



Halleck-Willard, Inc. Proposal

Fall 2019 CSM Computer Science Field Session

Background

HWI is an engineering firm located in Frederick and specializing in embedded systems with experience in related areas from electronic hardware design to low-level embedded programming. Products that HWI engineers have contributed to include medical devices, industrial automation hardware, and microcontroller development boards. HWI is currently in the process of updating its IT systems and the proposed project (details below) is a part of this effort.

Project description

HWI would like a web application for internal use in tracking specific employee data. Employees of HWI receive, at managers' discretion, extra paid days off from work (called 'Mental Health Days' - MHDs) in addition to the regular paid time off (PTO). We would like a simple web application, intuitive to users in a wide range of ages, to track MHDs, with the following features:

- Users with management access would be able to add/remove/configure other user accounts (eg to grant admin privileges)
- Users with management access would be able to grant MHDs to specific users in the system
 - Ideally the UI would provide the option to configure:
 - How many MHDs to issue, and
 - To which users, where multiple can be selected at once
- Users can elect to view and use their MHDs, and the system records their use and decrements their stored count
- MHDs have associated metadata, editable by admin users, such as: a unique ID string or number, the granting manager, date granted, date used if applicable, automatic expiry date.

Other details:

- We would like to treat this experience as close to real-world software project development as possible; the CSCI370 website does mention that students will develop in "sprints" similar or identical to the Agile process. In addition we would like to use, if not already specified, Kanban-style team coordination apps to simulate Agile-style tracking.
- As part of the goal to approximate a real-world, customer-driven project, we would like to emphasize the "collect requirements" aspect of the course outline given on the CSCI370 [website](#). Our engineers would be available for guidance, and otherwise let the students drive the process of collecting and refining requirements into an end deliverable.

Stretch goals (like-to-have, but not required)

- Integration with our cloud-hosted time-tracking software (Harvest) using their provided API



Desired skill set

We would like students to use this as a chance to choose and develop skills with a tool or tech stack they may not have much experience with. However, we would strongly prefer stable and widely-used technologies such as common web frameworks (HTML5/CSS/JS in e.g. Angular, React, Bootstrap, REST HTTP, etc.) over cutting-edge solutions and tools (e.g. Microsoft's Blazor).

Preferred team size

We expect this work to be more suited to a team of 3 students, up to a maximum of 5.

Internship possibilities

HWI has previously brought on students as interns. Students will have the potential for future paid internships.

Location

Off-site. Students will work remotely from the CSM campus and meet with their HWI contact on a regular basis via teleconferencing.

Contact

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 - Electrical engineer at HWI