CENG453 – SOFTWARE CONSTRUCTION

Term Project Documentation

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1. Introduction

This document is created for the Ceng-453 Software Construction course’s term project that is a card game called “Pişti”. This game includes 4 levels. Main goal of the game is to match the cards in hand with play pile. If a player gain total of 151 points, level will be won by the player. This document contains BackendAPI end points and their usages.

2. Technology

- For the server side of the project, Spring Boot, Maven and MariaDB is used.
- For the authentication, Spring Security is used. Security tokens are created using JWT Token.
- Passwords of the player accounts stored after encoded using BCryptEncoder.
- For API documentation, Swagger is used. Also, Javadoc is used for comment style documentation.
- For testing, Junit4 is used.

3. Backend API

3.1. Player Operations

Operation	**Register player**
Method	POST
End-point	/api/player/register
Functionality	Registers new player
Input	Username, e-mail, password
Output	Response message

Operation	**Login**
Method	POST
End-point	/api/player/login
Functionality	Login player
Input	Username, password

Output	Jwt token

Operation	**Get player**
Method	GET
End-point	/api/player/getPlayer
Functionality	Get player information using username
Input	Username as a request param
Output	Player

Operation	**Get all player**
Method	GET
End-point	/api/player/getAll
Functionality	Retrieve list of all players
Input	-
Output	List of players

Operation	**Update player**
Method	PUT
End-point	/api/player/update

Functionality	Update player’s information
Input	Username, e-mail, password
Output	Response message

Operation	**Delete player**
Method	DELETE
End-point	/api/player/delete
Functionality	Delete a player with given id
Input	Player id as request param
Output	Response message

Operation	**Forget password**
Method	POST
End-point	/api/player/forgetPassword
Functionality	Send a code via e-mail when a player forget password
Input	E-mail of the player
Output	Response message

3.2. Reset Password Operations

Operation	**Change Password**
Method	POST
End-point	/api/resetPassword/changePassword
Functionality	Allows to reset password using verification code sent via e-mail
Input	Username, code, new password as request param
Output	Response message

3.3. SessionRecord Operations

Operation	**Add Session**
Method	POST
End-point	/api/sessionRecord/addSession
Functionality	Creates a new session record at the beginning of the game
Input	Player id
Output	Session record instance

Operation	**Update session**
Method	PUT
End-point	/api/sessionRecord/updateSession

Functionality	Updates the score and date information when levels are passed.
Input	Session record id, new score
Output	Session record instance

Operation	**List leaderboard**
Method	GET
End-point	/api/sessionRecord/listLeaderboard
Functionality	Retrieves all session record dtos as list
Input	-
Output	List of session record dtos

Operation	**List leaderboard monthly**
Method	GET
End-point	/api/sessionRecord/listLeaderboardMonthly
Functionality	Retrieves all session record dtos within a month as list
Input	-
Output	List of session record dtos

Operation	**List leaderboard weekly**

Method	GET
End-point	/api/sessionRecord/listLeaderboardWeekly
Functionality	Retrieves all session record dtos within a week as list
Input	-
Output	List of session record dtos

4. Frontend

4.1.1. Technology

- For GUI of the project, JavaFX and Spring Boot is used.
- For testing Junit and TestFX is used.
- For sending HTTP requests, Unirest is used.
- When user is signed in or logged in, password is not stored anywhere and sent directly to server. Password is encoded using BCryptEncoder and saved.

4.1.2. Design

- There are login, register, forget password, reset password, dashboard, leaderboard, profile and game level pages.
- There are 3 levels that are connected to each other.
- In first level, ai will play so easy.
    - Ai sends a random card from its hand.
    - If one of the players collects 151 or more points, level2 will be loaded.
    - Otherwise, player will lose and navigated through the dashboard.
- In level2, ai will start to make more clever decisions and the game will be harder.
    - If there is a card matching with the card top of the pile, ai will throw that card.
    - If there is no matching card, and if there is a Jack card, ai will throw the jack.
    - Otherwise, ai will throw a random card.
    - If the player collects 151 or more points, level3 will be loaded.
    - Otherwise, player will lose and navigated through the dashboard.
- In level3, unlike others, both player will be able make bluff.
    - The strategy of the ai will be the same as level2.
        - If there is a card matching with the card top of the pile, ai will throw that card.
        - If there is no matching card, and if there is a Jack card, ai will throw the jack.
        - Otherwise, ai will throw a random card.
    - If the player collects 151 or more points, the player will win the game single player part of the game and level4 will be loaded.
    - Otherwise, player will lose and navigated through the dashboard.
- In level4, unlike others, player will play against another player.
    - Player will wait until a match is found.
    - When a match is found, both players will see the opponent's username and game will start in 3 seconds.
    - When a player throws a card, his/her hand will be blocked so that he/she will not able to throw a new card until his/her opponent.
- Player will be able to start a new game.
- If a player could not win a level, dashboard will be loaded, and player will be able to start a new game.