

TU VIENNA

SOFTWARE ARCHITECTURE

SWAG - Assignment 3

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1 Use Cases

The following Use Cases were identified and implemented

| | |
|------------------|---|
| Use Case | Create User Account |
| Goal in Context | User can create a account |
| Additional Notes | Starting base is initialized, user gets an e-mail with his generated password |

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|------------------|---|
| Use Case | Delete User Account |
| Goal in Context | User can delete his account |
| Additional Notes | Bases are abandoned and can be taken by other players |

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| Use Case | Login/Logout |
| Goal in Context | User can Login/Logout on/off his account |
| Additional Notes | Game State must be saved correctly until next Login, while the game continues and already taken actions continue |

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| Use Case | Send Ingame Message |
| Goal in Context | User can send ingame messages to other users |

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| Use Case | Receive Ingame Message |
| Goal in Context | User can receive ingame messages from other users |

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| Use Case | Build Base |
| Goal in Context | User can build base on a map |

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|-----------------|-----------------------------------|
| Use Case | Build Building |
| Goal in Context | User can build building on a base |

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|-----------------|---|
| Use Case | Upgrade Building |
| Goal in Context | User can upgrade his existing buildings |

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|-----------------|---|
| Use Case | Navigate Maps |
| Goal in Context | User can navigate through existing maps |

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|-----------------|-----------------------|
| Use Case | Build Troops |
| Goal in Context | User can build troops |

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|-----------------|--|
| Use Case | Form Squad |
| Goal in Context | User can form squads with built troops |

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|------------------|---|
| Use Case | Move Squads |
| Goal in Context | User can move his squads to other squares |
| Additional Notes | Squares occupied by foreign squads will be attacked by moving there, the "stronger" squads win, defeated troops disappear, if only foreign buildings remain on the square, they are attacked and will disappear, remaining resources are assigned to the attacker |

2 Issues and Decisions

| | |
|--------------------|--|
| Issue | The Application must be able to scale according to a unknown player count |
| Decision | Server load is minimized through gui-rendering executed client-side (html-prefetch & JavaScript) |
| Status | Implemented |
| Constraints | None |
| Related Principles | Thick Client |
| Related Artifacts | GUI |

| | |
|--------------------|---|
| Issue | Reliable and fast communication between GUI and Business Logic to minimize overhead and loading times |
| Decision | JSON-Format mesaging between GUI (Client) and Business Logic (Server) |
| Status | Implemented |
| Constraints | None |
| Related Principles | Thick Client |
| Related Artifacts | All GUI-related Components |

| | |
|--------------------|--|
| Issue | The application must be extensible |
| Decision | New modules and Services can easily be implemented in the ex- isiting structure |
| Status | Implemented |
| Constraints | None |
| Related Principles | Extensibility |
| Related Artifacts | All |

2.1 Implementation Details

Application Server: **Glassfish 3.1**

Database: **PostgreSQL 8.4**

Client-Side (Rendering): **AJAX**

The following JavaScript Libraries were used:

- jquery
- requirejs
- jquery.cookie
- jquery.bind
- jquery.ui
- md5

3 Component Diagram

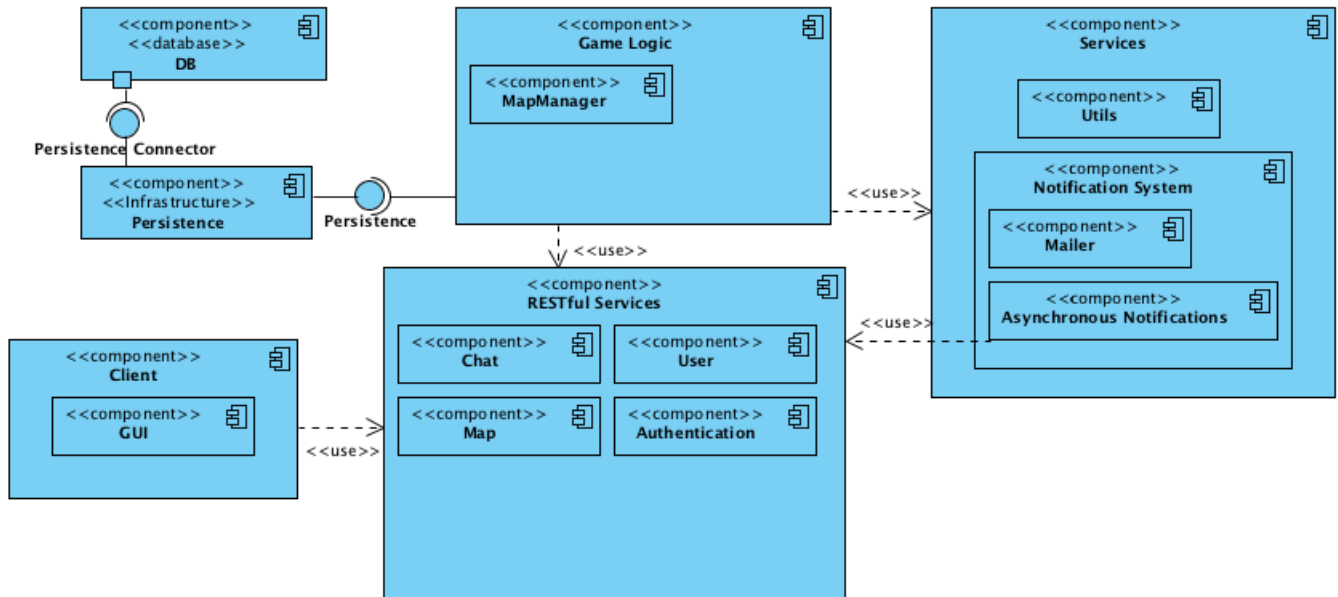


Figure 1: SWAG Component Diagram

4 Database Model

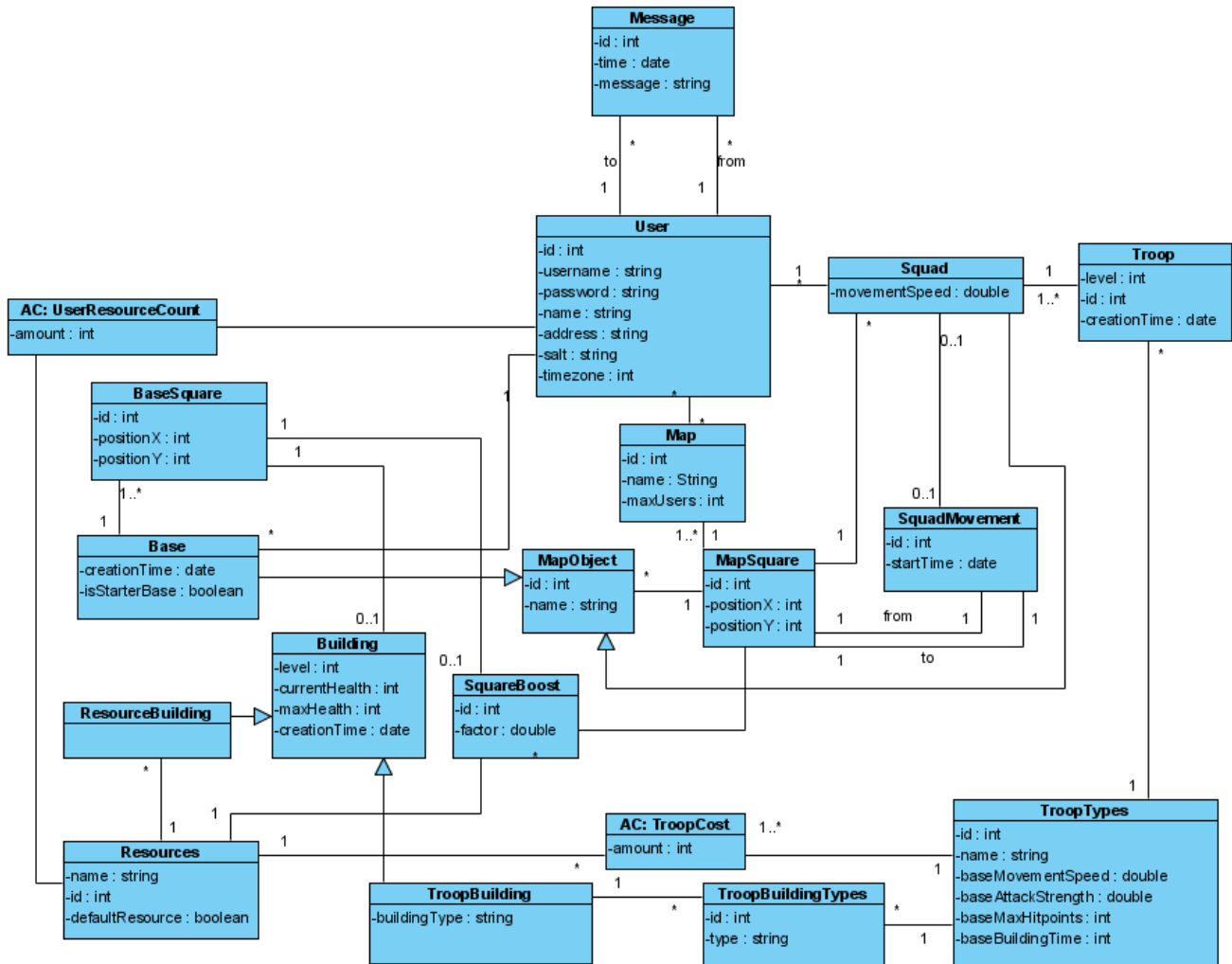


Figure 2: SWAG Database Model