



A Photo Oriented Learning and Gaming Platform for Mobile Phones

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Mobile Gaming and Learning

Mobile phones

- ubiquitous
- media capture
- networked

Advantage

Users can interact in their real world context while learning or playing.

Scenario

- teacher prepares a field trip
- objective: to learn about plants in the woods
- he describes tasks using the JaGD editor
- exports the game and makes it available
- pupils download the game to their mobile
- they play the game during the field trip
- upload the images for each task
- web page with community functionality

Example tasks

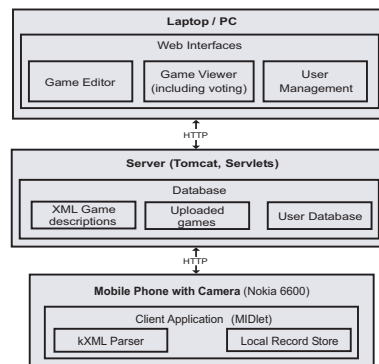
Look for an oak tree, take a picture of the tree and a close-up of a leaf.

Take a picture of something that grows on a plant.



Implementation

JaGD is implemented as a client server system. It includes a backend system and clients that run on mobile phones.



Server

- Java (Servlets) on a Tomcat server
- Includes a game editor, a viewer, user management and voting
- Via HTTP: download of games and upload of pictures

Client (on mobile phone)

- Application implemented as a J2ME MIDlet
- MIDlet downloads the game description
- During the game the user can be off-line
- After finishing all tasks the locally stored pictures are uploaded to the server.
- Game instructions are provided as XML documents by the server. We used kXML as a small pull parser that is designed for use in MIDP environments.
- The built-in camera of the mobile phone is controlled using the Mobile Media API (JSR 135).

Application and Evaluation

Three phases of the system:

Game creation:

- title and short description
- tasks are described

Playing the game:

- tasks are displayed on the phone
- when all tasks are completed or the time is up the user can upload the pictures

Voting after the game:

The pictures are presented on a webpage for other participants to watch and vote.

Evaluation & User Experience

- Expert evaluation to improve the initial usability.
- In a user study game authoring, playing, and voting were evaluated.
- We had five male and two female participants aged between 22 and 38.
- All participants understood the concept and several suggested potential application areas for this platform (e.g. museum guide).

Explore Munich

Description

start date: 23.02.2005
 start time: 14:00
 end date: 25.02.2005
 end time: 23:00
 sharing: Yes
 ordered: Yes

By: [eva](#)
 Game ID: 1
[show images](#)

Instruction

Follow the instructions and find out interesting things about Munich.

Task 1 Points: 5 max. Photos: 1

Find the oldest church of Munich and climb its tower. Enjoy the view and take a photo of it.

Task 2 Points: 5 max. Photos: 15

Have a break at the "Hofbräuhaus" and illustrate your impressions with five photos.

Task 3 Points: 20 max. Photos: 10

Check out the nightlife of Munich and show people having fun - as long as you're able to...



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