University of Texas at Dallas
Department of Computer Science

FILE MANAGEMENT SYSTEM

Project Proposal

CSMC

Spring 2019

1. Introduction

The CSMC website currently handles various transactions, such as: mentor work schedules, student sign up (sessions and reworks), instructor reports, rosters, absences, and so on. Some of these activities have proven to be challenging, because of the lack of supportive software systems, the growth of the CS department and a subsequent increased number of students seeking for help.

The purpose of this document is to describe a new project proposal, the File Management System, which aims to solve (or at least alleviate) some of the issues aforementioned. In addition, the project will give CS and SE students (graduate level) the opportunity to benefit from the experience of working in a real project, from planning to deployment, with “real” clients, needs, and requirements.

2. Project description

This project is divided into two main phases. First, the software engineering team needs to integrate a previously developed software system with the CSMC, using this opportunity to familiarize with the CSMC system. Second, the team needs to develop a prototype for a new software system.

2.1 Phase 1 – Integration

Having to manage mentors manually (or at least semi-automated) was getting harder. Every semester, the number of activities performed by CSMC staff and mentors are increasing. That was the main motivation behind the Mentor Management System (MMS), project developed on Fall 2018.

The software engineering team needs to integrate the MMS with the CSMC system. This will involve several tasks, which include (but are not limited to):

- Integration: using two different code bases, the team needs to combine them
- Bug fixing: new bugs might be created and these must be fixed before proceeding
- New features:
    - Prevent two mentors from having the same preferred name
    - Show mentors how many points they have

The MMS is responsible for handling basic mentor information and mentor related activities. Here is an overview of the five main features that were implemented in the MMS project:

Feature 1: Mentor Profile Page

Mentors use the profile page to insert, edit, and/or delete the following information (may not be limited to this):

- Preferred name: name that will be used by the CSMC (e.g. staff calendar, TV, etc.)
- Expertise level: number from 1 to 5 which indicates their skill level in a subject (for supported courses only)
- Profile picture: to be used by students to identify a mentor on site, for example
- Food preferences: restrictions such as being vegetarian, having allergy, etc.

In addition, admin users have access to the profile page, where he/she will be able to insert, edit and/or delete information for each mentor.

Feature 2: Penalty Score Management

In order to solve some daily problems (such as having the mentor center empty for 10 minutes while rotating shifts), mentors receive negative points for "Negative Behavior" (when they are late, for example) and positive points for "Positive Behavior". Please refer to the table below for an example of point deduction related to shift activities.

Occurrences	Repercussion
Cover shift	+1 point
Tardiness (≤ 5 minutes)	- 0 points*
Tardiness (> 5 minutes, ≤15 minutes)	-1 point
Tardiness (> 15 minutes, ≤ 45 minutes)	-2 points
Tardiness (> 45 minutes)	-3 points
Justified absence (≥ 24 hours)	-3 points
Justified absence (< 24 hours)	-4 points
Unjustified absence	-5 points

*Warning. However, if the tardiness accumulates throughout the week, the respective points should be deducted (does not stack).

After a certain threshold, CSMC will take some actions as follows (subject to change):

Actions	Threshold
Verbal warning	-5 points
Written warning	-10 points
Terminate rehiring process	-15 points

Feature 3: Submit Occurrences

Not all positive and negative behavior are related to shifts, tardiness, and absences. Other kind of behaviors, which may go unnoticed, must be submitted so that the positive ones (e.g. repeated exemplary behavior) and the negative ones (e.g. being unprofessional with a student) change a mentor score accordingly.

Mentors can submit occurrences that take place in the CSMC to the admin (anonymously by default). The form contains:

- Submission Date

- Submitted By
- Type
- Description
- Subject
- Date
- Course of Action (available for admins only)
- Admin Notes (available for admins only)

Feature 4: Admin Summary Screen

Summary screen shows all activities that are new, pending, or closed. This screen has submitted occurrences, absences, tardiness, and so on. Admin have permissions to change and/or edit most of the content in this screen, which includes the following information (may not be limited to this):

1) Overview / Summary

- Point earnings summary

2) Attendance

- Absences, tardiness, covering
- Pending table
- Acknowledge table

3) Behavior

- Good/bad
- Reports from shift leaders, anonymous mentors, admins
- Pending
- Acknowledge

Feature 5: Notifications

MMS notifies mentors of different activities that they are responsible for (e.g. text and email about sessions). This notification component was also implemented in a way that is easily extendible to the rest of the system.

For more information about the MMS, please refer to the MMS User Manual. For more information about the CSMC system, please contact the SMEs.

2.2 Phase 2 – Prototype

Having to upload files to the system is a common activity. For example, a review PowerPoint for a CS1337 session. However, this file needs to be uploaded multiple times for each session, and this is repeated every semester. In addition, every time a file is uploaded, there is a chance someone will commit a mistake (such as uploading the wrong version or forgetting to upload part of the files) or something might go wrong in the system (like wrong file extension, or incompatibility). There is a lack of a file system that will manage such files and consequently help address the issues mentioned.

The software engineering team needs to analyze the File Management System, which includes requirements elicitation, understanding the client needs, and so on. Subsequently, the team will design the system and implement a prototype, concluding phase 2 of the project.