EECE 496

Project Proposal for:

Fugitive / Chase Bob

Location-Based Game for Wi-Fi Devices

Name:	Si Colleen Qin
Student Number:	84698018
Supervisor:	Sidney Fels, Rodger Lea
Project Code:	SSF-W06-01
Project Partner:	William Tsui

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Project Proposal

1.0 Project Description

The Fugitive / Chase Bob project is a mobile location aware game that is based on the UBC Wi-Fi network. In this game, a team of 3 players attempts to capture a moving virtual person, Bob, by surrounding and tracking him.

To assist in the development of this game, it is essential to understand the end user requirements in order to evaluate current capabilities of the application. It is equally important, through testing and experimentation, to improve the game design and implement additional features to further enable the examination of social navigation, collaboration strategies, as well as team communication during game play.

2.0 Objectives

The objective of this EECE 496 project is to assist in the development of a collaborative game called the Fugitive / Chase Bob, a location-based game for Wi-Fi devices. This will be achieved through the following set of sub-objectives:

- Characterize the Wi-Fi coverage at UBC and the positioning accuracy that's achieved by the Place Lab software tool
- Test the current application to validate which user requirements have been met
- Evaluate possible methods to improve the game via testing and experimentation
- Prioritize features to implement based on Wi-Fi coverage and application testing
- Implement client side features and server side tools to improve game usability to achieve experimental goals

3.0 Team Organization

The is a collaborative project between the HCT (Human Communication Technologies) lab and the UBC Ubicomp group, consisting of the following EECE and Computer Science professors, graduate students, and undergraduate 496 students:

- Dr. Sidney Fels: HCT lab director and the EECE 496 main supervisor
- Dr. Rodger Lea: Ubicomp group lead, Fugitive / Chase Bob group lead
- Mike Blackstock: Software designer
- Phillip Jeffrey: Usability and test lead
- Meghan Deutscher and Tony Tang: Game usability and testing engineers
- Colleen Qin: EECE 496 student – usability testing and software improvement
- William Tsui: EECE 496 project partner – usability testing and software improvement

4.0 Project Tasks

The tasks for this project are described below. Due to the group-orientated nature of this software project, a number of tasks, such as usability testing and feature validation, will be done with William Tsui, the corresponding EECE 496 project partner. However, there are also several other tasks, including design and implementation of additional features, that will be done independently. These individual tasks will be determined after usability testing. To differentiate individual versus group tasks, the following are marked with "with WT", "individual", etc. for clarification:

- Become familiar with the project via reading Ubicomp group documentation (*individual*)
  - Read Ubicomp group wiki, features document, and game design report
- Understand the end user requirements (*individual reading and from group discussions*)
- Characterize the Wi-Fi coverage at UBC and the positioning accuracy that's achieved by the Place Lab software tool (*with WT*)
  - War-driving: walk around UBC with a tablet PC
  - Document coverage strength and position accuracy data
- Perform field usability testing (*with WT*)
  - Evaluate which user requirements have been met
  - Log software bugs and usability annoyances
- Understand server / client application code to enable future software modification (*individual with help from Mike Blackstock*)

- Assist in the implementation of server tools: improve the replay feature (*with WT*)
    - Add message logging
    - Add log parsing of messages, graphic display of messages in replay tool
- Brainstorm possible improvements to the game using test / experimentation data (*individual*)
- Determine additional features to implement based on Wi-Fi coverage findings, experiment requirements and usability testing (*with group discussion*)
    - Depending on how unreliable the Wi-Fi network is, decide whether to try to improve positioning accuracy with more war-walking or add positioning accuracy feedback into UI.
- Implement additional client side features and server side tools for better usability (*individual*)
    - Features will be determined after testing results are evaluated
    - Ensure connectivity and positioning accuracy are "good enough" in the playing field
    - Place "Bob" appropriately before and after he is found in the field
    - Ensure the game is easy enough to use through UI improvements
- Develop a user manual that teaches users how to play the game (*with WT*)
- EECE 496 project deliverables: write progress report, final report (*individual*)
- Develop a website to log work performed and project data (*individual*)

5.0 Gantt Chart

The following Gantt chart describes how the tasks will be scheduled in the 12-week timeline.

ID	Task Name	Start	Finish
1	Project & team familiarization	Mon 1/16/06	Sat 1/21/06
2	Understand end user requirements	Wed 1/18/06	Sun 1/22/06
3	Characterize Wi-Fi coverage & accuracy	Mon 1/23/06	Sat 2/4/06
4	Field usability testing	Mon 1/23/06	Sat 2/4/06
5	Understand software implementation	Mon 1/23/06	Sat 2/4/06
6	Implement server tool: replay messages	Sun 1/29/06	Sat 2/18/06
7	Brainstorm/evaluate software improvements	Sun 2/5/06	Sat 2/11/06
8	Determine feature to add based on feedback	Sun 2/12/06	Sat 2/18/06
9	Implement additional features	Sat 2/18/06	Sat 4/1/06
10	Develop a user manual	Mon 1/16/06	Sat 1/28/06
11	EECE 496 Interim Report	Fri 2/17/06	Thu 2/23/06
12	EECE 496 Final Report	Sun 3/26/06	Fri 4/7/06
13	Develop web log to track work	Mon 1/16/06	Fri 4/7/06