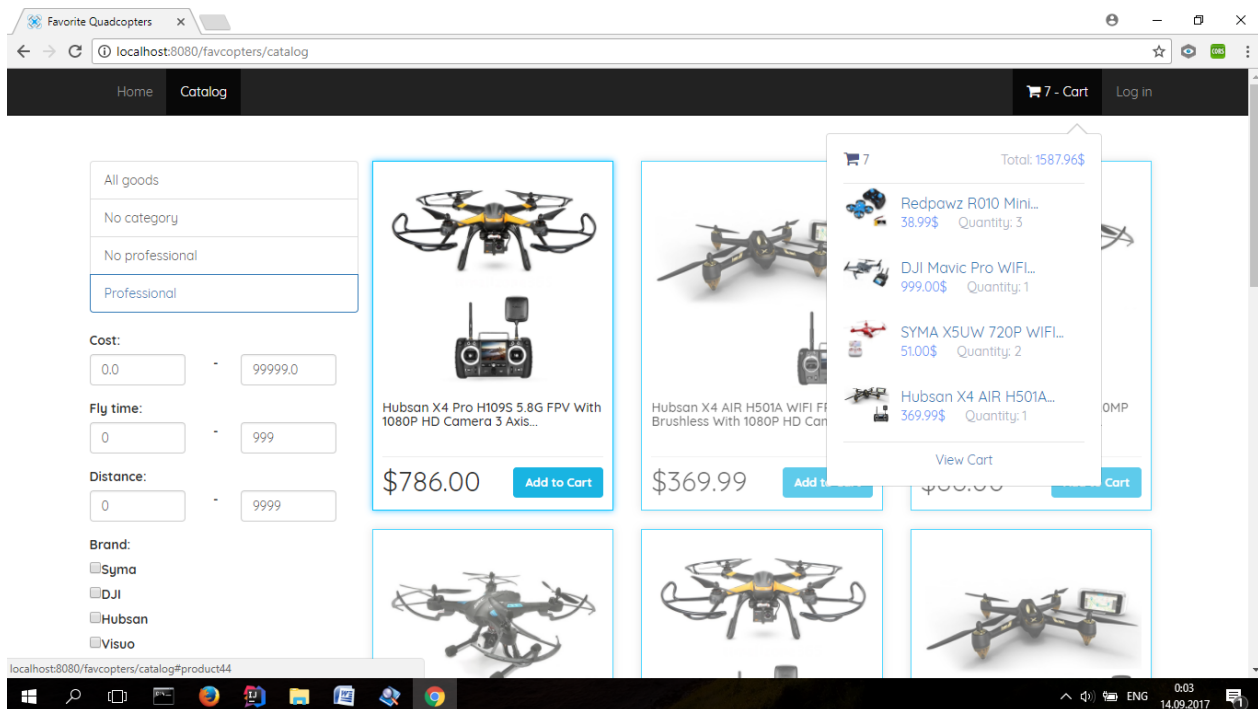
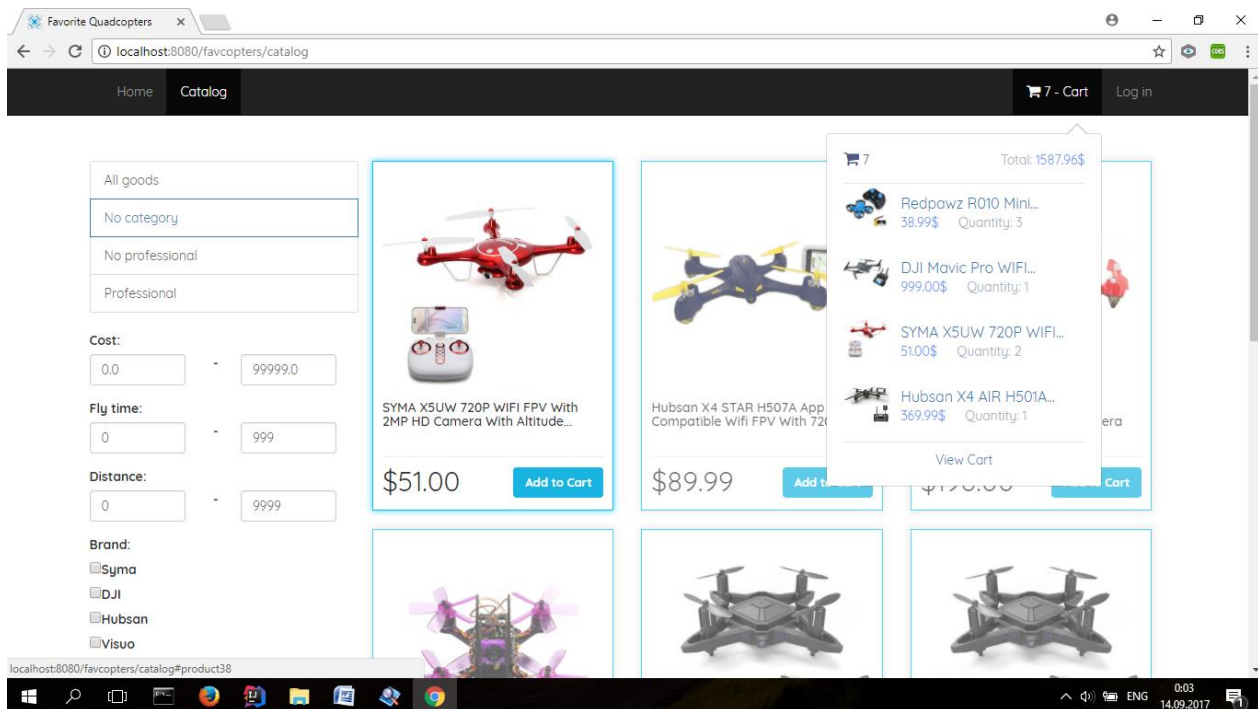
Total: 62.99\$

Best regards,

Favorite copters.

Picture 1.

9. UI.



Favorite Quadcopters x

localhost:8080/favcopters/bucket

Home Catalog 7 - Cart Log in

Shopping Cart

#Id	Name	Availability	Count	Cost \$	Remove
2	Redpawz R010 Mini RC Quadcopter RTF + Extra 3.7V 260mAh Li-po Battery - Blue	✓	- 3 +	38.99	
22	DJI Mavic Pro WIFI 4K UHD Camera GPS Obstacle Avoidance Mini Foldable Quadcopter RTF	✓	- 1 +	999.00	
38	SYMA X5UW 720P WIFI FPV With 2MP HD Camera With Altitude Mode RC Quadcopter RTF	✓	- 2 +	51.00	
43	Hubsan X4 AIR H501A WIFI FPV Brushless With 1080P HD Camera GPS Waypoint RC Quadcopter RTF	✓	- 1 +	369.99	
Total:				1587.96	CheckOut

Windows taskbar: 14.09.2017 0:05

Favorite Quadcopters x

localhost:8080/favcopters/profile/

Home Catalog My Room Administration 7 - Cart Log out

My Profile

My Address

My Orders

Personal info

First name:

Last name:

Birthday:

Email:

Login:

[Save Changes](#) [Cancel](#)

Change Password

Password:

Confirm password:


[Save Changes](#) [Cancel](#)

Windows taskbar: 14.09.2017 0:07

Favorite Quadcopters x

localhost:8080/favcopters/catalog/product/23

Home Catalog My Room Administration 7 - Cart Log out



DJI Mavic Pro WIFI 4K UHD Camera GPS Obstacle Avoidance Mini Foldable Quadcopter RTF

#Id: 23

999.00\$

✓ In stock

Add to cart Edit product

Description

The DJI Mavic Pro folds down as small as a bottle of water, making it small enough to bring with you everywhere. True 4K, fully stabilized ensures smooth footage, 4K camera is supported by a miniaturized camera stabilization system that stabilizes the entire camera, letting you extract the most from every single pixel. New OcuSync transmission system offers up to 4.3 miles (7km) of transmission range. ActiveTrack, TapFly and other smart features make professional

Details

Windows taskbar: 0:10 14.09.2017

Favorite Quadcopters x

localhost:8080/favcopters/management/adminOrders/52

Home Catalog My Room Administration 7 - Cart Log out

Order list

Shop statistic

Goods management

Catalog management

Order #52

#User id: 14

Delivery status: Await

Edit delivery status: Edit

Pay way: Card

Delivery way: Post

Address: Turkey, Antalya, Antalya, Kale Caddesi, post code 15781

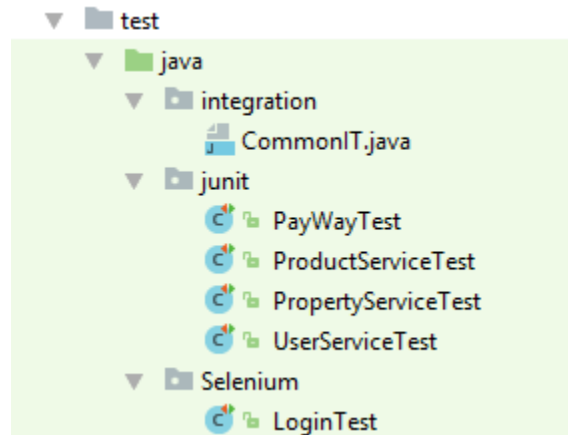
#Id	Name	Count	Cost
3	Hubsan X4 Star Pro H507A WIFI FPV With 720P HD Camera GPS Waypoints Follow Me RC Quadcopter	1	\$85.99
40	Hubsan X4 STAR H507A App Compatible Wifi FPV With 720P HD Camera GPS RC Quadcopter RTF	1	\$91.00

Windows taskbar: 0:12 14.09.2017

10. Code quality.

Tests.

Test structure:



JUnit tests:

```
-----
T E S T S
-----
Running junit.PayWayTest
Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.814 sec
Running junit.ProductServiceTest
Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.042 sec
Running junit.PropertyServiceTest
Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.033 sec
Running junit.UserServiceTest
Tests run: 7, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.048 sec

Results :

Tests run: 13, Failures: 0, Errors: 0, Skipped: 0
```

Integration Tests.

Tests dependency injection.

```
2017-09-13 21:25:22 INFO DriverManagerConnectionProviderImpl:259 - HHH000030: C1  
eaning up connection pool [jdbc:mysql://localhost:3306/MYSHOP_SCHEMA]  
  
Results :  
  
Tests run: 28, Failures: 0, Errors: 0, Skipped: 0
```

Selenium tests.

The screenshot shows the Selenium IDE interface. The 'Run' tab is active, displaying the results of a test named 'LoginTest'. The test suite 'LoginTest (Selenium)' has a total duration of 33s 712ms. The test results are as follows:

Test Name	Duration
testRegistration	11s 691ms
login	5s 851ms
loginFalsePassword	5s 179ms
testRegistrationFailConfirmP	6s 85ms
loginNullPassword	4s 906ms

Tests Passed: 5 passed

The console output shows the following log messages:

```
"C:\Program Files\Java\jdk1.8.0_121\bin\java" ...  
Starting ChromeDriver 2.25.426923 (0390b88869384d6eb0d5d09729679f934aab9eed) on port 28350  
Only local connections are allowed.  
cem 13, 2017 9:15:48 PM org.openqa.selenium.remote.ProtocolHandshake createSession  
INFO: Detected dialect: OSS  
Starting ChromeDriver 2.25.426923 (0390b88869384d6eb0d5d09729679f934aab9eed) on port 9085  
Only local connections are allowed.  
cem 13, 2017 9:15:56 PM org.openqa.selenium.remote.ProtocolHandshake createSession  
INFO: Detected dialect: OSS
```

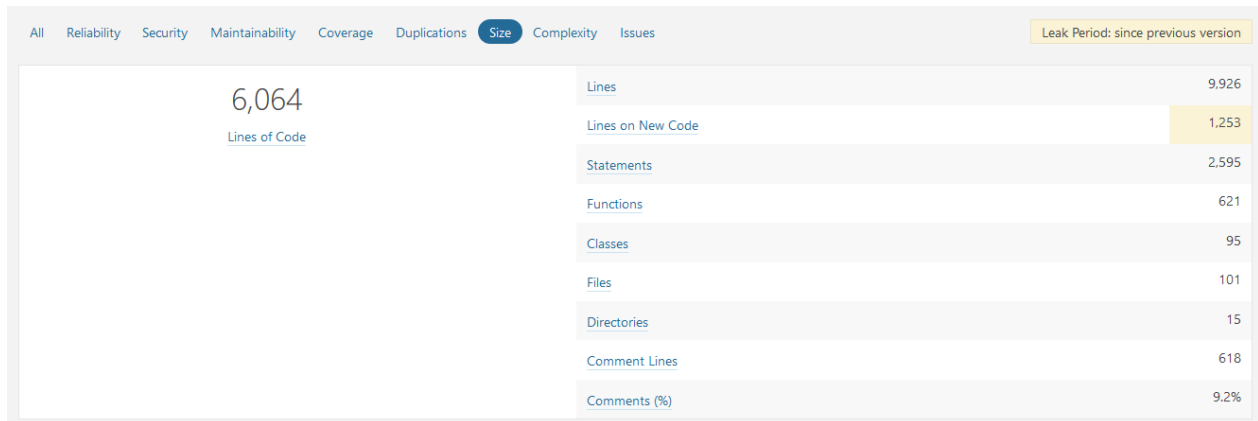
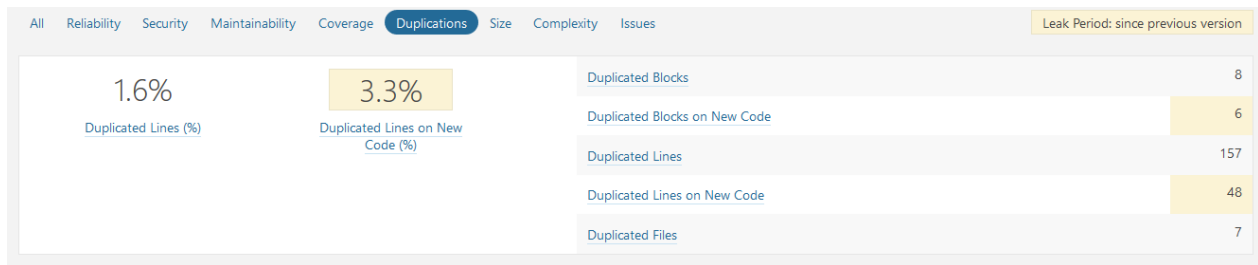
Sonar report:

The SonarQube report displays the following metrics:

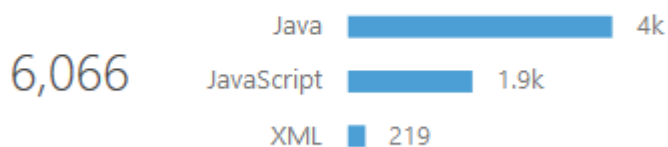
Metric	Value	Rating
Reliability	0 Bugs, 0 New Bugs	A
Security	0 Vulnerabilities, 0 New Vulnerabilities	A
Maintainability	39 Code Smells, 14 New Code Smells	A

The report also includes the following remediation efforts:

Metric	Value
Reliability Remediation Effort	0
Reliability Rating on New Code	A
Security Remediation Effort	0
Security Rating on New Code	A
Technical Debt	7h 54min
Added Technical Debt	2h 8min
Technical Debt Ratio	0.3%
Technical Debt Ratio on New Code	0.7%



Lines of Code 



Logging.

resources/log_mms.txt

```

2017-09-13 15:12:22 INFO DispatcherServlet:508 - FrameworkServlet 'dispatcher': initialization complete
2017-09-13 15:13:25 INFO ProductDAOImpl:39 - Add product: ProductEntity(productId=0, productName=1
2017-09-13 15:14:59 INFO PropertyGroupDAOImpl:51 - Add property group: PropertyGroupEntity(propert
2017-09-13 15:15:11 INFO PropertyGroupDAOImpl:65 - Remove property group: test
2017-09-13 15:15:17 INFO PropertyGroupDAOImpl:65 - Remove property group: test1
2017-09-13 15:15:58 INFO OrderDAOImpl:35 - Save order: OrderEntity(orderId=0, dateTimeOrder=2017-0
Easy to control and more relaxation and time to enjoy the flight experience.

```

11. Build and deploy.

Database:

```
docker run -p 3306:3306 --name memories -e  
MYSQL_ROOT_PASSWORD=password -d mysql:5.7
```

For creating table use:

database.sql

Insert data with:

inserts.sql

Start ActiveMQ:

```
docker pull rmohr/activemq  
docker run -p 61616:61616 -p 8161:8161 rmohr/activemq
```

Start WildFly application server:

standalone

Main application installation (in JavaSchoolProject directory):

mvn clean install

mvn wildfly:deploy

REST-client application installation (in JavaSchoolProjectAdvertisement directory):

mvn clean install

mvn wildfly:deploy

12. Future improvement.

1. Adding new functionality (payment system, etc.).
2. Refactoring and optimization code.