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*Кафедра ИУ-3*

***Отчёт по лабораторной работе №3***

*по курсу*

***«Разработка ПО»***

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*Москва, 2014*

## Задание

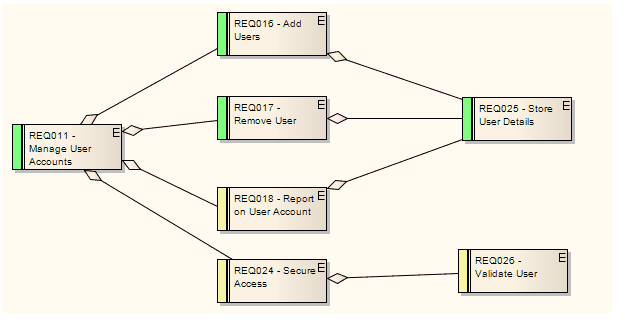
Создать тестовый Eclipse-проект, в котором происходит формирование информационной модели данных диаграммы и работа с данными в соответствии со своим вариантом задания и требованиями.

Добавить созданные проект в репозитарий системы контроля версий.

## Цель лабораторной работы

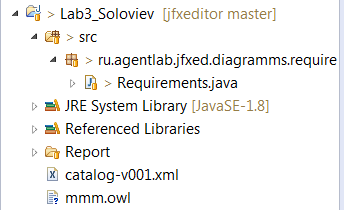
* Углубление навыков работы с системой контроля версий
* Ознакомление на практике с основами графовых БД и технологий Semantic Web

## Картинка-задание

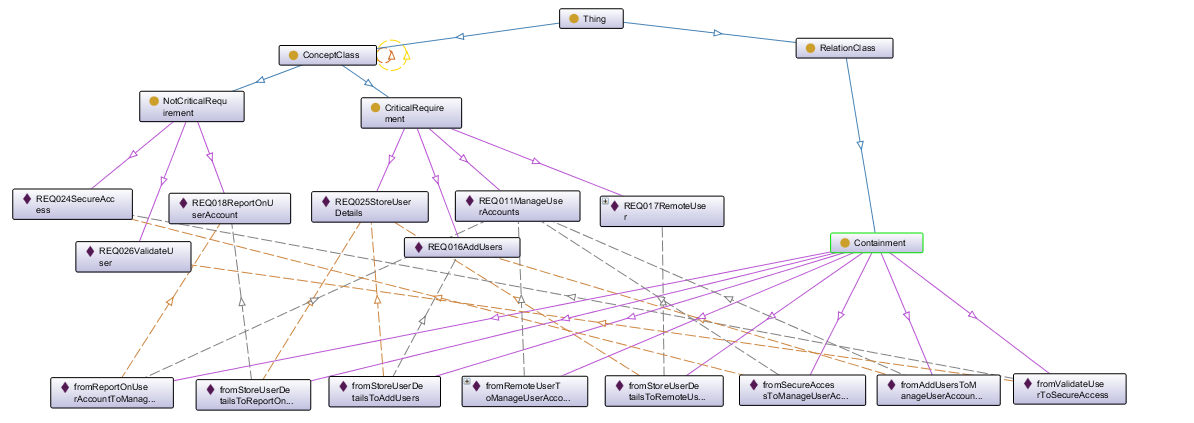


*Рис.1 - Задание*

## Выполнение



*Рис.1 – Структура папок*



*Рис.3 - Онтология, созданная в Protege*

*Файл Requirements.java*

*package ru.agentlab.jfxed.diagramms.requirements;*

*import com.hp.hpl.jena.ontology.Individual;*

*import com.hp.hpl.jena.ontology.ObjectProperty;*

*import com.hp.hpl.jena.ontology.OntClass;*

*import com.hp.hpl.jena.ontology.OntModel;*

*import com.hp.hpl.jena.rdf.model.ModelFactory;*

*public class Requirements {*

*static final String resourceURL = "http://www.eswc2006.org/technologies/ontology";*

*static final String NS = resourceURL + ": ";*

*// test from source tree*

*public static void main (String[] args) {*

*// Объявление модели.*

*OntModel m = ModelFactory.createOntologyModel();*

*ObjectProperty propTo = m.createObjectProperty(NS + "to");*

*ObjectProperty propFrom = m.createObjectProperty(NS + "from");*

*// Объявление классов для узлов графа.*

*/ Суперкласс для двух классов прямоугольников.*

*OntClass rectangleClass = m.createClass(NS + "RectangleClass");*

*OntClass greenRectangle = m.createClass(NS + "Green Rectangle");*

*greenRectangle.addSuperClass(rectangleClass);*

*OntClass yellowRectangle = m.createClass(NS + "Yellow Rectangle");*

*yellowRectangle.addSuperClass(rectangleClass);*

*// Объявление связей.*

*// Родительский класс для всех связей.*

*OntClass conceptClass = m.createClass(NS + "Concept");*

*OntClass containmentClass = m.createClass(NS + "Containment"); // Связь Containment.*

*// Привязываем нашу связь к классу связей.*

*containmentClass.addSuperClass(conceptClass);*

*propFrom.addDomain(rectangleClass);*

*propTo.addDomain(rectangleClass);*

*propFrom.addRange(rectangleClass);*

*propTo.addRange(rectangleClass);*

*// Наполнение базы экземплярами.*

*Individual storeUserDetailsIndividual = m.createIndividual(NS + "REQ025 - Store User Details", greenRectangle);*

*Individual validateUserIndividual = m.createIndividual(NS + "REQ026 - Validate User", yellowRectangle);*

*Individual addUsersIndividual = m.createIndividual(NS + "REQ016 - Add Users", greenRectangle);*

*Individual remoteUserIndividual = m.createIndividual(NS + "REQ017 - Remote User", greenRectangle);*

*Individual reportOnUserAccountIndividual = m.createIndividual(NS + "REQ018 - Report On User Account", greenRectangle);*

*Individual secureAccessIndividual = m.createIndividual(NS + "REQ024 - Secure Access", yellowRectangle);*

*Individual manageUserAccountIndividual = m.createIndividual(NS + "REQ011 - Manage User Accounts", greenRectangle);*

*// Связи от storeUserDetailsIndividual.*

*Individual fromStoreUserDetailsToAddUsers = m.createIndividual(NS + "fromStoreUserDetailsToAddUsers", containmentClass);*

*fromStoreUserDetailsToAddUsers.addProperty(propFrom, storeUserDetailsIndividual);*

*fromStoreUserDetailsToAddUsers.addProperty(propTo, addUsersIndividual);*

*Individual fromStoreUserDetailsToRemoteUser = m.createIndividual(NS + "fromStoreUserDetailsToRemoteUser", containmentClass);*

*fromStoreUserDetailsToRemoteUser.addProperty(propFrom, storeUserDetailsIndividual);*

*fromStoreUserDetailsToRemoteUser.addProperty(propTo, remoteUserIndividual);*

*Individual fromStoreUserDetailsToReportOnUserAccount = m.createIndividual(NS + "fromStoreUserDetailsToReportOnUserAccount", containmentClass);*

*fromStoreUserDetailsToReportOnUserAccount.addProperty(propFrom, storeUserDetailsIndividual);*

*fromStoreUserDetailsToReportOnUserAccount.addProperty(propTo, reportOnUserAccountIndividual);*

*// Связи от validateUserIndividual.*

*Individual fromValidateUserToSecureAccess = m.createIndividual(NS + "fromValidateUserToSecureAccess", containmentClass);*

*fromValidateUserToSecureAccess.addProperty(propFrom, validateUserIndividual);*

*fromValidateUserToSecureAccess.addProperty(propTo, secureAccessIndividual);*

*// Связи к manageUserAccountIndividual.*

*Individual fromAddUsersToManageUserAccount = m.createIndividual(NS + "fromAddUsersToManageUserAccount", containmentClass);*

*fromAddUsersToManageUserAccount.addProperty(propFrom, addUsersIndividual);*

*fromAddUsersToManageUserAccount.addProperty(propTo, manageUserAccountIndividual);*

*Individual fromRemoteUserToManageUserAccount = m.createIndividual(NS + "fromRemoteUserToManageUserAccount", containmentClass);*

*fromRemoteUserToManageUserAccount.addProperty(propFrom, remoteUserIndividual);*

*fromRemoteUserToManageUserAccount.addProperty(propTo, manageUserAccountIndividual);*

*Individual fromReportOnUserAccountToManageUserAccount = m.createIndividual(NS + "fromReportOnUserAccountToManageUserAccount", containmentClass);*

*fromReportOnUserAccountToManageUserAccount.addProperty(propFrom, reportOnUserAccountIndividual);*

*fromReportOnUserAccountToManageUserAccount.addProperty(propTo, manageUserAccountIndividual);*

*Individual fromSecureAccessToManageUserAccount = m.createIndividual(NS + "fromSecureAccessToManageUserAccount", containmentClass);*

*fromSecureAccessToManageUserAccount.addProperty(propFrom, secureAccessIndividual);*

*fromSecureAccessToManageUserAccount.addProperty(propTo, manageUserAccountIndividual);*

*m.write(System.out, "N3");*

***try*** *{*

*m.write(****new*** *FileWriter("mmm.owl"), "RDF/XML");*

*}* ***catch*** *(IOException e) {*

*e.printStackTrace();*

*}*

*}*

*}*

*Вывод программы:*

@prefix owl: <http://www.w3.org/2002/07/owl#> .

@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .

@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .

@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .

<http://www.eswc2006.org/technologies/ontology: fromValidateUserToSecureAccess>

a <http://www.eswc2006.org/technologies/ontology: Containment> ;

<http://www.eswc2006.org/technologies/ontology: from>

<http://www.eswc2006.org/technologies/ontology: REQ026 - Validate User> ;

<http://www.eswc2006.org/technologies/ontology: to>

<http://www.eswc2006.org/technologies/ontology: REQ024 - Secure Access> .

<http://www.eswc2006.org/technologies/ontology: REQ026 - Validate User>

a <http://www.eswc2006.org/technologies/ontology: Yellow Rectangle> .

<http://www.eswc2006.org/technologies/ontology: REQ017 - Remote User>

a <http://www.eswc2006.org/technologies/ontology: Green Rectangle> .

<http://www.eswc2006.org/technologies/ontology: Concept>

a owl:Class .

<http://www.eswc2006.org/technologies/ontology: fromStoreUserDetailsToAddUsers>

a <http://www.eswc2006.org/technologies/ontology: Containment> ;

<http://www.eswc2006.org/technologies/ontology: from>

<http://www.eswc2006.org/technologies/ontology: REQ025 - Store User Details> ;

<http://www.eswc2006.org/technologies/ontology: to>

<http://www.eswc2006.org/technologies/ontology: REQ016 - Add Users> .

<http://www.eswc2006.org/technologies/ontology: Containment>

a owl:Class ;

rdfs:subClassOf <http://www.eswc2006.org/technologies/ontology: Concept> .

<http://www.eswc2006.org/technologies/ontology: RectangleClass>

a owl:Class .

<http://www.eswc2006.org/technologies/ontology: from>

a owl:ObjectProperty ;

rdfs:domain <http://www.eswc2006.org/technologies/ontology: RectangleClass> ;

rdfs:range <http://www.eswc2006.org/technologies/ontology: RectangleClass> .

<http://www.eswc2006.org/technologies/ontology: fromStoreUserDetailsToRemoteUser>

a <http://www.eswc2006.org/technologies/ontology: Containment> ;

<http://www.eswc2006.org/technologies/ontology: from>

<http://www.eswc2006.org/technologies/ontology: REQ025 - Store User Details> ;

<http://www.eswc2006.org/technologies/ontology: to>

<http://www.eswc2006.org/technologies/ontology: REQ017 - Remote User> .

<http://www.eswc2006.org/technologies/ontology: fromAddUsersToManageUserAccount>

a <http://www.eswc2006.org/technologies/ontology: Containment> ;

<http://www.eswc2006.org/technologies/ontology: from>

<http://www.eswc2006.org/technologies/ontology: REQ016 - Add Users> ;

<http://www.eswc2006.org/technologies/ontology: to>

<http://www.eswc2006.org/technologies/ontology: REQ011 - Manage User Accounts> .

<http://www.eswc2006.org/technologies/ontology: REQ024 - Secure Access>

a <http://www.eswc2006.org/technologies/ontology: Yellow Rectangle> .

<http://www.eswc2006.org/technologies/ontology: REQ025 - Store User Details>

a <http://www.eswc2006.org/technologies/ontology: Green Rectangle> .

<http://www.eswc2006.org/technologies/ontology: REQ016 - Add Users>

a <http://www.eswc2006.org/technologies/ontology: Green Rectangle> .

<http://www.eswc2006.org/technologies/ontology: to>

a owl:ObjectProperty ;

rdfs:domain <http://www.eswc2006.org/technologies/ontology: RectangleClass> ;

rdfs:range <http://www.eswc2006.org/technologies/ontology: RectangleClass> .

<http://www.eswc2006.org/technologies/ontology: fromStoreUserDetailsToReportOnUserAccount>

a <http://www.eswc2006.org/technologies/ontology: Containment> ;

<http://www.eswc2006.org/technologies/ontology: from>

<http://www.eswc2006.org/technologies/ontology: REQ025 - Store User Details> ;

<http://www.eswc2006.org/technologies/ontology: to>

<http://www.eswc2006.org/technologies/ontology: REQ018 - Report On User Account> .

<http://www.eswc2006.org/technologies/ontology: Green Rectangle>

a owl:Class ;

rdfs:subClassOf <http://www.eswc2006.org/technologies/ontology: RectangleClass> .

<http://www.eswc2006.org/technologies/ontology: fromReportOnUserAccountToManageUserAccount>

a <http://www.eswc2006.org/technologies/ontology: Containment> ;

<http://www.eswc2006.org/technologies/ontology: from>

<http://www.eswc2006.org/technologies/ontology: REQ018 - Report On User Account> ;

<http://www.eswc2006.org/technologies/ontology: to>

<http://www.eswc2006.org/technologies/ontology: REQ011 - Manage User Accounts> .

<http://www.eswc2006.org/technologies/ontology: REQ011 - Manage User Accounts>

a <http://www.eswc2006.org/technologies/ontology: Green Rectangle> .

<http://www.eswc2006.org/technologies/ontology: REQ018 - Report On User Account>

a <http://www.eswc2006.org/technologies/ontology: Green Rectangle> .

<http://www.eswc2006.org/technologies/ontology: fromRemoteUserToManageUserAccount>

a <http://www.eswc2006.org/technologies/ontology: Containment> ;

<http://www.eswc2006.org/technologies/ontology: from>

<http://www.eswc2006.org/technologies/ontology: REQ017 - Remote User> ;

<http://www.eswc2006.org/technologies/ontology: to>

<http://www.eswc2006.org/technologies/ontology: REQ011 - Manage User Accounts> .

<http://www.eswc2006.org/technologies/ontology: Yellow Rectangle>

a owl:Class ;

rdfs:subClassOf <http://www.eswc2006.org/technologies/ontology: RectangleClass> .

<http://www.eswc2006.org/technologies/ontology: fromSecureAccessToManageUserAccount>

a <http://www.eswc2006.org/technologies/ontology: Containment> ;

<http://www.eswc2006.org/technologies/ontology: from>

<http://www.eswc2006.org/technologies/ontology: REQ024 - Secure Access> ;

<http://www.eswc2006.org/technologies/ontology: to>

<http://www.eswc2006.org/technologies/ontology: REQ011 - Manage User Accounts>.