

C868 – Software Capstone Project Summary

Task 2 – Section A



Capstone Proposal Project Name: _____ Christie's Companions

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Business Problem

The Customer

Christie's Companions is a small dog breeder operation run by a single owner/operator. Its mission is to provide small dogs as emotional support animals for older individuals, particularly empty-nesters and widows who would otherwise lack companionship.

Business Case

Christie Hill-Smith, the Owner, has previously operated the entire business using paper and pen and has found this to be unwieldy as the size of her operation grew. She also is looking to create a public facing website to serve as a catalogue of the animals she raises. Most of the animals are pure-bred and need their pedigree to appear as part of the catalogue. Vaccination records are kept in Manila folders along with pedigree information and pictures. The need for a record keeping system used backend for a public web catalogue would significantly decrease the needed physical space used by the operation, increase the number of animals that can be tracked, and allow easier planning of breeding pairs to reduce the harm caused by inbreeding, as well as allowing greater visibility to the market.

Fulfillment

A web application will fulfill the needs prevented. The application will be hosted on Amazon Web Services, running Ubuntu 18.04 Long Term Support Edition. The application will be served by Apache with Phusion Passenger, running on a Ruby-on-Rails framework backed by a PostgreSQL database.

The application will feature a front page to present the Customer's mission, a catalogue that displays each animal's information, pedigree, pictures, and other records.

The application will provide an administration portal that will allow the Customer to manage breeds, animals, and records. Animals can have multiple pictures uploaded as well as other types of records. The administration portal will be password protected.

Out of Scope

The following features are out of scope and will not be implemented:

- Sales accounting
- E-commerce
- Payments
- Search Engine Optimization
- Marketing
- High-fidelity Web Design

Existing Gaps

The existing system is a series of handwritten notes and photographs as well as pedigree and vaccination records. There is currently no systematic process in use. Customers visit the animals at the Customer's home and then purchase the animal with a copy of the records with cash.

The proposed solution will allow the notes to be entered into a database system and easily managed through a web interface. The Customer's customers will be able to visit the website to view details of each animal before coming to visit with it and can make more informed decisions about which one they want.

Agile Methodology

The Agile Methodology will be used in this process because it is known for its ability to keep the Customer in the loop at all stages of development allowing for changes to be made as the project develops. Each week, the developer and customer will meet face to face to go over the progress from the previous week. The system is demonstrated, customer feedback is gathered, and plans are made for the next week. Each weekly cycle is called a sprint.

Deliverables

The planned deliverables will be available on a testing server for customer review for each sprint as follows:

- Sprint 0: Feature Plan and Design Mockup Approval.
- Sprint 1: Administrator portal with basic record keeping abilities.
- Sprint 2: Administrator portal with ad-hoc report creation.
- Sprint 3: Public web catalogue with search feature.
- Sprint 4: Integration of unresolved customer feedback and final user acceptance testing.
- Sprint 5: Production implementation.

Implementation

During development, a staging environment that is reasonably close to future production environment will be made available to the Customer to demonstrate each deliverable. After the final user acceptance testing in the staging environment, the production environment will be setup, and the Customer's domain pointed to the new site. Then, the Customer will begin to use the site to input data and marketing her animals to the public. As this is a new system, there will be no issues with down-time or a transition system for current users.

Implementation will be coordinated with the owner, Christie Hill-Smith, by the developer, Michael Irick. Post-implementation support will be carried out by the developer.

Validation and Verification

In addition to the automated unit test suite of the data validations performed during development, the Customer will perform acceptance tests at the end of each sprint on that sprint's

deliverable. At the end of the final sprint, the customer will make a final round of acceptance testing before giving the green light for production implementation. Final production implementation will occur and the customer will be notified when the application is live.

Environments and Costs

Programming Environment

- Ubuntu 18.04 LTS running on AWS EC2 instance
- Apache 2.4.41 web server
- Phusion Passenger 6.0.4 application server
- Ruby 2.4.1 programming language
- Ruby on Rails 6.0.1 application framework
- PostgreSQL 12.1 database server

Environment Costs

The costs for hosting and managing the staging and production environments during development and afterwards will be relatively minimal at \$40/month. As all software used is free and open-source, there are no licenses to be paid.

Human Resource Requirements

The time and cost of labor estimated for the completion of the application and assemble the necessary requirements and documentation is 104 hours. 8 hours is allocated to Planning and Design, 80 for Development, and 16 for documentation. These are to be billed at \$100/hour for a total of \$10,400 hours.

Project Timeline

Phase	Milestone/Task	Deliverable	Description	Dates
Planning and Design	Sprint 0	Feature Plan and Design Mockup Approval	Meeting with customer and design review	11/11/2019 – 11/15/2019
Development	Sprint 1	Administrator portal with basic record keeping abilities.	Create the administrator portal with the basic features of a record keeping system.	11/18/2019 – 11/22/2019
	Sprint 2	Administrator portal with ad-hoc report creation.	Create the advanced features of the record keeping system in the administration portal, including ad-hoc report creation.	11/25/2019 – 11/29/2019
	Sprint 3	Public web catalogue with search feature.	Creation of public web catalogue from the design mockups,	12/02/2019 – 12/06/2019

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			including a front page and a searchable index of animals.	
	Sprint 4	Integration of unresolved customer feedback and final user acceptance testing.	Fixing of bugs and other issues from customer feedback that have not been resolved at this stage. Final user acceptance testing and approval will occur.	12/9/2019 – 12/13/2019
	Sprint 5	Production implementation	The production environment will be setup and application will be deployed.	12/16/2019 – 12/20/2019