To-Do List Web Application

By Nikolaos Papadopoulos

Approach to the problem

First approach to the problem was to identify what tables do I need, how many tables and the rows that will populate the tables. The next step was to create an ERD Diagram which was reflective to the project specifications.

Moving on to Jira and to the sprint plan where user stories were created that would be reflected to the project specifications.

I was initially making mock designs with a pencil and paper, just to lay out some ideas.
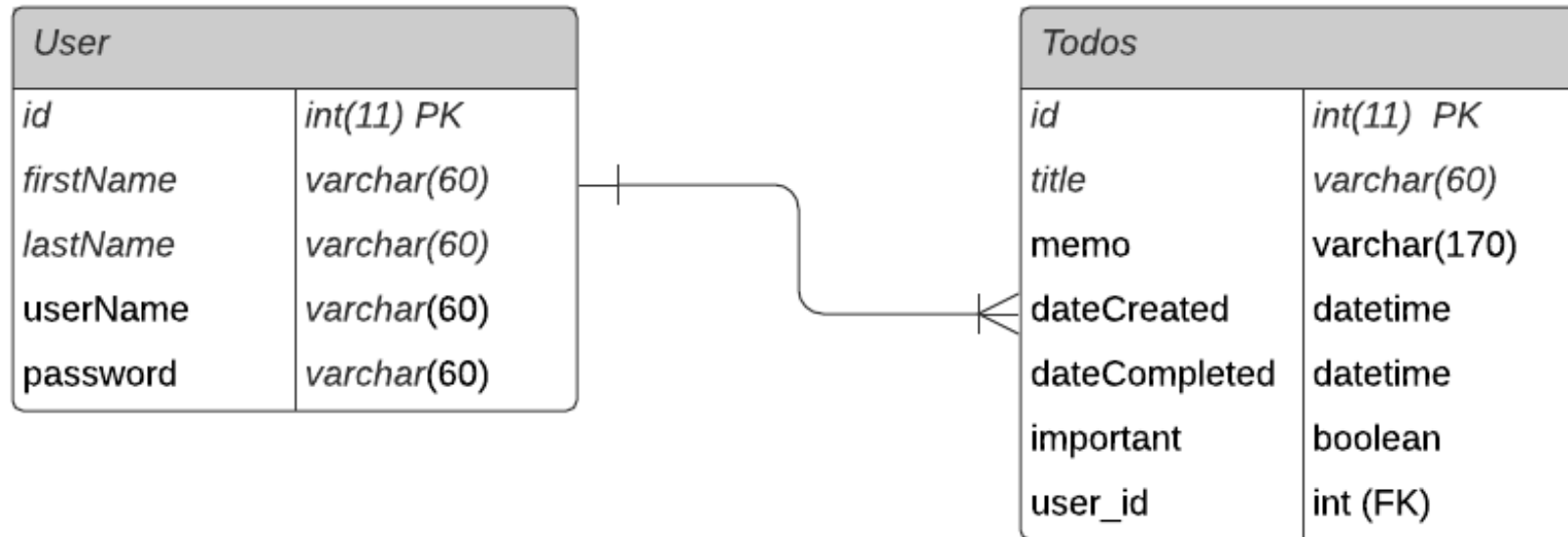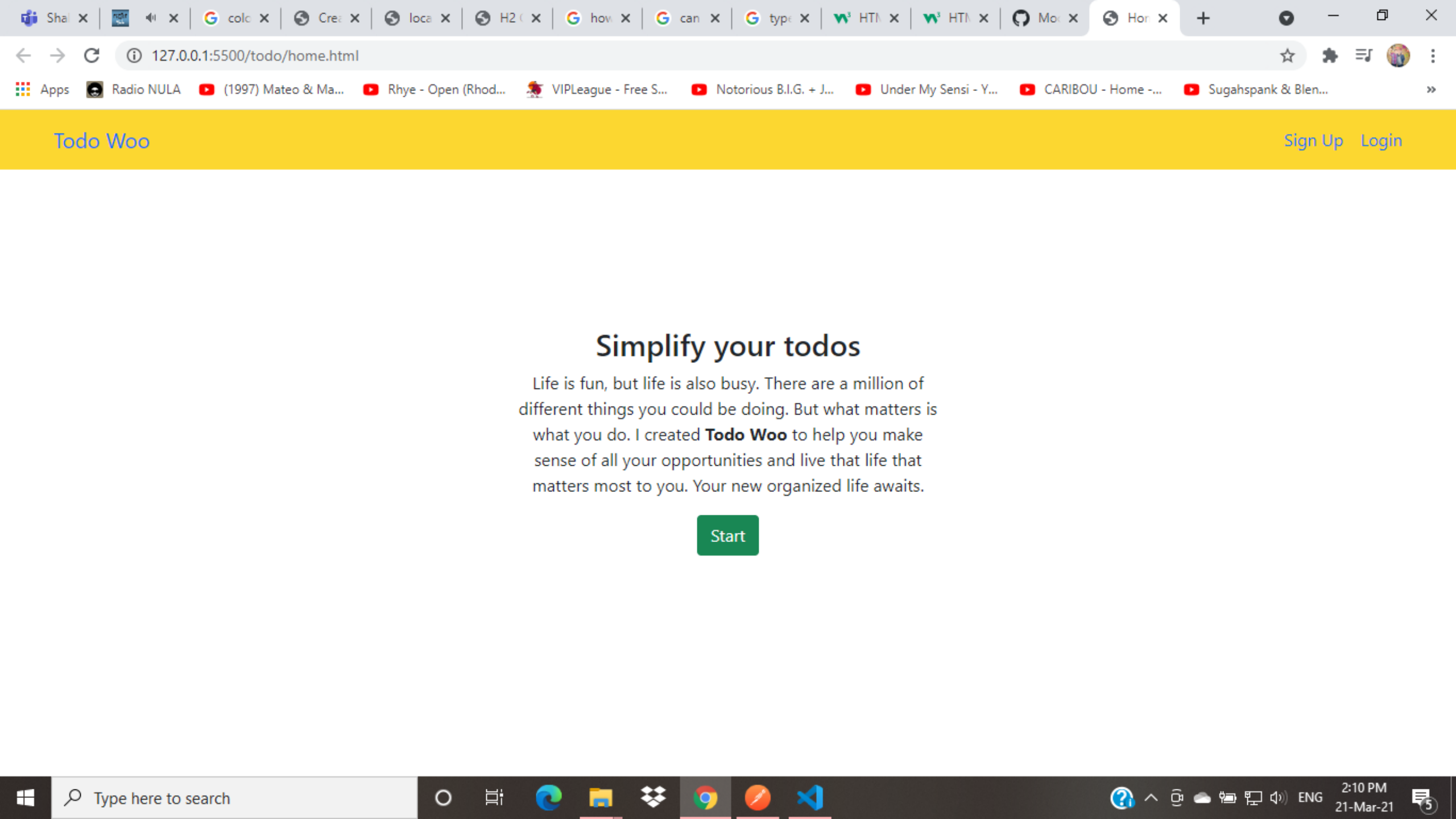
Consultancy Journey

- Learning Java and Eclipse
- Jira
- Working with SpringBoot
- Learning HTML, CSS and JavaScript
- Unit Testing (JUnit)
- Integration Testing (Mockito)
- User-acceptance Testing (Selenium)
- Static Analysis (SonarQube)

Risk Severity Matrix

	Minimal	**Minor**	**Moderate**	**Major**	**Severe**
Guaranteed	5	10	15	20	25
Expected	Using new Software	8	12	16	20
Likely	3	Internet Connection	9	12	15
Possible	Procrastination	4	System Freezing	Damage to computer	10
Unlikely	1	2	Illness	4	Hacking

ERD Diagram

User	
id	int(11) PK
firstName	varchar(60)
lastName	varchar(60)
userName	varchar(60)
password	varchar(60)

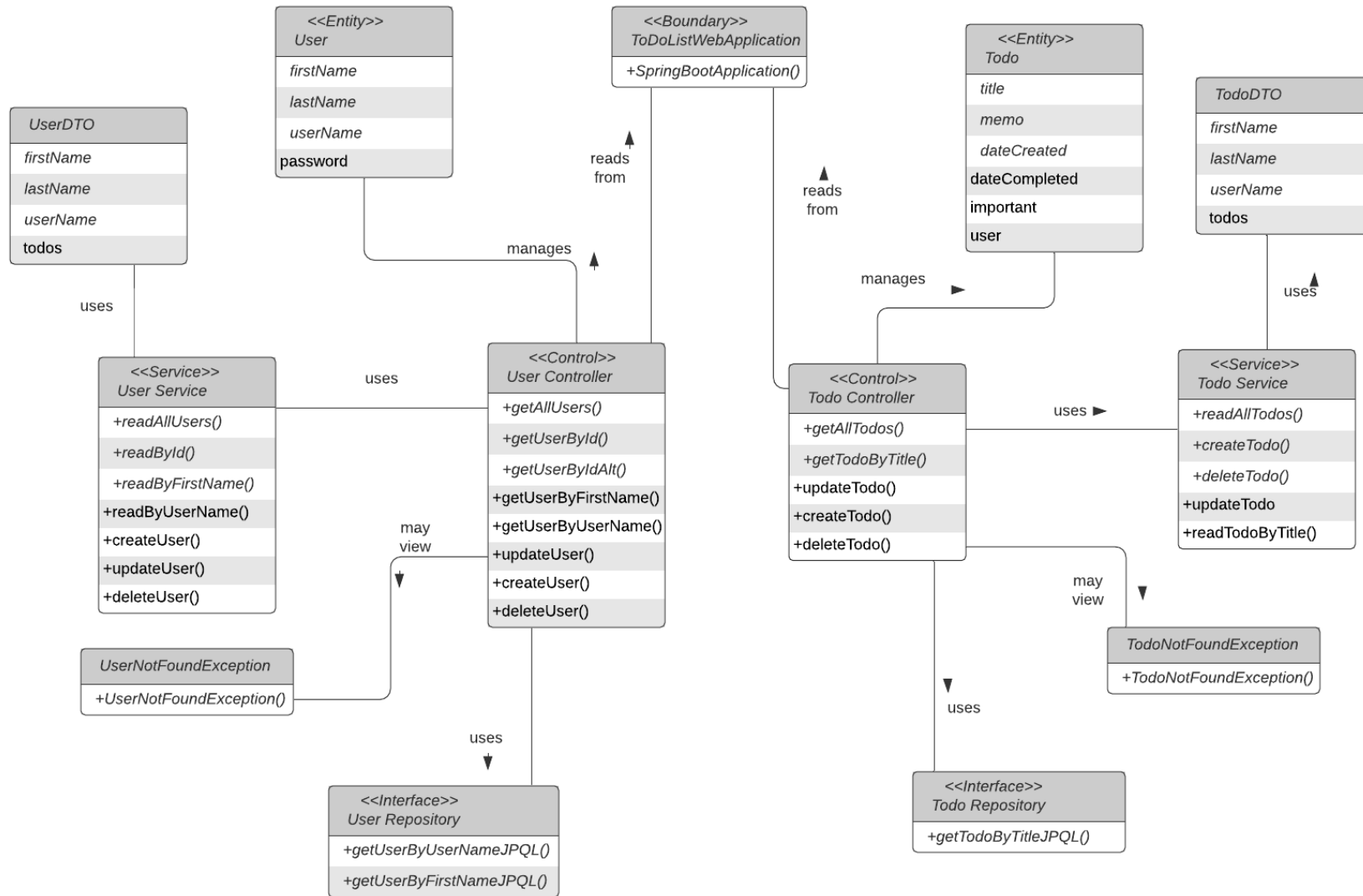| Todos	
id	int(11) PK
title	varchar(60)
memo	varchar(170)
dateCreated	datetime
dateCompleted	datetime
important	boolean
user_id	int (FK)

Simplify your todos

Life is fun, but life is also busy. There are a million of
different things you could be doing. But what matters is
what you do. I created **Todo Woo** to help you make
sense of all your opportunities and live that life that
matters most to you. Your new organized life awaits.

Start

UserDTO
- firstName
- lastName
- userName
- todos

<<Entity>>
User
- firstName
- lastName
- userName
- password

<<Boundary>>
ToDoListWebApplication
- +SpringBootApplication()

<<Entity>>
Todo
- title
- memo
- dateCreated
- dateCompleted
- important
- user

TodoDTO
- firstName
- lastName
- userName
- todos

<<Service>>
User Service
- +readAllUsers()
- +readById()
- +readByFirstName()
- +readByUserName()
- +createUser()
- +updateUser()
- +deleteUser()

<<Control>>
User Controller
- +getAllUsers()
- +getUserById()
- +getUserByIdAlt()
- +getUserByFirstName()
- +getUserByUserName()
- +updateUser()
- +createUser()
- +deleteUser()

<<Control>>
Todo Controller
- +getAllTodos()
- +getTodoByTitle()
- +updateTodo()
- +createTodo()
- +deleteTodo()

<<Service>>
Todo Service
- +readAllTodos()
- +createTodo()
- +deleteTodo()
- +updateTodo
- +readTodoByTitle()

UserNotFoundException
- +UserNotFoundException()

TodoNotFoundException
- +TodoNotFoundException()

<<Interface>>
User Repository
- +getUserByUserNameJPQL()
- +getUserByFirstNameJPQL()

<<Interface>>
Todo Repository
- +getTodoByTitleJPQL()

Relationship labels: uses, manages, reads from, may view

127.0.0.1:5500/final-todo-proejct/home.html

Todo Woo

Features   About   Support

Sign Up   Login

Simplify your todos

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Start

Type here to search

File   Edit   Source   Refactor   Navigate   Search   Project   Run   Window   Help

Project Explorer   JUnit ✕

Finished after 32.071 seconds

Runs: 93/93   Errors: 6   Failures: 7

readAllUsersTest() (0.582 s)
updateUserTest() (0.063 s)
createUserTest() (0.054 s)
deleteUserTest() (0.111 s)
> TodoServiceIntegrationTest [Runner: JUnit 5] (0.194 s)
> TodoServiceUnitTest [Runner: JUnit 5] (0.301 s)
∨ UserServiceUnitTest [Runner: JUnit 5] (0.118 s)
    readByIdTest() (0.093 s)
    readAllUsersTest() (0.003 s)
    updateUserTest() (0.003 s)
    createUserTest() (0.007 s)
    deleteUserTest() (0.012 s)
∨ TodoTest [Runner: JUnit 5] (0.506 s)
    getTitleTest() (0.000 s)

Failure Trace

org.modelmapper.MappingException: ModelMapper mapping

1) Converter org.modelmapper.internal.converter.MergingColl

1 error
at org.modelmapper.internal.Errors.throwMappingExceptionIf
at org.modelmapper.internal.MappingEngineImpl.map(Mappi
at org.modelmapper.ModelMapper.mapInternal(ModelMappe
at org.modelmapper.ModelMapper.map(ModelMapper.java:4
at com.qa.mappers.UserMapper.mapToDTO(UserMapper.java:2
at java.base/java.util.stream.ReferencePipeline$3$1.accept(Ref

UserController.java   UserService.java ✕

```
34
35⊖      public List<UserDTO> readAllUsers() {
36          List<User> users = userRepository.findAll();
37          List<UserDTO> userDTOs = new ArrayList<UserDTO>();
38
39          //  users.forEach(user -> userDTOs.add(userMapper.mapToDTO(user)));
40          userDTOs = users.stream().map(userMapper::mapToDTO).collect(Collectors.toList());
41
42          return userDTOs;
43      }
44
45⊖      public UserDTO createUser(User user) {
46          User newUser = userRepository.save(user);
```

Console   Coverage ✕   Terminal

Element	Coverage	Covered Instructions	Missed Instructions	Total Instructions
∨ To-Do-List-Web-Application	88.8 %	3,379	427	3,806
> src/main/java	76.0 %	1,024	323	1,347
> src/test/java	95.8 %	2,355	104	2,459

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ENG   2:19 PM   21-Mar-21

File　Edit　Source　Refactor　Navigate　Search　Project　Run　Window　Help

Project Explorer　JUnit ✕

Finished after 33.122 seconds

Runs: 92/92　Errors: 7　Failures: 5

- readByIdTest() (0.654 s)
- readAllUsersTest() (0.130 s)
- updateUserTest() (0.046 s)
- createUserTest() (0.052 s)
- deleteUserTest() (0.091 s)
- TodoServiceIntegrationTest [Runner: JU
- TodoServiceUnitTest [Runner: JUnit 5] (
- UserServiceUnitTest [Runner: JUnit 5] (
  - readByIdTest() (0.123 s)
  - readAllUsersTest() (0.005 s)
  - updateUserTest() (0.005 s)
  - createUserTest() (0.005 s)
  - deleteUserTest() (0.008 s)

Failure Trace

java.lang.NullPointerException: Cannot invok
at com.qa.service.UserServiceIntegrationTest
at java.base/java.util.ArrayList.forEach(Arrayl
at java.base/java.util.ArrayList.forEach(Arrayl

UserController.java　UserService.java　TodoServiceIntegrationTest.java　Todo.java ✕

```
98 //        if (this == obj)
```

Console　Coverage ✕　Terminal

To-Do-List-Web-Application (Mar 21, 2021 3:16:19 PM)

Element	Coverage	Covered Instructions	Missed Instructions	Total Instructions
To-Do-List-Web-Application	94.7 %	3,295	184	3,479
src/test/java	95.4 %	2,351	113	2,464
src/main/java	93.0 %	944	71	1,015
com.qa	15.2 %	5	28	33
com.qa.mappers	65.0 %	26	14	40
com.qa.service	94.6 %	229	13	242
com.qa.controller	93.8 %	137	9	146
com.qa.exceptions	70.8 %	17	7	24
com.qa.configuration	100.0 %	14	0	14
com.qa.dto	100.0 %	376	0	376
com.qa.model	100.0 %	140	0	140

Type here to search

ENG
3:17 PM
21-Mar-21

File   Edit   Source   Refactor   Navigate   Search   Project   Run   Window   Help

Project Explorer ✕   JUnit

- base-demo
- Boom3
- demo_example
- Digit2
- Febr14
- first-maven-project
- for_loops
- GetSet
- > GoogleDemo (in Automation_Exampl
- Idraw
- IMS-Starter [IMS-Starter master]
- > JunitVendorMachine [JunitVendorMac
- multi-app
- PhoneBook [boot] [devtools] [PhoneBo
- > SPRING-21JANSDET2 [boot] [devtools
- Streams
- Task-One
- To-Do-List-Web-Application [boot] [dev
- TodoProject
- Training IMS

NewTodo.java ✕   CreateUser.java

```java
16  public class NewTodo {
17      public static final String URL = "http://127.0.0.1:5500/final-todo-proejct/createtodo.html";
18
19      private static WebDriver driver;
20
21      @BeforeClass
22      public static void init() {
23          System.setProperty("webdriver.chrome.driver", "src/test/resources/drivers/chromedriver.exe");
24          ChromeOptions cOptions = new ChromeOptions();
25          cOptions.setHeadless(false);
26
27          cOptions.setCapability("profile.default_content_setting_values.cookies", 2);
28          cOptions.setCapability("network.cookie.cookieBehavior", 2);
29          cOptions.setCapability("profile.block_third_party_cookies", true);
30          driver = new ChromeDriver(cOptions);
31
32      }
33
34      @Before
35      public void setup() {
36          driver.manage().timeouts().pageLoadTimeout(10, TimeUnit.SECONDS);
37          driver.get(NewTodo.URL);
38      }
39
40      @AfterClass
41      public static void tearDown() {
42          driver.quit();
43      }
44
45      @Test
46      public void test() throws InterruptedException {
47          System.out.print(driver.getTitle());
48          driver.manage().window().maximize();
49
```

Terminal ✕   Coverage   Console

To-Do-List-Web-Application (LAPTOP-60UB6JO9) (1) ✕

[INFO] Analysis report compressed in 597ms, zip size=100 KB

Connected - Encoding: UTF-8

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3:10 AM
22-Mar-21

localhost:9000/dashboard?id=com.example%3ATo-Do-List-Web-Application

Apps | Radio NULA | (1997) Mateo & Ma... | Rhye - Open (Rhod... | VIPLeague - Free S... | Notorious B.I.G. + J... | Under My Sensi - Y... | CARIBOU - Home -... | Sugahspank & Blen...

sonarqube   **Projects**   **Issues**   **Rules**   **Quality Profiles**   **Quality Gates**   **Administration**   ❓   🔍 Search for projects...   A

📁 **Todo Project** ☆   ⑂ master ⊕   March 22, 2021, 3:04 AM   Version 0.0.1-SNAPSHOT 🏠

Overview   Issues   Security Hotspots   Measures   Code   Activity   Project Settings ▾   ☰ Project Information

D Reliability Rating on New Code is worse than A

D Security Rating on New Code is worse than A

0.0% Coverage on New Code is less than 80.0%

0.0% Security Hotspots Reviewed on New Code is less than 100%

2 🔒 New Vulnerabilities   Security **D**

1 🛡 New Security Hotspots ❓   ⭕ 0.0% Reviewed   Security Review **E**

2h 38min Added Debt   **59** 😖 New Code Smells   Maintainability **A**

⭕ **0.0%** Coverage on 81 New Lines to cover

⭕ **0.0%** Duplications on 853 New Lines

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Conclusion & room for improvement

- Working on Jira and user stories
- Feature branch model
- Smart commits
- Selenium Testing
- Integration Testing

Questions

Any Questions?