CS 211 course project proposal: Remote access to OpenWRT

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1. DESIGN AND IMPLEMENTATION ROADMAP

This section covers the functional components of the application, which are organized into three major categories.

- **Network configuration** covers common functionalities in configuration tools that often come with commercial APs. These configurations include, but may not be limited to, managing network interfaces, DHCP and DNS settings, static routes, and firewall.
- **System configuration** provides interface to customize the OpenWRT box. Common adminstration functions include: system and user configuration (setting device adminstrator password, creating system backup image and restoring system from backup image, generating user SSH keys, etc), software management (installing and configuring software packages), task management (managing scheduled task and startup task)
- **Status/Statistics visualization** offers a mobile-phone friendly view of the system status (Firmware and kernel version, uptime, current time; CPU and memory usage, currently running processes, and system and kernel log) and network-related status (Interface, route, and firewall status, etc). The visualization component could provide real-time graphs of system load and traffic statistics, for example, traffic per interface and traffic per transport layer connection.

The design and implementation effort will be organized by the three function categories, with approximately two weeks dedicated to each.

2. TIMELINE

A rough timeline for the project is given in table 1

Table 1: Project timeline

Week No.	Task
5, 6 (first half)	Implement status/statistics visualization module
6 (second half), 7	Implement network configuration module
8, 9 (first half)	Implement system configuration module
9 (second half), 10	Prepare final report and presentation