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| Assignment 1 | |
| Course | |
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| Project name | Online Knowledge Testing System |

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| 1. Short project description (Business needs and system features) |
| The Internet age changed the way we learn and test our knowledge. The ***Online Knowledge Testing System (OKTS)*** provides ability for instructors to define tests, and for students to test their knowledge and abilities. In addition to that it allows users to register, and administrators to manage them. The system willbe developed as a *Single Page Application (SPA)* using ***React.js*** as front-end, and ***Node.js + hapi*** as backend technologies.  The main user roles (actors in UML) are:  • *Anonymous User* – can only view the information pages and try few sample tests without saving test results.  • *Student* (extends *Registered User*) – can choose a *Test* to complete – *Test Results* are saved automatically on test completion.  • *Instructor* (extends *Registered User*) – can create *Tests* and see the *Test Results*.  • *Administrator* (extends *Registered User*) – can manage (create, edit user data and delete) all *Registered Users*, as well as *Tests* and *Test Results*. |

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| 1. Main Use Cases / Scenarios | | |
| **Use case name** | **Brief Descriptions** | **Actors Involved** |
| * 1. **Browse information and try sample tests** | The *User* can browse the information views (Home, Tests, About) in OKTS SPA, and can choose to try sample tests using the *Complete Test UC* . | All users |
| * 1. **Register** | *Anonymous User* can register in the system by providing a valid e-mail address, first and last name, and choosing password. By default all new registered users have *Student* role.  *Administrator* can register new by entering *User Data* and choosing a Role (*Student, Instructor*, or *Administrator*). | *Anonymous User, Administrator* |
| * 1. **Change User Data** | *Registered User* can view and edit her personal *User Data*.  *Administrator* can view and edit *User Data* of all *Users* and assign them *Roles*: *Student, Instructor*, or *Administrator*. | *Registered User, Administrator* |
| * 1. **Manage Users** | *Administrator* can browse and filter users based on different criteria: first and last name, email, Role.  *Administrator* can choose a *User* to manage, and can manage the chosen User - edit (using Change User Data UC) or delete.  *Administrator* can create a new user using *Register UC*. | *Administrator* |
| * 1. **Manage Tests** | *Instructor* can browse her *Tests*, add new *Test* using *Add/Edit Test UC*, and delete a *Test*, as well as view the *Student's Test Results* for her own *Tests*.  *Administrator* can browse test of all *Instructors*, edit and delete them. | *Instructor, Administrator* |
| * 1. **Add/Edit Test** | *Instructor* or *Administrator* specifies/edits *Test* meta-data such as: test name, subject, description, and tags. *Instructor* or *Administrator* creates/edits *Questions* using *Create/Edit Question UC,* and can delete chosen *Question. Instructor* or *Administrator* saves the edited *Test.* | *Instructor, Administrator* |
| * 1. **Add/Edit Question** | *Instructor* or *Administrator* specifies/edits *Test's Question Type, Question Content*, and *Answers* providing weights for each answer (default weight is 0). | *Instructor, Administrator* |
| * 1. **Complete Test** | *Student* or *Instructor* browses tests available and can sort and filter them using different test metadata fields. *Student* or *Instructor* chooses a test to complete. *OKTS* presents the *Test Questions* one by one to the *Student* or *Instructor*, who answers them.On *Test* completion the *Test Results* are saved by *OKTS.* | *Student, Instructor* |
| * 1. **Browse Test Results** | *Student* can browse her own completed *Test Results*.  *Instructor* can browse the *Test Results* for *Tests* created by her. | *Student, Instructor* |

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| 1. Main Views (SPA Frontend) | |
| **View name** | **Brief Descriptions** |
| * 1. **Home** | Presents the introductory information for the purpose of the system as well as detailed instructions how to start using it. Prominently offers ability to register. |
| * 1. **Tests** | Presents tests available according to *User's Role* and identity. Offers abilities to create, read, update, delete (CRUD) *Tests*, as well as to complete test and to browse *Test Results* for each test subject to *User's Role* as defined by *UCs*. |
| * 1. **Test Details** | Provides ability to enter/edit *Question* and *Answer* details for individual *Test*. |
| * 1. **Complete Test** | Presents chosen *Test* *Questions* one by one, asking for multiple choice Answers for each Question, and recording those answers. |
| * 1. **Test Results** | Provides ability to browse test results for chosen *Test* competition (by particular *Student*) - overall test result, as well as detailed results for individual questions. |
| * 1. **User Data** | Presents ability to view and edit personal *User Data*, as well as deregister from *OKTS*. |
| * 1. **Users** | Presents ability to manage (CRUD) *Users* and their *User Data* (available for *Administrators* only, as described in UCs). |
| * 1. **About** | Presents information about the *OKTS* project and his owner. |