

## C868 – Task 2 – Section A



**Project Name:** Scheduling Software Program

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## Business Problem & Opportunity

### Customer

The customer Zion PM is a startup consulting company that has taken on quite a bit of new customers and due to the new employee hires they have made to keep up with the demand, they have been able to onboard anymore new customers recently. Zion has decided to expand their services outside of their current location and looking to expand across the Americas. This will enable them to not only take on customers across the USA but also venture into Mexico. This has enabled them to hire additional employees, so the company foresees growing even more if not doubling over the next year. They currently have over ten employees and over sixty customers.

### Business Problem

As of current Zion PM has manually handled customer appointments using pen and paper. Due to the small size of the company and lack of need they have not upgraded their very archaic methodology. This has not been a problem for them up to this point but now that they are expanding into different states and locations. Pen and paper just will not keep up with different locations. They need a way for their employees to log in and manage appointments in a manner that is cohesive across the company, across locations without extra time and effort and strain placed on each employee. This problem was noticed when they expanded beyond a couple employees and then became glaring obvious it was a huge blocker to the company when they expanded to different locations. This has led to the company losing one customer and having an employee take an extended leave of absence due to the stress of their archaic system, and methods for managing customers and appointments.

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### Opportunity

Zion PM has about one to two meetings per employee per day with customers as they work on consulting projects for their customers. These meetings are either scrum meetings that are used for planning purposes, presentations that can be anything from a proof of concept to project bids, or demos of a particular product. They have contract meetings where they discuss payment and details to a project they are consulting for. This is very critical to track as it could risk the company and the employees license if contracts are not followed closely. When Zion PM expanded their locations across the US it became very clear that they would need a new method of tracking and scheduling appointments as pen and paper was not only not secure but risked the company and took an extreme amount of time to track as well as was unprofessional. There also was a big demand for their employees to have access to a program to manage appointments and most importantly to be able to generate reports for each consultant to stay in sync when working across different states and to be aware of one's schedule.

### Software Solution

Scheduling Software Program will be a standalone software application written in C#. The software program will use the MySQL database for keeping customer data. An employee of Zion PM once given access can sign in using their company credentials given to them by the IT department, their user credentials will be validated against the user data that exists within the programs SQL database. The username will be cached so what is shown on the programs main form will show the appropriate names and appointments for the user logged in if they are selected on the reports form. The main program form will have three main features which are the customers, appointments, and reports form. From the customer button the user will be

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directed to a customer form where they can view, or update, add, and delete customers. From the appointment page they will be able to view, or update, add, edit, and delete appointments. From the reports form the user will have three types of reports that they can utilize and view which is based on the user that is logged in and selected from the list of users. They can access the appointments that are scheduled for each month which is based on the month selected and they can access all customer appointments which is based off the customer's name. From the main form they can also access appointments by selecting dates off the calendar. They can also search for customers based on the customers first or last name and this will show them customers that are registered in the programs database.

## Software Methodology

This is the first software program that we have created for Zion PM, it is important to us that we capture all the needs and requirements so we can provide them a satisfactory software program that will enhance the company and bring value to them. If we can land this correctly, we know that they will look to us for upgrades to the program and we will have started a valuable relationship with Zion that will hopefully result in a long-term partnership. It is important that the program be implemented quickly as the company has a critical need for it, and we do not want Zion to experience any more losses due to their current archaic system of doing business and tracking appointments. For this reason, we are highly recommending that we use the Agile methodology of software development. This will allow our software development team to meet milestones quickly, allow them to partake in extreme programming with continuous feedback, and allow them to fail quickly if needed and continue their work in small quick streamlined batches, it gives them the ability to sprint and establish good priorities

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and allow for less critical items to be completed later on when its decided to add additional features with further development.

The Agile method will utilize the following six stages within each sprint:

- Planning
- Design
- Coding/Development
- Testing
- Deployment
- Review

Six Agile stages will be used while developing the Scheduling Software Program. While in the Planning phase, the software developers will conduct an interview, and from that develop stories based on the stories and perspectives of at least three people who will use the software program daily. Review of these stories, will help our team determine what the applications top and main asks are, versus less critical requirements. All features requested will be noted for further software updates made to the program. There will be some overlap with the design phase present, Software developers must stay in communication with the power users of the company that can confirm their findings for the software program application requirements. Ensure that our development team is aware and are dialed in from the power users by using approach known as Top-Down.

Once the Planning and Design steps are completed the software development process can begin. The development work will start and we will actually begin coding the scheduling software program until it is completed. During this time the User Interface will be created at this stage of development. This stage will definitely overlap with the initial Testing stage, as unit tests are completed as soon as feasible, to minimize total development time for

the scheduling software program. When all main features and components have been tested separately and combined, then we can begin the full Application testing. This will first be completed by our quality assurance team. The next state it will be tested by real users in a live beta form. When the beta is done, and all-important software bugs and fixes have been completed, the scheduling software program will be deployed to Zion PMs cloud environment and local workstations. After this step we take Feedback, and the second iteration of the Agile process can start. This is the main benefit of using Agile methodology in the scheduling software program application. The scheduling software program planning stage and delivery can take place within a short amount of time, and will provide a more visually pleasing product. The less critical features can be shipped in future developments when the company has the money and resources for that process.

### Deliverables

The Agile software development lifecycle has two type of deliverables which are called the project and product deliverables. The details for both of these are listed below.

#### Agile Project Manager Deliverables

This list below reflects items that will be the Project Manager's responsibilities:

- Timeframe
  - Project schedule. Tasks that must be done, and time outlines reflecting how long each will take to complete.
- Wireframe/UI Documents
  - Rough outline of the user interface.
- Product backlog
  - Product requirements listed for the in and out of scope product requirements during the current cycle. This document will be viewed to determine what will be the focused work for each iteration of development.
- Sprint Backlog

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- Requirements list for this product which are part of the current cycle of development. This list is limited to what is being worked on by the development team.

### Agile Product Deliverables

What will be shipped to Zion PM when the project is finished.

- GUI
  - A developed user interface that allows user access to every section of the application.
- Security access
  - Standard login protocols that guarantee user security.
- Custom functional database
  - The database will be part of the company cloud environment, database access for Zion PM.

### Deployment

The deployment of the software will be scheduled between Zion PMs' IT Department Leader. Since they are a small company, the requirements before we can deploy this software will be simple the application will be installed on all endpoints and will require a solid network connection to access the SQL database on Zion PMs new created cloud providers server machines. The support of the IT department and our development team is critical to make sure that the software is deployed correctly, and their IT leaders learns the software program as he will be responsible for the functionality of the scheduling software program locally. The original training should be done with the IT leader to ensure that they have knowledge of the new scheduling software program. Our goal is to train them extensively, so they do not have to reach back out to us for ongoing assistance. The deployment process should not take any more than two business days, and this includes the onsite software training.



### Testing Methods

Data entry and data storage are the main two portions of the software scheduling program. Other features will be added later, but its core functionality is to create, update, store, and delete data records. For that reason, the most important testing should be on those functions. There are two types of records and user sign in functionality. Customers, Appointments, and Users. We will test the function of adding, deleting, updating, and saving for each type of record. Testing will be completed to ensure that the created users can sign in. Lastly, the search functionality for customers' needs to be tested. Unit testing of each part of the application as it is combined with the application will be the best way to ensuring record management is working properly. Once the software program is assembled then we will start the end-to-end software program testing will be started with dummy data initially that we have provided. Black box testing will be the last stage to be completed and this will be done by the important users that we use during training. They will also be part of requirements gathering for future development of the software via cycles.

### Requirements

#### Programming Environments

This application was designed to work within a windows environment that requires either Windows 10 or the newest OS of Windows 11. This software will require a dedicated SQL server for storage of the database. This will use a MySQL Cloud database that Zion PM already has set up in place. Software requirements detailed below:

- MySQL Custom Cloud Database (client already has)
- Microsoft Windows 10 (or newer version)

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### Program Environment Costs

The environment costs are low for this software standalone program. Zion PM currently has everything they need in place for this software program. They most recently decided to invest in workstations that are Windows 10 machines, and they invested in a cloud service that gives them a subscription and access to MySQL. Since they already have a MySQL license so they will only have to pay for any future extra data usage from their cloud service provider. This fee could be around \$500 annually based on the average cloud-based server cost. It will be billed on consumption so we have advised Zion PM to include this in their future budget.

### Human Resources Required

The biggest expense that Zion PM will have is to cover the software development of the scheduling software program. We estimate that that 90% of their budget hours and cost will be used by the development team. The remaining 10% will come from the important users in testing and the IT leaders time and administrative duties.

## Project Timeline

Below is the proposed software scheduling program timeline. The dates and schedules are subject to change based on feedback and the software project needs.

Phase	Milestone/Task	Deliverable	Description	Dates
Planning	Requirements gathering and initial planning	Requirements	Zion meeting and user stories gathered	06/03/2022-06/04/2022
Design	Core Design	Low fidelity wireframe & High fidelity mockups	Wireframe mockups & User interface prototypes of wireframe	06/05/2022-06/07/2022

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Development	Coding Application 1 <sup>st</sup> iteration	Functional application that includes live data	Development work including the creation of the scheduling software program based on our requirements gathering and using of user interface prototypes	06/10/2022-06/21/2022
Testing	Unit and Application Testing	Test results Which include the hit list for expected bug fixes	Testing started during the development process which will run concurrently to accelerate development time	06/22/2022-06/28/2022
Deployment	Application Deployment	Application & Deployment	Application will be deployed to Power Users and several days later to regular users after training session is completed	06/30/2022-07/05/2022
Review	Post-mortem	Future goals & process review	A thorough review of the development process will be done. Areas that need to be reviewed in future Agile cycles will be identified. Requirements will be gathered for next stage of the project.	07/07/2022