**C868 – Software Capstone Project Summary**

**Task 2 – Section A**



|  |  |
| --- | --- |
| **Capstone Proposal Project Name:** | CDUTermTracker- Term Tracking Application for CharDennis University |
| **Student Name:** | Shannon Marie Peck |

**Table of Contents**

Contents

[**Table of Contents** 2](#_Toc104223837)

[**Business Problem** 3](#_Toc104223838)

[**The Customer** 3](#_Toc104223839)

[**Business Case** 3](#_Toc104223840)

[**Fulfillment** 3](#_Toc104223841)

[**Existing Gaps** 4](#_Toc104223842)

[**SDLC Methodology** 4](#_Toc104223843)

[**Phases of Agile Methodology:** 4](#_Toc104223844)

[**Deliverables** 5](#_Toc104223845)

[**Project Deliverables** 5](#_Toc104223846)

[**Product Deliverables** 5](#_Toc104223847)

[**Implementation** 5](#_Toc104223848)

[**Validation and Verification** 5](#_Toc104223849)

[**Environments and Costs** 6](#_Toc104223850)

[**Programming Environment** 6](#_Toc104223851)

[**Environment Costs** 6](#_Toc104223852)

[**Human Resource Requirements** 6](#_Toc104223853)

[**Project Timeline** 6](#_Toc104223854)

# **Business Problem**

**The Customer**

The customer is CharDennis University, an online university specializing in technical degrees. It has a student body of 10,000 students on average, and predicts growth of 5% this year. The university currently utilizes web-based term tracking for its students, and has no mobile infrastructure. CDU’s mission is to provide a high-quality, student-driven education that is self-paced and comprehensive, and to empower students to take charge of their schedule and learn at a pace which is most appropriate for them.

CDU’s short-term goal is to provide a scalable mobile application that allows students to track their term progress. Their long-term goal is to leverage this mobile application into higher perceived quality by students, leading to future referrals and an increase of 10% in 2022.

## **Business Case**

CDU’s student body currently has no way to track their term progress on mobile devices, as the website used by CDU is not responsive and therefore poorly designed for mobile devices. An increasing number of students have expressed interest in access to term tracking on their mobile devices. The CDUTermTracker application will meet the client’s needs by providing a high-quality application that will allow students to track their term progress.

Due to regulations, CDU’s students are permitted to take no more than 6 courses per term. Each course has two assessments: a Performance Assessment and an Objective Assessment. The application will need to allow students to track their terms accordingly.

## **Fulfillment**

CDUTermTracker is a multi-screen Android mobile application that will allow students to enter:

* Unlimited Terms
  + A term start date
  + A term end date
* Up to 6 courses per term
  + A course start date with optional notifications
  + A course end date with optional notifications
  + A course due date
  + Instructor information:
    - Instructor name
    - Instructor email
    - Instructor phone number
  + Optional, shareable notes
  + The ability to search course names
* One Performance Assessment per course
  + An assessment due date with optional notifications
* One Objective Assessment per course
  + An assessment scheduled date with optional notifications
  + A field for Pre-assessment score
  + The ability to generate reports based on scheduled date of upcoming assessments

Notifications should trigger if the associated date is within one week, and all fields that allow text should have security protections to defend against SQL injection attacks. All fields except notes are required, and should have error handling to prevent poorly formatted entries.

The application will use a SQLite database to store information locally on the user’s mobile device, and will allow students to create, view, update, and delete terms, courses, and assessments. There will be additional error-handling to ensure that start dates do not occur after due dates.

# **Existing Gaps**

CDU does not currently have a mobile application in place. Their current term tracking utilizes a website, which is not responsive to mobile screens. CDUTermTracker will provide CDU’s students with a mobile application for term tracking.

# **SDLC Methodology**

Considering the nature of your project, select a Software Development Life Cycle (SDLC) methodology that will be used to manage the project. Those may include…………. Be sure to describe the process you select first and why it’s a good fit. Then review the methodology phases and what part of the project will align with each.

Agile methodology will be utilized when delivering this project due to its focus on delivering high-quality deliverables quickly and repeatedly iterating to improve those deliverables. Testing will be paramount and will take place repeatedly throughout the progress.

One benefit of Agile SDLC methodology is that it produces a working deliverable more quickly. This gives the customer an earlier opportunity to provide input to that deliverable, allowing our team to be more responsive to the customer’s needs.

## **Phases of Agile Methodology**

* Requirements Gathering – this is the phase most recently completed, and occurs when the customer’s needs are discussed and documented. Once the first iteration is complete and the product has been reviewed, this phase will be re-entered based on the results of the review.
* Design – this is the current phase of the project. The client’s needs have been determined, and the requirements documented. The program can now be designed, starting with a wireframe to plan layout and UML to design the program’s structure.
* Development - based on the layout and UML created in the Design phase, development can begin and classes and functionality of the program implemented.
* Testing – as functionality is implemented, testing occurs. If any test(s) reveal a problem, the development phase can be reentered to address that failure.
* Deployment – the initial deployment will be to a small group of users for user acceptance testing.
* Review – The results of the user acceptance testing are reviewed, and based on those results the requirements gathering phase is entered once again. Design, development, and testing occur again based on new requirements uncovered I the review phase. The second iteration’s deployment phase will be to a wider subset of 500 students, and another iteration will begin again based on those results. The process is repeated to a larger subset of 1,000 students (in addition to the previous 500), and then one more time to the general population. Then the project enters the maintenance phase (which also follows the Requirements Gathering, Design, Development, Testing, Deployment, and Review phase structure).

# **Deliverables**

Provide information about what deliverables are related to your SDLC method. List and describe those deliverables. Also, include examples to help clarify what specific type of artifacts will qualify.

For example:

There are 2 types of deliverables that are associated with the Waterfall SDLC that the customer has requested. They are project and product deliverables.

## **Project Deliverables**

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

* Project Schedule
  + When and what will be worked…
* Test Plans
  + The testing steps that the customer uses to perform validation…
* Requirements Traceability Matrix (RTM) …etc…

## **Product Deliverables**

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

* Wireframes
  + A low fidelity, rough representation of the application…
* Mockups/Layout
  + These are designs that are typically high fidelity but contain no functionality. The customer can review…
* Prototype…etc…

# **Implementation**

Explain how the project will be implemented. This has to do with how the software application will be put into the production environment, not how it will be created. So, consider the customer and timing required to meet its needs. When will validation and verification take place? What personnel will be part of the implementation and what roles will they serve?

For example:

The implementation of this application is simple…of this being a new system no outages are necessary and the deployment to production can be staged prior to the customer communicating with the user base to start…

Implementation coordinated by the Project Manager and involves several different groups in a variety of capacities. The Web Administrators …etc…

# **Validation and Verification**

Describe the methods that you'll use to prove that the software application functions sufficiently well to meet the customer's needs. Does it provide all the functionality required? How will those tests be performed and by whom? Identify how segments of the code will be tested. The Customer will perform Acceptance Testing prior to taking ownership of the application. The Acceptance Te

For example:

Testing will be a comprehensive full lifecycle test to ensure that the application has met the requirements as designed. The customer will complete multiple testing sessions with multiple users…etc..

# **Environments and Costs**

## **Programming Environment**

Provide a clear picture of what hardware and software are required to complete the project.

For example:

* Windows 2016 Server running IIS 7.5 or higher
* Microsoft SQL Server 2012 or higher
* …etc..

## **Environment Costs**

Provide an explanation of the costs associated with the software application. Some might be startup, first-time costs while others might be a percentage of licensing costs. Environment costs are relatively minimal. The environment where the system resides in a shared environment where costs are shared by the organizations. There is a nominal fee associated with maintaining the database of $500 a year that allows for unlimited storage size and 99.8% uptime. The web server is another fee of $300 a year that includes maintenance and upgrades of the following; Windows Server, IIS, and ColdFusion. The final cost is based on the thick or thin clients utilized by the customer. Each device that is attached to the network has a $40 annual fee which covers Operating System and Network upgrades.

## **Human Resource Requirements**

What is the time and cost for the labor to complete the application?

For example: The larger share of human resource is by the developers of the project followed by the PM. Developers consume approximately 75% of the hours and dollars associated with …etc.

# **Project Timeline**

For this section, you'll need to look at the phases of the project and provide information about the time required to complete each phase.

For example:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Phase | Milestone/Task | Deliverable | Description | Dates |
| Pre-development | Task 1 | Requirements | Meeting with customer and procedure review | 6/1/2018 – 6/30/2018 |
| Design | Task 2 / Design files | Low fidelity wireframe  High fidelity mockup | Create the UI that relates the look and feel of the project | 7/1/2018 – 7/15/2018 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |