Exam: Age of Kingdoms Role Game

Description:

Welcome to Age of Kingdoms, a role game where you manage and expand your medieval kingdom. Your objective is to grow your kingdom's resources and strategically attack other kingdoms to become the most powerful king.

Game Mechanics:

You start the game with a basic kingdom and initial resources. Age of Kingdoms offers various actions to help grow and protect your kingdom:

Actions:

1. Create Kingdom:

- **Endpoint:** POST /kingdoms   **1.5 POINTS**

Request Body:
```
{

  "gold": integer,

  "citizens": integer,

  "food": integer

}
```

   - **Description:** Creates a new kingdom with initial resources: gold, citizens, and food. Each field must be an integer number from 0 to **60**.

     It is required to store in the kingdom its date of creation.

2. Start Daily Production: **2 POINTS**

- **Endpoint:** POST /kingdoms/{id}

   - **Description:** Starts the production for the day, reducing food by 1 per citizen and increasing gold by 2 per citizen. If there is not enough food for all citizens, the number of citizens is reduced, so each citizen needs one piece of food per day. If a kingdom has no citizens left, it will be automatically deleted.

3. Invest in Food or Citizens: **2 POINTS**

- **Endpoint:**
  - `POST /kingdoms/{id}/invest?type=food`
  - `POST /kingdoms/{id}/invest?type=citizens`

Request Body:

```
{

  "gold": integer

}
```

- - **Description:** Converts gold to food at a rate of 1 gold for 2 food, or converts gold to citizens at a rate of 1 gold for 1 citizen. If there is not enough gold, should throw an exception

4. Get Kingdom Status: **1 POINTS**

- **Endpoint:** `GET /kingdoms/{id}`
  - **Description:** Retrieves the current status of the kingdom, including gold, citizens, food, and date of creation.

5. Richest Kingdom: **1 POINTS**

- **Endpoint:** `GET /kingdoms/richest`
  - **Description:** Retrieves the richest kingdom in the game, including gold, citizens, food, and date of creation.

6. Attack Another Kingdom: **2.5 POINTS**

- **Endpoint:** `POST /kingdoms/{id}/attack/{target_id}`
  - **Description:** Initiates an attack on another kingdom. The kingdom with the higher number of citizens will win. In case of a tie, the defending kingdom will win. The winning kingdom will steal all the gold from the losing kingdom and half of its citizens (rounded down).

Submission:

- Develop this project using Spring (JAVA) and integrate it with H2 using JDBC Client.
- Ensure proper application of the layered architecture pattern, and write all code in English.
- The project must contain your name: **EXAM_AGE_OF_KINGDOMS_YOURNAME**
- Add a README file with your name.
- Submit the project via GIT before 14 June at 14h.
- **IMPORTANT:** The final code must be in the "MASTER" or "MAIN" branch, from where it will be reviewed.

Scoring:

Each endpoint will be tested, and the scoring rubric is as follows:

- **33.3%**: Tests pass
- **33.3%**: API is correctly implemented
- **33.3%**: Correct connection to the database (BBDD)