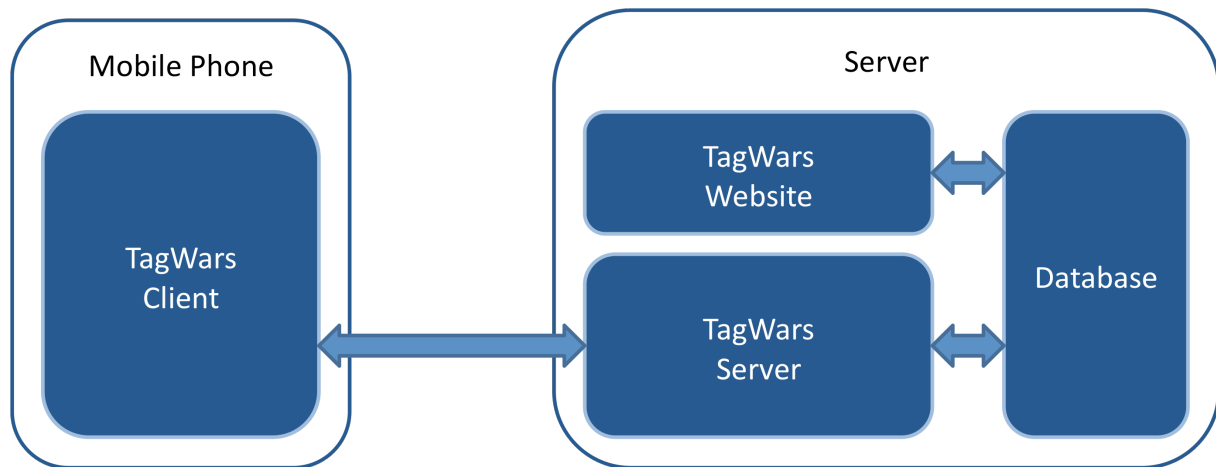


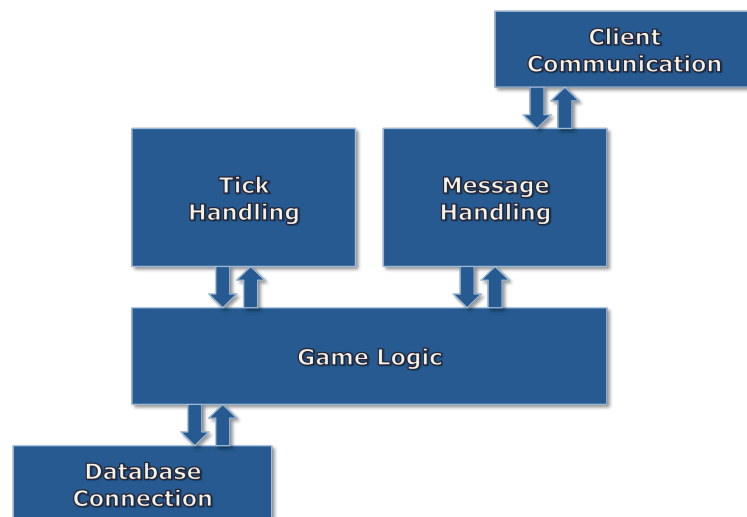
Architecture



Client

The client is a Java ME application and is the main user interface of the game. The player uses the client to build units and to travel through the game world. The game world is linked with the real world with 2D barcode tags which are located in a specific area, e.g. around a university campus, and represent a village in the game. The client makes use of the advanced features of the Nokia N95 8GB as the fighting scenes are rendered in 3D graphics. Furthermore the autofocus camera is used to scan the 2D-barcode tags which enable the player to interact with the strongholds.

Server



The server is a Java application which handles all the user requests and the game play logic. All clients send their actions to the server, e.g. attacking a village. The server responds properly, e.g. whether an attack is allowed or not. The server does not store any information itself but stores all game data in the database.

The main modules are the message handler and the tick handler. The tick handler is a periodically running task which adds the resources and manages the unit or extension production. The message handler parses all incoming messages from the client, invokes the game logic and generates the

proper response. The communication module handles the decoding and encoding of the network traffic and maintains connections to currently active clients.

Website

The Website is used to display high scores, the user documentation and a tutorial but serves also as an administration platform to create new tags or register new users. It was implemented with Java Server Pages.

Database

The database is used to store all necessary information of the game, and holds information for both the website and the server. As database engine MySQL was chosen.

Used Technologies

Server

- Java Runtime Environment 1.6
- Apache Tomcat 5.5.26
- MySQL Database 5.0.51a

Client

- 2D barcode interpreter for QR codes
- JSR 184 Mobile 3D Graphics API for J2ME
- Java ME
- Autofocus camera