CS557 CYBER-PHYSICAL SYSTEMS

NETWORKING/ALGORITHMS

PROJECT PROPOSAL

Water Alert and Tracking System

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INTRODUCTION

Background
Wearable devices are clothing and accessories incorporating computer and advanced electronic technologies (smartphones). The designs often incorporate practical functions and features, but may also have a purely critical or aesthetic agenda. [1]

Launched in November 2011, UP by Jawbone is an activity tracker, the company's first non-audio product. It consists of a flexible rubber-coated wristband and accompanying iPhone and Android app. UP allows users to track their sleep, eating habits, and daily activity including steps taken and calories burned. The wristband is water-resistant and designed to be worn 24/7, with a rechargeable battery that lasts for up to 10 days at a time. The wristband also features a vibration motor that can be programmed as an alarm to wake users in the best phase of their natural sleep cycle, or act as a reminder when users have been sedentary too long. [2]

Motivation
Drink better, feel better. Th human body needs enough water to maintain hydrate. Also accelerating metabolism lets people get fit and help to lose weight. We design this water alert and tracking system to assist people to drink water regularly and nurture the good habit and gathering information to know themselves better.

Project Goals
This project aims to build a water alert and tracking system using a third party device, Jawbone UP. The following are the goals:

1. Using the Idle Alert system in the UP to create a Water Alert to allow user to set reminders to make sure you're staying healthy with ample water in the body and promote metabolism throughout the day. Customize the Water Alert from the app in the smartphone and the wristband will vibrate to let the user know when it's time to get some water. [3]

2. Using the advanced sensors in the UP to capture the user's drinking movement and monitor the water quantity the use has. User also can set goals and the app can sync the UP to expand and personalize your experience by giving out the graph of the comparison of the goal and real data.

PROJECT SCHEDULE

The figure below shows the basic Gantt chart which serves as a rough project plan.

ID	Task Name	Start	Finish
1	Gather information & proposal presentation	02/01/2015	02/09/2015
2	Development phase: fulfill basic functions, write documentation prototype, unit test	02/10/2015	03/22/2015
3	Project halfway presentation	03/23/2015	03/30/2015
4	System integration test phase	03/31/2015	04/19/2015
5	Prepare of the final project presentation	04/20/2015	04/27/2015
6	Final term project paper delivery	04/28/2015	05/02/2015

The above figure is only a rough draft. As the project progresses from conception to realization, external factors such as examinations might influence the schedule to a certain extent. However, constant reviews will be done to ensure that the project proceeds as planned and the goals set out in this document are achieved to a satisfactory extent.

REFERENCES

The following list of references represents an intended reading list. Whether or not a reference is ultimately relevant and in what capacity/extent, to this project will be ascertained during the information gathering process, and as such, all listed below may or may not be referenced. Also additional sources may be chanced upon during the research process.

[1] http://en.wikipedia.org/wiki/Wearable_technologys
[2] http://en.wikipedia.org/wiki/Jawbone_(company)
[3] https://jawbone.com/
[4] Bobick, Aaron F., and James W. Davis. "The recognition of human movement using temporal templates." *Pattern Analysis and Machine Intelligence, IEEE Transactions on* 23.3 (2001): 257-267.
[5] Weinland, Daniel, Remi Ronfard, and Edmond Boyer. "Free viewpoint action recognition using motion history volumes." *Computer Vision and Image Understanding* 104.2 (2006): 249-257.