einz

Distributed Systems – Project Proposal

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ABSTRACT

This proposal should conclude the initial planning phase. This is where you choose a project, set your goals, clarify your ideas, and find the materials you will need. Concisely state *(a)* System overview *(b)* software and hardware you intend to use in this project, *(c)* expected deliveries of this project.

OUR PART: We choose to create an android application for smartphones which allows to play the game "einz" which is very similar to the popluar UNO cardgame. The goal is to be able to play this game with friends wherever you are, as long as you have a smartphone and access to the Internet. For this purpose we will create an android application which is able to take the role of server and client at the same time. The device of one of the players is used as the server for the game which saves the state of the game and is responsible for synchronization. In this way there is no extra server needed, except for the lookup of the players in case that they are not in the same LAN.

1. INTRODUCTION

Introduction to the problem you are working on, why is it important and what makes it challenging to solve, spell out the distributed systems challenges and how you plan to tackle them. State the technical problem you intend to solve. Indicate how it might be useful. This can be brief; it is just an introduction to the next section.

Use this section as well for background information, particularly if your project is building on previous work. If it is doing that, you need to refer to the work, describe it, and say how you are extending it. What are the new ideas?

Use references such as books [3], papers [5], or specifications [4] whenever available. Web-sites for documentation [2], tutorials, etc., are a special case. In a thesis, you would put them as footnotes. At this stage, however, you will only have a few "real references", so we put the Web-sites into the bibliography. Cite every source you used throughout the project.

OUR PART: TDOD: fÃd'llt jemanden etwas ein das man hier schreiben kÃűnnte? dann bitte schreiben... TODO: jedes tutorial und co als referenz auffÃijhren!

2. SYSTEM OVERVIEW

This is the core of the proposal. It is where you spell out your technical plan and explain the project design. Expected evaluation/demonstration issues would also be addressed in this section. Use helpful figures such as Figure 2 and Figure 3, explain the figures in the text where you reference them.

OUR PART: We propose a modular approach, building first the baseline functionality of the game, followed by further improvements like NAT-punchthrough to allow players from behind different routers to play via the internet with each other or adding more variations and rules. Specifically, we would set up a Lookup-server that is reachable for all clients and thus allow the routers to setup forwarding on ports that we know. The LUS can then inform every client about the other client's IP address and ports, through which they can communicate as if they were within the same subnet, as already implemented in the first phase. The gameserver on one phone will have the option to choose whether to use the LUS or only accept players from within the same LAN.

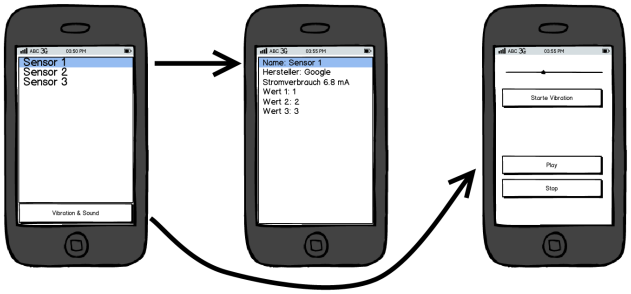

Figure 1: Only include useful figures. Do not simply copy something from a Web.

TODO: kann da jemand noch mehr zur planung schreiben?

TODO: wer macht eine Grafik als Ãijberblich zum aufbau und vielleicht noch eine zum UI?

3. REQUIREMENTS

Describe system setup, components, external libraries, hardware etc.

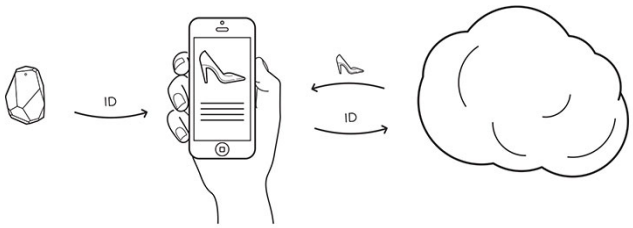

Figure 2: System Overview [1]

OUR PART:

TODO:Josua beschreibst du das "system setup"? TODO:jeder der "external libraries, hardware etc." benutz bitte diejenigen beschreiben

4. WORK PACKAGES

Breakdown the work to subtasks to meet the project requirements. Define and describe these tasks.

- **WP1**: XYZ ...
- **WP2**: Set and Configuring Backend Serve ...
- **WP3**: Integration ...
- **WPx**: ...

Stick to a concise, scientific writing style.

OUR PART: There work will be broken down into the following subtasks: TODO: mÃijsste man den WPs noch andere namen als nummern geben? TODO: jeder beschreibt das WP fÃijr das er verantworlich ist. dÃijrft meine beschreibungen gerne lÃűschen ;)

- **WP1**: Use the smartphone as a Server:
- **WP2**: Server for hole punching:
- **WP3**: Logic of the Clients:
- **WP4**: User Interface:
- **WP5**: Modell (Interface zwischen client-server): TODO: ist das wirklich ein Package?

5. MILESTONES

The milestones section provides a work plan for carrying out the project. This is your schedule for getting the project done. Clearly state how the work packages will be distributed among the team members.

OUR PART: We think it is important to have someone who has an overview of the whole project, therefore we assigned a project manager. For the implementation of the application we made two groups, one for the server side and one for the client side. There is one person responsible for the organisation and delegation of the work to other people for both server and client side. These two people also have to set an API to make the two parts work together in the application.

As project manager and organizing the structure of the project: Josua

Server: Responsable for organisation and also helps implementing: Eric, helps with implementation: Fabian

Client: Responsable for organisation and also helps implementing: Chris, helps with implementation: Clemens

UI and Logo: Chris

First responsable for writing the proposal, then helps implementing where there is need: Silvia

6. REFERENCES

[1] Estimote. `http://estimote.com/`. Accessed on 26 Oct 2015.

[2] Services: Sending Notifications to the User. `http://developer.android.com/guide/components/services.html#Notifications`. Accessed on 29 Aug 2013.

[3] E. Burnette. *Hello, Android: introducing Google's mobile development platform*. Pragmatic Bookshelf, 3 edition, 2010.

[4] R. Fielding, J. Gettys, J. Mogul, H. Frystyk, L. Masinter, P. Leach, and T. Berners-Lee. Hypertext Transfer Protocol – HTTP/1.1. RFC 2616, 1999.

[5] R. T. Fielding. *Architectural Styles and the Design of Network-based Software Architectures*. Phd thesis, UC Irvine, 2000.