CSCI 497 Senior Design Draft Proposal

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Problem Statement

Students and faculty at Charleston Southern University should have the resources available through the university to host the necessary websites needed to complete their various coursework and related tasks. Currently, Charleston Southern University does not have the capability and setup to perform this function. This requires students and faculty to find their own website hosting solutions independently. Often, this results in these individuals paying for the service chosen, out of pocket, for the duration of the course. Should the University provide a standardized method of doing so, it would lessen the burdens of time and money spent on searching and purchasing various services for the students and faculty. This will aid in minimizing the cost out of pocket, allowing them to focus on their courses. There is an ongoing need in the department for a solution to hosting websites. Providing a means to this will allow for standardizing across various courses and faculty resources while ensuring the financial burden is as minimal as possible.

Project Description

This project is the design, proposal, and implementation of a webserver solution for the Charleston Southern University Computer Science department. The goal for this project is to design a solution for students and faculty to host the websites that they design that are needed to complete various coursework, without independently researching and purchasing hosting services on various sites. This will be accomplished through an IT decision process that considers cost, functionality, longevity, and support and maintainability. This solution will provide for up to one hundred fifty websites to give students and faculty the ability to easily manage the hosting of their various coursework. Furthermore, it will give cohesiveness to the

department to have websites all hosted the same way and serve as an opportunity for students to develop professional skills by deploying websites.

Proposed Implementation Languages

To complete this project in such a way that the websites for all the courses are supported the solution must support a number of languages. At a minimum, the solution will support websites using Ruby, PHP, and Python.

Additional Software and Equipment

The additional software and equipment required will vary depending on the solution chosen. For testing purposes pilot programs will be needed and used to serve as "tester" websites for determining the fit of different solution options. These websites will be made with various languages used across courses in the department and with functionalities that are like those expected of students. The testing of some solutions considered will require additional equipment to be determined upon finding.

Personal Motivation

There are various ways in which this project will help to further my knowledge. One of the main ways in which this will be is in the gaining of skills and knowledge of webservers: how they are set up, what is important to look for in one, and how to find a solution that fulfills the needs of a particular organization. The skills that will be gained through this project are more than just technical ones. Another important skill set that is important to have in this field is to be able to research and design proposals for projects like webserver, but also any other large project that an organization may undertake. Knowing how to research and compare different options, evaluating their effectiveness and cost, as well as which solutions will fit the given needs will serve me well in whatever role I may find myself holding in the future. This project is about

more than just the technical skills of setting up a webserver; it is about the process and skills that go into designing a plan that can be comprehensive and effective.

Outline of Future Research Efforts

In the future, this project will require upkeep and further decision making. This may allow for future students to potentially expand upon the solution for future senior projects. Additionally, it will need exploration of options to continue the chosen solution or to change or upgrade the solution based off of the ever-changing needs of the department. No good solution for this project should be permanent and left alone, it should and can be in the future reevaluated and improved based off performance, expense, and department needs.

Schedule

Item	Description	ECD	Status	Deliverable
1	Plan			
1.1	First Draft Proposal	03/01/2025	Finished 03/01/2025	Proposal document draft
1.2	Draft Proposal and Requirements	03/29/2025	Finished 03/29/2025	Proposal document and separate requirements document drafts
1.3	Completed Proposal and Requirements	04/29/2025	Finished 04/29/2025	Completed proposal and requirements documents
2	Construction			
2.1	Project Proposal and Requirements Document	9/06/2025	Complete	Proposal and Requirements document carried over from previous phase
2.2	Draft Test Plan & Project Update	10/18/2025	Incomplete	Functional webserver
2.3	Final Test Plan & Project Repository	12/06/2025	Incomplete	Fully Functional webserver
3	Implementation & Defense			
3.1	Project Proposal and Requirements Document	01/2026	Incomplete	Proposal and Requirements document carried over from previous phase
3.2	Draft Test Plan & Project Update	02/2025	Incomplete	Test plan and Project Report
3.3	Final Test Plan & Project Repository	03/2025	Incomplete	Completed Project in GitHub
3.4	Defense Presentation & Documentation	**Final Date** 04/2026	Incomplete	Completed presentation, webserver, and reports

References

Cloud Application Platform | Heroku. www.heroku.com.

Cloud Application Platform | Render. www.render.com.

Deploy App Servers Close to Your Users. Fly. fly.io.

Pearson Tech Skills. "How to Write Functional Requirements." *YouTube*, 12 July 2021, www.youtube.com/watch?v=7cwW1P-8Opc.