

GOMOKU

DAW PHASE I – BACKEND

V0.1.0

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TOPICS

- API
 - Features
 - Endpoints
 - Media Types
 - Request and Response example
- Internal backend organization
- Demonstration
- Main design or implementation challenges
- Future improvements

FEATURES

- Allows multiple players to play the [Gomoku](#) game.
- Primarily responsible for:
 - Ensuring that all game rules are followed by the players;
 - Storing all data related to the game and users.

Users	Games	System
Creating a user	Creating a game through matchmaking	Obtain current system information
User authentication	Control length through timeouts	Obtain system version authors
Listing all users by ranking	Able to play multiple variants	
Get statistics from one user	Can give up on game	

ENDPOINTS

Users	Games	System
Create user	Variants	About
Create token	Start	
Logout	Status monitor	
Get by ID	Delete monitor	
Ranking	Get by ID	
Statistics	Play	
Home	Give up	

Details in [API Documentation](#)

MEDIA TYPES

- **Success:** application/json
- **Failure:** application/problem+json

REQUEST AND RESPONSE EXAMPLE

GetById: [↗](#)

Method: GET

Path: `/api/games/{id}` (ID must be UUID).

Request: Header Authorization contains bearer token.

- Failure - Content-Type: "application/problem+json"

Body can describe one error:

```
{
  "type": "https://github.com/isel-leic-daw/2023-daw-leic51d-07/tree/main/docs/api/gameNotFound",
  "title": "Game not found."
}
```

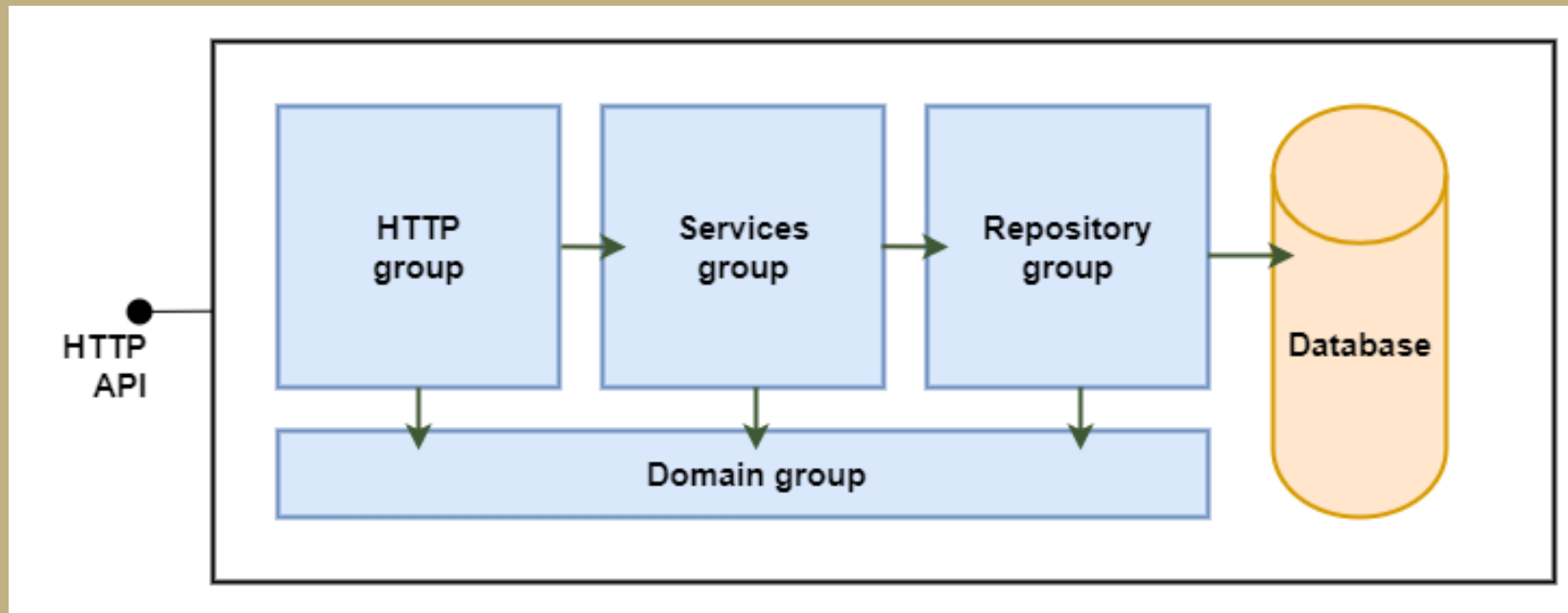
```
{
  "type": "https://github.com/isel-leic-daw/2023-daw-leic51d-07/tree/main/docs/api/playerNotPartOfGame",
  "title": "You are not a player in this game."
}
```

CONT...

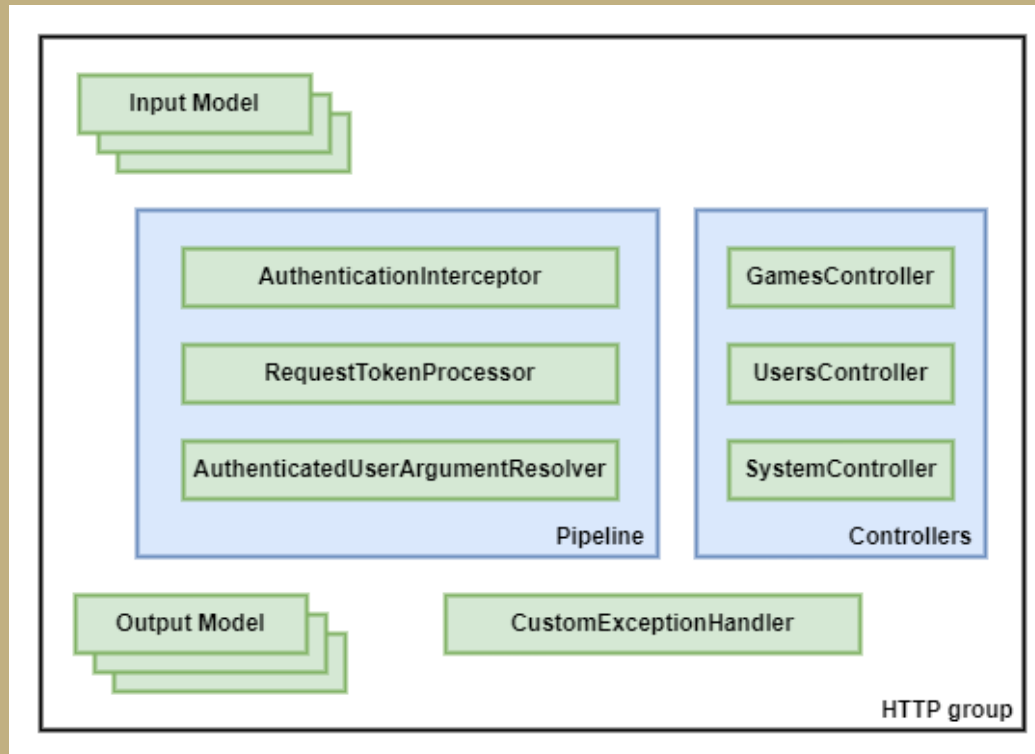
- Success - Content-Type: "application/json"

```
{
  "pieces": [
    {
      "player": String,
      "intersection": {
        "row": Int,
        "column": Int
      }
    },
    ...
  ],
  "gameState": String
}
```

INTERNAL BACKEND ORGANIZATION



HTTP GROUP



Main purpose:

- ❖ Exposing and implementing the HTTP API, through types and functions.

Depends on:

- ❖ [Spring MVC](#) technology to handle HTTP requests.

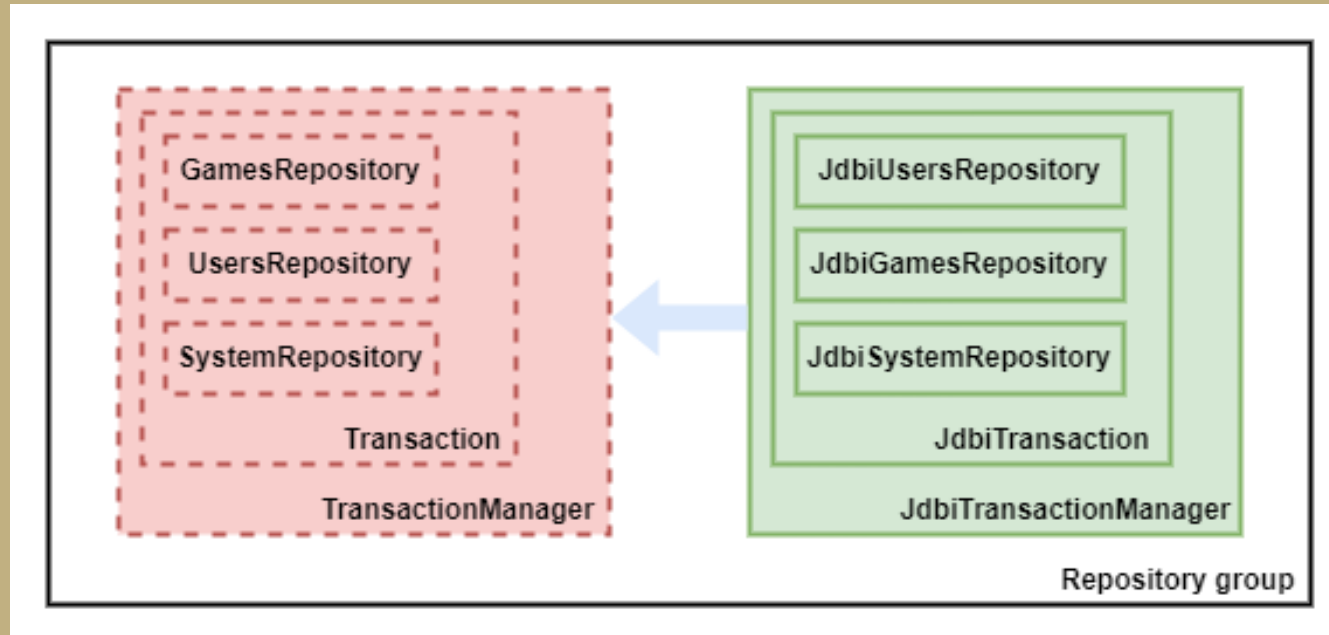
SERVICES GROUP



Main purpose:

- ❖ Provide domain functionalities and operations, through types and functions.

REPOSITORY GROUP



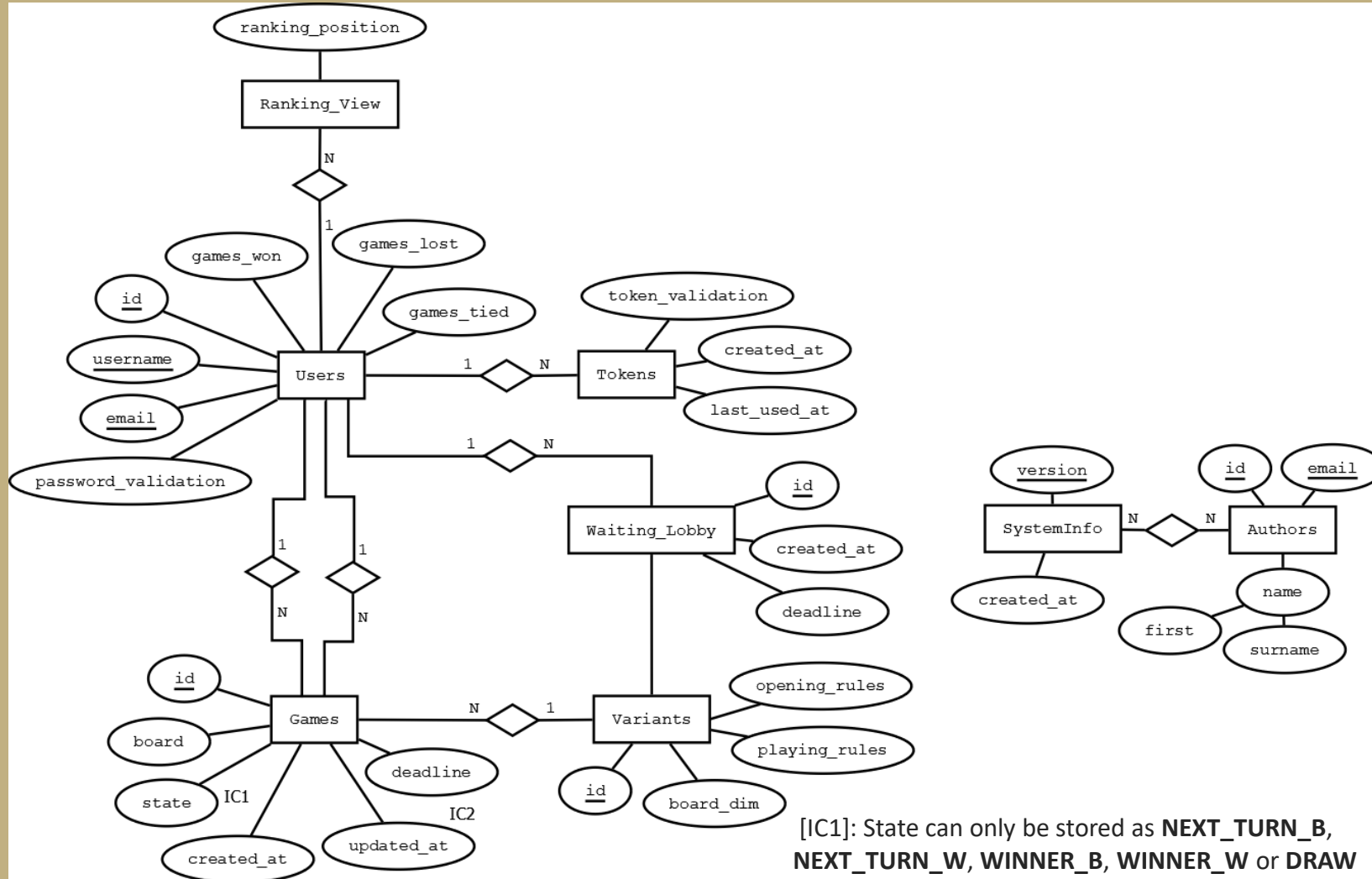
Main purpose:

- ❖ Interact with the RDBMS and its database, through types and functions.

Depends on:

- ❖ JDBI library to interact.

DATABASE



[PostgreSQL](#) is a Relational Data Base Management System (RDBMS) used to store data

DEMONSTRATION

MAIN DESIGN AND IMPLEMENTATION CHALLENGES

- Users ranking performance
- Matchmaking algorithm concurrency

FUTURE IMPROVEMENTS

- Hypermedia
- Waiting Lobby timeout
- More variants



THANK YOU!