Alternate Scheduling Project

<<Scheduler App Project Management Plan>>

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Team Members
<<Mohammad Baraja>>
<<Mark Ekis>>
<<Raymond Rennock>>
<<Blake Higgins>>
<<Austin Ross>>

Document Control

Change History

Revision	Date	Description
1	3/5/2020	Initial Project Plan Creation
2	3/7/2020	Review and Revision

Document Storage

This document can be found in the group's google drive folder:
https://drive.google.com/drive/folders/1QAs2gm4AKI-3kBrDeA92CkhRKKrHmZ2U?usp=sharing
It will also be available on our Github:
https://github.com/umkc-cs-451-2020-spring/semester-project-group-11

Document Owner

Document owners are Mark Ekis, Raymond Rennock, Mohammad Baraja, Blake Higgins, and Austin Ross. The document was initially created by Mohammad Baraja and was reviewed by the rest of the team.

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1. OVERVIEW

1.1 Purpose and Scope

The Scheduler App will be developed as a web application enabling professors to schedule their lessons more effectively. A user will create an account and provide the necessary information for scheduling. The Scheduler App then verify using basic scheduling logic and confirm the viability of the schedule.

The project management plan covers five sections. These sections are; the overview of the classroom scheduling app project, start-up plan, work plan, control plan, and supporting process plan.

Users of the Scheduler App will be able to specify and verify the scheduling criteria, save, and upload schedules anywhere. The Scheduler App will be simple, user-friendly, and easily accessible via a browser. Thus, there will be no need for installation on computers.

1.2 Goals and Objectives

1. To enable users to create and manage schedules quicker, accurately, and conveniently.

2. To create a simple and reliable web application to improve scheduling.

3. To enable novice users of technology to maximize automated scheduling.

4. To provide users a feature to add/remove schedules and scheduling criteria.

1.3 Project Deliverables

1. Client and Server source codes

2. User's guide (school administrators and teachers)

3. System Administrator's manual

4. Test plan

5. System test Cases

1.4 Assumptions and Constraints

Constraints

1. Vue application design using packages such as JS, HTML, SASS, Vue JS, Node JS, Babel, and Webpack.

2. The Scheduler App must have a feature to remove teacher scheduling conflicts.

3. The App must have a numbered scale to prioritize professors based on requests.

4. Sharing a time-slot will not be possible for co-requisite classes.

Assumptions

1. All classes commence at 8 AM and end at 9:30 PM, and professors are assigned courses they can teach.
2. The users of the app are expected to have less than average experience using a computer.
3. A web application will be the most effective and efficient in a school environment.

1.5 Schedule and Budget Summary

	Planned start date	**Planned end date**	**Estimated cost**
Iteration 1	February 17, 2020	March 2, 2020	$7,500.00
Iteration 2	March 2, 2020	March 16, 2020	$10,000.00
Iteration 3	March 16, 2020	April 6, 2020	$10,000.00
Iteration 4	April 6, 2020	April 20, 2020	$12,500.00
Iteration 5	April 20, 2020	May 4, 2020	$10,000.00
Planned project completion date		May 8, 2020	
		Total	$50,000

Note: This is a hypothetical estimated cost. As we are not getting any financial compensation for this project, the estimated cost may be different for a group attempting to recreate this project with a budget. The actual cost of this project will be $0.

1.6 Success Criteria

1. School administrators should be able to access the scheduling application via a browser.

2. Professor's requests for slots must be prioritized.

3. The total cost of the project should not be more than 15% of the budget.

4. The app must have a feature to remove scheduling conflicts.

1.7 Definitions

Project deliverable: An item/product to be delivered at a particular stage in the project.

Work product: Any tangible item that is released in the course software development.

Work task: A small unit of work that allows for control and planning a software project.

1.8 Evolution of the Project Plan

Before moving to the next iteration, updates will be made on the plan to include details of upcoming iteration. After each iteration, the actual effort in completing specific tasks will be updated. Risks will also be evaluated to improve mitigation efforts.

2. STARTUP PLAN

2.1. Team Organization

Project manager: The primary role of the project manager is to create the project plan collaboratively with other members of the project team. The project manager will also organize and chair weekly team meetings and provide frequent reports regarding the project progress. Besides, the project manager will be managing risks by evaluating potential loopholes and spearheading the development and implementation of effective mitigation strategies.

Project sponsor: Project sponsor will provide the necessary funds to develop and implement the scheduling web application. The sponsor will also oversee the project to ensure that it is completed according to the budget.

App developers/programmers: App developers will be primarily tasked with coding, running, and testing the scheduler app.

Quality Assurance: The quality assurance (QA) team will evaluate the system to check whether it meets the stipulated standards on aspects such as performance and reliability.

2.2 Project Communications

All the members of the project team are highly encouraged to be responsive and interactive. Slack is the preferred channel of communication between the project team members.

2.3 Technical Process

The iterative methodology will be used in this Scheduling App project development. The model comprises the following phases;

Requirement Phase: Software development and system-related information is collected and analyzed at this stage.

Design Phase: The software solution (Scheduler App) is designed to meet the users' needs and address the problem at hand.

Implementation and Test: The Scheduling App is implemented and tested. Errors identified during testing are recorded and fixed.

Review Phase: The Scheduler App is evaluated and checked whether it meets the standards.

2.4 Tools

The following packages will be used to design the scheduling app: JS, HTML, SASS, Vue JS, Node JS, Babel, and Webpack.

3. WORK PLAN

3.1 Activities and Tasks

Task name	Task description	Owner	Planned start and stop date	Actual start and stop date	Dependencies among other tasks
Iteration 1	Administration (Set rules, classes, professors. rooms and other configuration settings	App developers	Feb 17-March 2	Feb 17 – March 2	No
Iteration 2	Generation (Generate schedule for teaching classes)	App developers	March 2 March 16	March 2 – March 16	Yes
Iteration 3	Use Case	Project team	March 16- April 6	-	Yes
Iteration 4	Use Case	Project team	April 6- April 20	-	Yes
Iteration 5	Use case and project completion	Project team	April 20 - May 4, 2020	-	Yes

3.2 Release Plan

The Iterative system development methodology will be applied in this project. The steps to be followed include requirements, design, implementation and test, and review. The project manager will be responsible for providing daily and weekly release and iteration plans.

3.3 Iteration Plans

Each iteration is expected to be completed within the stipulated timelines. Delays in one iteration will affect the next iteration; hence, the entire project is likely to be affected. Strictly following the stipulated timelines will ensure that the project on time (on or before 05/7/2020).

3.4 Budget

	Planned start date	**Planned end date**	**Estimated cost**
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4. CONTROL PLAN

4.1 Monitoring and Control

Bi-weekly – The project team will be meeting twice a week to report the status and progress of the project. The potential problems noted will also be discussed and mitigated amicably.

March 10, 2020 – The project team will meet to discuss and get updated on the progress of iteration 2.

May 1, 2020 – The project team will meet to report the status and progress of the project ahead of the scheduled completion date May 8, 2020.

4.2 Metrics Collection

Phase	**Measurement**	**Source**
Release planning	The effort estimates for product features such as removing scheduling conflicts, prioritizing professor requests, and assigning time slots will be recorded.	Mgr
Iteration planning	Effort estimates for scheduled tasks for each of the 5 iterations will be recorded. Then the effort estimates for product features is updated by the project team. Finally, the estimate dates in the release plan are updated.	Mgr

Iteration closeout	Actual effort for the scheduled tasks and product features is recorded.	Mgr/Pgr
App testing	The rate at which errors such as scheduling conflicts are found is recorded.	QA
Project closeout	The project performance data is recorded.	Mgr
Ongoing	The defects found from integration testing after the deployment of the Scheduler app are recorded. Each defect will be categorized as blocker, critical, major, minor, or trivial.	Mgr/Pgr/QA

5. SUPPORTING PROCESS PLANS

5.1 Risk Management Plan

Technical and Managerial Risks	**Probability**	**Likely Consequence**	**Mitigation Actions**
Challenge entering professor schedule request	0.2	Errors and inefficiency of the scheduling app	Ensure that the scheduling app is thoroughly checked for usability and reliability. Train the school administrators on how to use the scheduling web app.
Creating a database for professor information	0.2	Scheduling conflicts and errors	Design a database to store professor information.
Errors displaying results and conflicts	0.3	Affects the reliability and accuracy of the app	Implement rules to ensure accuracy in scheduling.
Security	0.3	Compromise the integrity of the scheduler app	Implement the latest database security programs and strategies in the market. Non-authorized users should not be able to access the scheduler.

5.2 Configuration Management Plan

1. All work products will be stored in a centralized and secured server.

2. The NNN-VVV naming convention will be used (Function of the document and version number).

3. Any member of the project team wishing to make a change must communicate with the rest of the team members about the change. If a response is not received within three business days, the requester is permitted to proceed with the changes.

4. Keeping and updating the change history is highly recommended. The details of the individual making the change, description of changes made, the purpose of change, and date should be indicated.

5.3 Verification and Validation Plan

The project management team will use one of the bi-weekly meetings to review crucial process results in software products. This will be carried out for each iteration. The primary objective of verifying and validating is to ensure that the end-product (Scheduler App) meets the performance, accuracy, reliability, security, and other desired standards.

5.4 Product Acceptance Plan

The Scheduler Application will only be accepted if it strictly meets the functional and non-functional standards/requirements. Non-functional standards regard elements such as operations, performance, security, documentation & training, and interface. Functional standards regard the required features of the Scheduler App, including user login/sign up, entering new schedule criteria, and verifying a schedule.