

Assignment 1	Project Summary
Course	<b>Web Application &amp; Service Development with Spring Framework v5 - 2020</b>

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Project name	Card Management System
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1. Short project description (Business needs and system features)
<p>A Card Management System is always needed in the banking industry. The <b>Untitled card management system (UCMS)</b> provides ability for banks and bank services alike to send card production requests to card production centers, activate and deactivate cards, and authorize transactions. The system will be developed using <b>Spring 5 Application Development Framework</b>. It will implement web-based front-end client using <b>Thymeleaf</b> templates and <b>jQuery</b> or <b>React.js/Vue.js/Angular</b> JavaScript/TypeScript libraries for asynchronous page data updates. Each page will have a distinct URL, and the routing between pages will be done server side using <b>SpringMVC</b>. The backend will be implemented as a <b>REST/JSON API</b> using JSON data serialization. The main user roles (actors in UML) are:</p> <ul style="list-style-type: none"> <li>• <i>Anonymous User</i> – has no access to the system, must be registered by <i>Administrator</i> or log in.</li> <li>• <i>Registered User</i> - user registered by administrator, base abstraction.</li> <li>• <i>Administrator</i> (extends <i>Registered User</i>) – can manage (create, edit user data and delete) all <i>Registered Users</i>.</li> </ul>

- *Card production User*(extends *Registered User*) - can create requests for Producing new cards. Can view list of Production requests.
- *Card Management User*(extend *Registered User*) - can Activate and Deactivate cards. Can view lists of cards.
- *Audit User* (extends *Regular User*) - can View Card production requests and card status changes.
- *Card Production System* - receives card Production Requests and sends confirmation for produced cards.
- *Authorization System* - sends request to CMS for checking cards active status and check pin.

2. Main Use Cases / Scenarios		
Use case name	Brief Descriptions	Actors Involved
<b>2.1. Login</b>	<i>Anonymous User</i> can enter username and password to gain access to the system.	<i>Anonymous User</i>
<b>2.2. Register New User</b>	<i>Administrator User</i> can add new users to the system, giving them username, one time password and a set of permissions	<i>Administrator</i>
<b>2.3. Change User Data</b>	<i>Registered User</i> can change their passwords and request permissions.	<i>Registered User</i>
<b>2.4. Manage Users</b>	<i>Administrator</i> can browse and filter users based on different criteria: first and last name, email, Role.	<i>Administrator</i>

	<p><i>Administrator</i> can choose a <i>User</i> to manage, and can manage the chosen <i>User</i> - edit (using Change User Data UC) or delete.</p> <p><i>Administrator</i> can create a new user using <i>Register UC</i>.</p>	
<b>2.5. Create Production Request</b>	<i>Card Production User</i> can create requests for producing cards, specifying the type of card, the card number (PAN) the pre generated Pin Block, the client name, and the address for delivery of the card.	<i>Card Production User</i>
<b>2.6. Revoke Production Request</b>	<i>Card Production User</i> can revoke requests for producing cards, specifying the reason for deleting.	<i>Card Production User</i>
<b>2.7. Activate card</b>	<i>Card Management User</i> can Activate cards to be used as a payment method.	<i>Card Management User</i>
<b>2.8. Deactivate card</b>	<i>Card Management User</i> can Deactivate cards. Deactivate card can no longer be used as a payment method	<i>Card Management Uses</i>
<b>2.9. Confirm Cards Produced</b>	<i>Card Production System</i> sends confirmation for produced cards.	<i>Card Production System</i>
<b>2.10. Authorize Transaction</b>	<i>Authorization System</i> sends request for checking card active status and check pin, updates the pin try counter if needed	<i>Authorization System</i>
<b>2.11. View Card Production Requests</b>	<i>Administrator, Audit User, Card Production User</i> can view a list of card production requests.	<i>Administrator, Audit User, Card Production User</i>
<b>2.12. Change Pin</b>	<i>Authorization System</i> can send request to change pin providing the new value of the pin.	<i>Authorization System</i>

<b>2.13. View Change card status request</b>	<i>Administrator, Audit User, Card Management User</i> can view a list of card production requests.	<i>Administrator, Audit User, Card Management User</i>
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3. Main Views (Frontend)		
View name	Brief Descriptions	URI
<b>3.1. Home</b>	Presents the introductory information for the purpose of the system as well as detailed instructions on how to start using it. Prominently offers ability to register.	/
<b>3.2. Active Requests</b>	Shows table with all requests. <i>Registered user</i> can browse and filter requests - cancelled, completed, pending requests. Card management user can change status of requests..	/requests
<b>3.3. Request Change History</b>	Audit User can view a history of all changes made to a card or request.	/requests/history
<b>3.4. User Registration</b>	Presents a view allowing the <i>Anonymous Users</i> to send a request for registration to the <i>Admin</i> .	/register
<b>3.5. Login</b>	Presents a login form for the user with a field for username and password.	/login
<b>3.5 Edit user details</b>	Registered user can request a change of permissions.	/settings
<b>3.6. Add request</b>	Form that a <i>Registered user</i> can use to submit a new request for creating, activating or deleting a certain card.	/request-form
<b>3.7. Users</b>	Presents ability to manage (CRUD) Users and their User Data (available for <i>Administrators</i> only, as described in UCs).	/users

<b>3.8. About</b>	Presents information about the project and his owner.	<i>/about</i>
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4. API Resources (Backend)		
View name	Brief Descriptions	URI
<b>4.1. Users</b>	GET <i>User Data</i> for all users, and POST new <i>User Data</i> (Id is auto-filled by CMS and modified entity is returned as result from POST request). Available only for <i>Administrators</i> .	<i>/api/users</i>
<b>4.2. User</b>	GET, PUT, DELETE <i>User Data</i> for <i>User</i> with specified <i>userId</i> , according to restrictions described in UCs.	<i>/api/users/{userId}</i>
<b>4.3. Login</b>	POST <i>User Credentials</i> (e-mail address and password) and receive a valid <i>Security Token</i> to use in subsequent API requests.	<i>/api/login</i>
<b>4.4. Logout</b>	POST a logout request for ending the active session with <i>OKTS</i> , and invalidating the issued <i>Security Token</i> .	<i>/api/logout</i>
<b>4.5. Production request</b>	POST <i>Card production Request</i> filled by card production user with data for the card such as PAN, Pin Block, Name, Expiry Date and Address.	<i>/api/card-prod/request</i>
<b>4.6. Production Revocation</b>	POST Card revocation request to revoke production of previous card production request	<i>/api/card-prod/revoke/{requestId}</i>
<b>4.7. Change Production status</b>	PUT production status, used by card production system	<i>/api/card-prod/status</i>
<b>4.8. Status Update</b>	PUT change active status of card by card id	<i>/api/cards/{pan}/status</i>
<b>4.9. Authorize transaction</b>	GET checks card active status and pin, updates pin try counter if necessary	<i>/api/cards/{pan}/status</i>

<b>4.10. Change Pin</b>	PUT change the current pin of a given card, providing the new pin value in the request body.	<i>/api/cards/{pan}/update-pin</i>
<b>4.11. Card Production Request</b>	GET returns list of all card production requests and revocations by period	<i>/api/reports/requests</i>
<b>4.12. Card Changes</b>	GET returns list of all changes for a card	<i>/api/reports/card/{pan}</i>