C868 – Software Capstone Project Summary

Task 2 – Section A

Capstone Proposal Project Name: Software Agency Scheduling Platform

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Software Agency Scheduling Application
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Business Problem

The Customer

The Customer is Mathis Software Solutions, a software development agency with offices in the United States, Canada, Mexico, and Germany. Most of the staff make multiple appointments daily, both internally within the company and externally with clients, so they need a system that is easy for them, their receptionists, and other support staff to operate.

Business Case

The company has been letting each consultant manage their own schedules using their preferred applications and methods. While this has worked well for years, management needs to centralize their scheduling operations. One key issue is appointments made across time zones need to be accounted for and streamlining the scheduling process can improve customer experience by reducing wait times.

The proposed application will meet these needs by empowering staff to schedule appointments within a secure, authenticated database. The application should prevent users from scheduling overlapping appointments, as well as display all appointments in the user's local language and time zone.

Each appointment will contain start/end dates and times, customer type, appointment type, and customer location. The system should have search functionality as well as weekly, monthly, and overall views.

Fulfillment

The application being proposed will be written in C# using a MySQL database and will use Windows Presentation Framework to provide a simple user interface for staff members to create, read, update, and delete scheduled appointments, and validate all data inputs to match appropriate business conditions.

The application will be access-controlled via username/password login. Once a user is successfully authenticated, they will have complete access to the views and controls for appointments, customers, reports, and other preferences. The view layout for appointments should allow switching between weekly and monthly views.

Existing Gaps

The company has been allowing each staff member to manage their own appointments with various software or paper methods. This has led to a fair number of scheduling conflicts that had to be resolved quickly, usually with a frustrated client on the other end. In order to efficiently manage the company-wide schedule, a centralized application should be deployed to resolve the myriad issues with manual scheduling. There are many issues with inter-timezone scheduling that need to be addressed, as well.

SDLC Methodology

The SDLC Methodology utilized in this project will be the Waterfall method, due to the requirements being well-understood and well-defined before development has begun, as well as the need for a strong sequence of development phases.

The first phase is the requirements stage, in which requirements are obtained from all stakeholders and the specific business needs that will drive development will be defined.

Secondly, the design phase will guide the creation of wireframes and other components allowing the team to ensure the requirements match the design architecture.

One of the longest phases may be the implementation phase, where the application will be developed based on the design stage output.

After implementation, we arrive at the verification phase where the application is tested against the requirements defined in the first phase to determine if it meets all requirements correctly.

The deployment stage comes next, in which the application will be deployed into the customer's environment.

Finally, the maintenance stage allows the development and QA teams to release bugfixes, security or feature updates. Bug reports and user feedback obtained from the client will be used to guide the efforts of this stage.

Deliverables

Project Deliverables
These consist of items that are part of the Project Manager's realm of responsibilities.

- Project Timeline
- Test Plans

Product Deliverables
Product Deliverables represents what is produced to deliver to the customer.

- ERD/Class Diagrams
    - Define the relationships between data entities
- Wireframes
    - A low fidelity, rough representation of the application
- Compiled and installable software product

Implementation

The implementation of the application will be coordinated by the Project Manager, and will involve simply setting up a cloud MySQL server and installing the client application on each user's workstation. The installation will be done via the network using Group Policy. The Group Policy will also dictate that the application will launch when the user logs into the operating system.

Company policies will be updated to reflect the requirement to utilize the proposed software solution by all staff members.

The application will first be tested by being used by the employees while they also continue to utilize their previously preferred methods. This is to ensure that an application error will not disrupt the flow of business operations. After one month of successful scheduling, the application will be migrated to a live environment and begin being used exclusively by the staff.

Validation and Verification

The software will be validated and verified to meet the specifications outlined in the requirements. All stakeholders should be involved and should be reminded of the key requirements before a live demonstration is given.

Once the live demonstration reveals that the application meets specified requirements, a session will be organized with the staff members expected to utilize the proposed system most often. This session will serve as the pilot training session, as well as a way to uncover last-minute defects or issues meeting the requirements. The key stakeholders will participate in the session, giving them an intimate look into the new system and how users will interact with it. This session will effectively act as the Acceptance Testing phase.

Environments and Costs

Programming Environment

The database will be deployed into a cloud MySQL database tied to the company's existing infrastructure with HostGator.

The environment into which the software will be installed will remain mostly the same, with the exception of Group Policy modifications to the existing Domain Controller and the installation of the .NET Framework libraries on the client workstations.

Client workstation system minimum requirements include:

- Windows 8 or above
- 2GB RAM
- 20GB HDD

Environment Costs

The costs to operate the environment are extremely minimal, as the company already has existing infrastructure with HostGator that includes cloud MySQL databases. This also gives us the flexibility to create development and staging databases with ease.

Human Resource Requirements

The development team will be comprised of four members, two developers and two QA specialists. They will comprise an estimated 80% of the budget and timeline, with the remainder being used by network technicians and domain administrators for the final rollout.

Project Timeline

Phase	Milestone/Task	Deliverable	Description	Dates
Requirements	Task 1 / Gather requirements	Requirements	Meeting with customer and procedure review	7/1/2022
Design	Task 2 / Create designs	Low fidelity wireframe and class diagrams	Design the UI and ERD that represent the requirements	7/2/2022 – 7/4/2022
Implementation	Task 3 / Development	Installable application	Develop the software to meet requirements and designs	7/5/2022 – 7/12/2022
Verification	Task 4 / Meeting	Test results and decision to deploy	Demonstrate the application and validate test results	7/13/2022 – 7/14/2022
Deployment	Task 5 / Launch	Fully operational software deployed on the network; reported errors	Perform final checks and deploy the application throughout the domain	7/15/2022
Maintenance	Task 6 / Improvement	Feedback from staff and stakeholders; new action items	Use feedback to guide the improvement of future versions	7/16/2022 – 7/31/2022