Software Project Management Plan

for

Prom Sign-in project



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Poolesville High School

As of 5/12/2019

Version 1.1.1

|  |  |  |  |
| --- | --- | --- | --- |
| Version release | Major party | Major changes | Date |
| 0.1.0 | Parth Agarwal, Gene Yu | Project overview | 4/11/2019 |
| 0.2.0 | Grey Kienzle | Deliverables | 4/14/2019 |
| 0.3.0 | Grey Kienzle, Gene Yu | Items 1.3-1.4 of section 1 and sections 2-4 | 4/15/2019 |
| 1.0.0 | Grey Kienzle, Gene Yu | Finishing section 4, section 5 | 4/16/2019 |
| 1.1.0 | Gene Yu | Added references, improved sections 1.1, 1.3, 2.2, and 3 | 5/2/2019 |
| 1.1.1 | Grey Kienzle, Gene Yu | Modified sections 2.2, 3.1, 3.2, 3.4, 3.5 | 5/12/2019 |

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# 1. Introduction

1.1 Overview

The purpose of this document is to outline our future plans and scheduling of the Prom Sign In Computer Program being developed by the FCC for the client Mrs. Alexandra Hicks. This document outlines the process of developing the project, states the goals of the project, and provides specific deadlines for crucial tasks. This document also elaborates on managerial roles and processes relating to the project. Section 1 includes general information concerning deliverables, references, and evolution of the SPMP. The following sections include the project organization, managerial processes, technical processes, scheduling, and budget. This project is not related to any other project. Completion of project deliverable drafts and final versions will be treated as milestones. Budget is defined by project deliverable deadlines. Product requirements will be discussed in detail in the software requirements specification.

1.2 Project deliverables

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Deliverable** | **Date** | **In Drive Folder** | **Hard copy** | **In GitHub** |
| Draft SPMP | 4/16 | y | y | x |
| Draft SRS | 5/1 | y | y | x |
| Final SPMP | 5/13 | y | y | y |
| Draft Code | 5/23 | y | y | y |
| Draft Test Plan | 5/28 | y | y | y |
| Final SRS | 5/31 | y | y | y |
| Final Code | 6/5 | y | y | y |
| User documentation (manual) | 6/5 | y | y | y |
| Final Test Plan | 6/7 | y | y | y |
| Final Presentations Slides | 6/6 | y | x | x |

1.3 Evolution of the SPMP

Due to the project manager being unavailable for most of the creation of the SPMP draft, the main programmer and systems analyst will complete the bulk of the draft in his absence. Unscheduled updates must be documented in the version release table on page 1 of this document. The 1.0.0 draft contains no section for additional components such as appendices. Additional components belong to section 6. Adding section 6 must be mentioned in the version history table and the next team meeting.

1.4 Reference materials

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title of document | Date | Author | Publishing organization | Status or report number |
| Software Project Management Plan (SPMP) | 2003 | Anne Banks Pidduck | University of Waterloo | [1.0](https://cs.uwaterloo.ca/~apidduck/se362/Assignments/A2/spmp.pdf) |
| 1058-1998 - IEEE Standard for Software Project Management Plans | 1998 | C/S2ESC - Software & Systems Engineering Standards Committee | Institute of Electrical and Electronics Engineers | [1058-1998](https://doi.org/10.1109/IEEESTD.1998.88822) |
| Software requirements specification | Started 4/15/2019  Draft completed  5/1/2019  Final version  5/31/2019 | G. Yu | FCC | 1.0.0 |
| Software test plan | Started  5/2/2019  Draft completed  5/23/2019  Final version  6/7/2019 | FCC | FCC | 0.1.1 |
| Program code | N/A | G. Kienzle | FCC | Undetermined |
| User documentation (manual) | N/A | FCC | FCC | To be started |

1.5 Definitions and acronyms

* SPMP: software project management plan
* SRS: software requirements specification
* SDD: Software design description
* FCC: Falcon Computer Company, this company
* Estep Corporation: the multibranch parent corporation which includes the FCC and other subsidiaries
* Corp: corporation
* Head of Estep Corp: Chief Executive Officer Mr. Mark Estep
* CEO: Chief Executive Officer
* API: Application programming interface
* User interface: the component of a program which the user and program interact with each other. The user controls the program and the program provides feedback.

# 2. Project organization

2.1 Process model

The process model is based on the waterfall model. For the first few weeks of the project, all group members, especially the project manager, will focus exclusively on the SPMP and SRS. After the draft SPMP is completed, the systems analyst will focus on the draft SRS while the project manager will continue to maintain the SPMP, while the main programmer will divide his own time between development of the aforementioned deliverables. After all members are satisfied with the draft SRS, a further polished version will be shown to the client after approval of and comments on the draft by the head of Estep Corp. The systems analyst will continue efforts on the SRS and the main programmer will at last begin work on draft code based on the SRS, which will be stored in a Github repository created by the project manager according to the specifications given by the head of Estep Corp. At the same time, all members will contribute to creation of the software test plan based on the SRS and create documentation that the client will be able to understand and refer to whenever necessary. After the draft software test plan and test code are approved by the head of Estep Corp, the systems analyst will finalize the SRS and the main programmer will modify the code as necessary until the final product is as best as it can be. The documentation and slides presentation will be completed at the same time. All members will confirm that the final product fulfills all test cases and prepare to submit hard copies of all deliverables.

2.2 Organizational structure



Figure 2-1: Line of command as shown by arrows, which lead from an individual to their commanding entity

Parth Agarwal is the project manager and head of the Falcon Computer Company. Grey Kienzle, the main programmer, and Gene Yu, the systems analyst, both report directly to Parth Agarwal as shown in figure 2-1. They will report to him through Google Hangouts or in Poolesville High School. As FCC is a subsidiary of Estep Corporation, Parth Agarwal reports to Mr. Estep, CEO of Estep Corp.

If two team members determine that another team member is not contributing sufficiently relative to the other members’ efforts, the offending team member will receive a warning from the other team members. If the offending team member does not comply with the others’ requests after two days, the other team members will discuss the issue with Mr. Estep.

FCC will collaborate with Techleon, another company working on the Prom Sign Up program which will work with the Sign-In Program. They will communicate mainly through Google Hangouts or in Poolesville High School. There is no scheduled time of communication between the teams, as they will communicate whenever necessary. Both of these other companies are subsidiaries of Estep Corp. and also serve our client, Mrs. Alexandra Hicks. As of this version of the SPMP, FCC does not yet have the name of the competing company.

2.3 Organizational interfaces

|  |  |
| --- | --- |
| Organization | Contact Information |
| Customer: Alexandra Hicks | Alexandra\_S\_Hicks@mcpsmd.org |
| Project supervisor: Mark Estep of Estep Corp | mark.r.estep@mcpsmd.net |
| Project manager of FCC: Parth Agarwal | fcc.smcs2021@gmail.com |

2.4 Project responsibilities

|  |  |  |
| --- | --- | --- |
| Role | Description | Person/people |
| Project manager | Leads team, communicates with client, communicates with collaborating company, forms test cases | Parth Agarwal |
| Systems analyst | Formulates specifications for the software, forms test cases | Gene Yu |
| Lead programmer | Develops the code for the software, forms test cases | Grey Kienzle |

# 3. Managerial process

3.1 Management objectives and priorities

This project was made in the spirit of contributing to the Poolesville community. The goal is not only to create a working product for the near future, but a product that can be easily modified to work for any relevant, conceivable future. Completing project deliverables in a timely manner is a major priority, and attaining a satisfying product for the client is the next highest priority.

The schedule of this project is predetermined and will be strictly enforced to maintain this priority. The cost of the project is time. Time spent on individual deliverables is constrained by the complexity of and deadline for each deliverable. The functionality of the product is constrained by the client’s specifications but has a degree of flexibility with regards to non-functional requirements.

3.2 Assumptions, dependencies, and constraints

This project assumes that FCC’s contract with Techleon stays intact, and that Techleon successfully creates their Prom Sign-up solution, which will provide data on students attending the Poolesville High School annual prom. The schedule is the main priority and constraint. The budget is directly related linked to the schedule, and functionality is the next priority. The final program’s flexibility and potential for modification follows.

3.3 Risk management

A variety of risks exist in the project which may hinder the progress of the project. A risk should not be considered if it correlates to a potential time loss of less than one hour. Examples of risks that shall not be ignored should be discussed with the group. An example of one of such risks is the unwellness or lack of presence of a team member. If a team member is unwell for one day, there would be approximately thirty minutes of work time lost, therefore if a team member is unwell for more than two days, the following measures shall be taken. If the project manager is unwell or not present for more than two days, the systems analyst shall fill in for them. If the systems analyst is unwell or not present for more than two days, the lead programmer shall fill in for them. If the lead programmer is unwell or not present for more than two days, the project manager shall fill in for them.

The solution for recovering lost files and source code can only be minimized through prevention. Live versions of documents are stored on Google Drive. After development of tests and source code begins, all files will be periodically copied to Github for backup.

3.4 Monitoring and controlling mechanisms

The project manager will meet with the team or communicate as directly as possible with the team at least once every three days to assess progress. During these team meetings, the team members will evaluate how efficiently the members work and whether or not they fulfill their roles. Each team meeting will be noted in a document in the Meetings folder of the Google Drive folder for the project, or at least one team member will take note of the meeting in his/her online computer science journal, which can be accessed in the Journal folder of the Google Drive folder for the project. (See section 2.2 for information on procedures for handling a team member which does not contribute sufficiently to the project.) After completion of each deliverable, the team will send the deliverable to Mr. Estep for approval and modify the deliverable as needed to prepare for a client meeting within three days, or as is convenient for the client. During these client meetings, the team will evaluate all completed deliverables with the client and give a live status report on the project’s progress.

Major changes and significant bug fixes must be tested and documented according the the specifications described in the Software Test Plan.

3.5 Staffing approach

The following criteria must be met, otherwise the group shall have a meeting with the project supervisor. The project manager must enforce the schedule with minimal leniency. The manager must be aware of the other team members’ actions. The systems analyst must be able to make connections and study how the project will fit into the system that runs the program. The systems analyst must consider every piece of the system that affects the program or is affected by the program. This includes considering all directories that the program and the files it accesses are stored. If the project involves communication via the internet, all details on protocols will be written in the software requirements specification. The main programmer must learn to write in Google Apps Script language, HTML, and CSS. All team members must have basic knowledge on writing Google Apps Script, HTML, and CSS. The programmer should document code in a way that allows other members to understand every functional portion of the product. All team members must be able to fill in for the roles mentioned above as necessary. All team members must be able to consider possible outcomes of functional portions of the program and translate these outcomes into meaningful, succinct test cases.

# 4. Technical Process

4.1 Methods, tools, and techniques

Group members shall be familiar with all technical branches of the project. This includes the languages as well as how they are applied in the program. Languages to have a high knowledge of include Google Apps Script, a modified form of JavaScript, and HTML. Languages to have a rudimentary knowledge of include CSS. The program should be presented in a web app made in Google’s Google Script editor. Group members shall be responsible for knowing jargon such as “API”, “Document”, “File”, and “MCPS Secure vs. Personally Secure”.

4.2 Software documentation

A variety of documents will be produced regarding documentation of the software and its guidelines separate from manuals given to the user, including a Software Requirements Specification (SRS), a testing document, and in-code documentation. The SRS shall consist of a variety of constraints and ideas presented by the client. The testing document shall consist of a list of test cases to test in the software. In-code documentation should consist of comments in the code every line explaining what the line of code does.

4.2.1 Software requirements specification (SRS)

This document is a separate deliverable. Refer to section 1.2.

4.2.2 Software design description (SDD)

Information pertinent to this section will be incorporated into the SRS. Refer to section 1.2.

4.2.3 Software test plan

This document is a separate deliverable. Refer to section 1.2.

4.3 User documentation

The user will receive a manual that instructs them how to operate the software. The manual will consist of a step-by-step process to follow to fully experience the entirety of the program, using detailed images and screenshots. The documentation will also provide instructions for troubleshooting and direct the user to all files that the program accesses. The documentation will also be available on GitHub.

4.4 Project support functions

Software testing will be done internally. Functions related to configuration management will be taken care of by collaboration between the systems analyst and main programmer. Verification and validation will be taken care of in the formulation and completion of the software test plan. For quality assurance, FCC will run test trials with Techleon and ensure that FCC’s program responds correctly to data transfers.

# 5. Work packages, schedule, and budget

5.1 Work packages

The software requirements specification is the basis for the program’s design and structure. For development of the Chrome web app, necessary work packages are coding the logic in JavaScript, creating the HTML pages that the user will directly interact with, and forming a CSS stylesheet for the HTML page.

5.2 Dependencies

Completion of the SRS is mandatory prior to writing the program’s software. Writing source code in JavaScript takes precedence over all work packages related to the graphical user interface. Creating the basic skeleton of the program’s graphical user interface with HTML follows, and the CSS stylesheet for the web pages is the final step.

5.3 Resource requirements

FCC will require 30 hours of computer time and 60 overall hours to work on the project. FCC will not require any outside personnel, but will require both PCs and Chromebooks.

5.4 Budget and resource allocation

|  |  |
| --- | --- |
| Item | Time and Resources |
| SPMP | 10 hours |
| SRS | 15 hours |
| Test document | 10 hours |
| Code | 20 hours, 1 Chromebook |
| User documentation | 5 hours |
| Slides | 1 hour |

5.5 Schedule

|  |  |
| --- | --- |
| Item | Dates |
| SPMP | 4/10-5/13 |
| SRS | 4/15-5/31 |
| Test Document | 4/15-6/7 |
| Code | 4/15-6/5 |
| User documentation | 6/2-6/5 |
| Slides | 6/4-6/6 |