496 Software Project: CSD Central

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1   Client Information

By sharing this client information and the rest of this document, you are stating that this client has provided this project as something they want (not something you created and asked if they wanted), and that they are interested in having you complete this project for your capstone.

- Client name: Sandy Banthem

- Client title: Director of Operations and Finance

- Client email address: sandybanthem@chesarda.org

- Client employer: Chesapeake Search Dogs

- How you know the client: A student at Loyola introduced us.

2   Project Description

2.1   Overview

We were tasked to create an internal website for Chesapeake Search Dogs for communication and organization for internal staff. This project is streamlining internal organization for employees to increase efficiency.

2.2   Key Features

Some key features our client needs are a homepage, calendar, certification handling, log handling, and users.

The homepage must have a list of upcoming trainings, RSVPs, and weather forecast for that day. The website theme must also have navy blue as its main color, this was specifically requested by the client. It will not include the calendar.

This will be a seperate page. A calendar is also necessary to efficiently view upcoming RSVPs and scheduling work. User roles affects how a user can interact with the calendar. Admins can add trainings with info, date, time, and location. Each registered user can RSVP for an event on the calendar with a yes, no, or maybe. They also have the option to add a note. Every user in the system can see other's RSVP to coordinate accordingly. Each event also has communication logs with user numbers with a time stamp.

Certifications are important for the client and they need a way for users to send in their certifications. It will be sent as an image with the user name, date, date of certification, option of expiration, and expiration date to a database. Admins can view all certifications and users can only modify and view and their own certifications.

The client also needs a system to track and see logs for the users. Users can keep track of their training logs and they are connected to the calendar trainings. The date, location, time, weather, start and stop times are automatically filled in from the training. Users can also select a dog from their dog list.

Now, finally, the client needs a way to manage users. basic user control and security will be implemented. Users will have the parameters: name, email, username, password, birthday, address, phone, CSD Number, emergency contact, and emergency phone. They will also be able to enter dogs if applicable. Dogs will have different parameters: name, DOB, vet, status, color.

2.3   Why this Project is Interesting

We like their cause, they work with first responders and help save lives. Since we are building it from scratch as two people, it seems like a fair challenge. We have to consider real-world factors like security, backups, website uptime/reliability, and real user experience. And to add to the challenge, the client only has a rough idea of what they want right now, naturally we will probably have to communicate and change or add features to their liking throughout the process.

2.4   Areas of CS required

The areas of Computer Science required for this project are:

- Software Engineering
- Databases
- System Design
- Web Programming
- Full-Stack Development
- DevOps Cybersecurity

2.5   Potential Concerns and Questions

Ekto: Some concerns for me are keeping sensitive information secure and a backup database. Salting/hashing or two-factor authentication is probably the best option to keep user accounts secure, but keeping a backup database would be something new for me.

Alberto: I am optimistic that this project will work. I do believe that the weather aspect to the RSVP is a bit unnecessary, but it should not be too difficult to implement. There are multiple weather APIs to choose from.

2.6   Summary of Efforts to Find a Project

Ekto spoke with the client in November after a classmate introduced us, and they provided us the tentative list of features a few weeks afterwards. They were looking for someone to handle the development of an internal website. Ekto reached out to a handful of clients prior to this, but never received response.

3   Requirements

3.1   Non-Functional Requirements

Table 1 presents the NFRs for this software project.

ID	NFR Title	Category	Description
NFR1	Navy Blue Theme	Cosmetic	Make website have a Navy Blue theme.
NFR2	Backup DB	Reliability	Create a backup DB for data integrity.
NFR3	Website Deployment	Reliability	Deploy the website to be used by client.
NFR4	Website Reliability	Reliability	Make sure website is designed and created to be robust and reliable.

Table 1: Non-Functional requirements

3.2 Functional Requirements (User Stories)

Table 2 presents the functional requirements for this software project.

ID	Story Title	Points	Description
S1	Viewing Upcoming Events	2	As an user, I want be able to see upcoming events on the homepage, so that I can keep track of upcoming events.
S2	Viewing Event RSVP's	2	As an user, I want to see other people's RSVP status, so that I can see who else will be attending events.
S3	Weather Display On Homepage	2	As an user, I want to see the daily weather on the homepage, so that I can plan for training conditions
S4	Event RSVP's	3	As an user, I want to be able to RSVP Yes/Maybe/No for upcoming events, so that I can show my intention to attend events
S5	Adding Events to Calendar	8	As an admin, I want to manage and posy events to the calendar with info, date, time and location, so that users can plan accordingly events on scheduled days
S6	Viewing Event RSVP's (Again)	2	As an user, I want to see other people's RSVP status on the calendar, so that I can see who else will be attending events
S7	Live Calendar	5	As an user, I want to have a live calendar, so that I can view scheduled events
S8	Event Notes	2	As an user, I want to be able to leave notes for events, so that I can plan for myself
S9	Upload Certification	3	As an user, I want to be able to upload my certifications as an image and fill out name, date achieved, expiration details, and add a title for the upload, so that I can be certified
S10	View Certifications	1	As an user, I want to be able to view my certifications, so that I can see what certifications I have
S11	Manage Certifications	2	As an user, I want to be able to modify or delete certification details, so that I can keep my certifications up to date
S12	Admin Viewing Certifications	1	As an admin, I want to see my users certifications, so that I can make sure my team is certified
S13	Certifications Filter/Search	5	As an user, I want to be able to filter certifications by date added, recently edited, or search by title name, so that I can quickly lookup my certifications
S14	Communications Logs	3	As an user, I want to be able to fill out communcations logs from events, so that I can keep track of what happened at events
S15	Training Logs	5	As an user, I want to be able to fill out training logs with date, time, weather automatically filled in from selected scheduled calendar event, so that I can easily fillout trainings
S16	Adding Dog To Training Logs	2	As an user, I want to be able to add a dog to training logs, so that I can keep track of their progress
S17	Editing Logs	2	As an user, I want to be able to edit/delete logs, so that I can make sure they are filled out correctly and accurate

S18	Logs Filter/Search	5	I want to be able to filter logs by date added, recently edited, or by type of log
S19	Creating Users	2	As an user, I want to be able to create an account with username, password, name, email, birthdate, address, phone number, CSD number, emergency contact, and emergency phone, so that I can use the platform
S20	Creating A Dog Account	2	As an user, I want to be able to create an account for my dog with their name, birthdate, vet, status, and color, so that I can use the dogs for logs
S21	Admin Control	8	As an admin, I want to be able to have the ability to have full view to registered users/dogs and be able to delete them, so that I can control the registered users
	Total:	67	

Table 2: Functional requirements as User Stories.

4 System Design

4.1 Architecture

[Which type of software architecture are you team following? Layered architecture, MVC, other? What are the main modules for your software?] [Main modules are not the same as Layers. If you adopted any form of layered architecture (MVC included), then your layers already group components based on responsibility. Therefore, for modules, think about semantically related components. For example, in a parking lot, I could have a User, Payment, Parking (Vehicles), Contact/Issues modules.]

4.2 Diagrams

[CS482, on sprints/iterations 2-3, you need to create and update a diagram (check Iteration 2-3 assignment for which type of diagram). On CS496, since before sprint/iteration 1, you should have a class diagram and keep it up-to-date. In CS496, if your class diagram changes at each sprint, then create a Class Diagram subsection for the sprints, and show the changes; while keeping the one here the most up-to-date version.]

4.3 Technology

[Which technologies are you going to use to implement your project? This should include the chosen programming language, main frameworks/libraries, and database or data storage. Testing framework is essential here as well.]

4.4 Coding Standards

[Are your team going to follow any coding standards? For example, using a naming convention for Database tables (like only singular lowercase names). Another example, only allowing code with unit tests and above 60% coverage to be committed (good convention since testing is going to be evaluated). If you need inspiration to define your coding standards, the Extreme Programming approach has a set of coding, design, and test rules.]

4.5 Data

[What is the main structure of your data? In SQL-like databases, this would be the planning of the main tables, their attributes, and interactions with other tables (basically an ER diagram). In NoSQL databases, this would be the main collections and general attributes of the JSON you will store in each collection.]

[Tip to better find and write the data your system will need. Go back to your User Stories and for each one, think to yourself: which attributes/fields do I need to store for this to work?]

[Tip 2. When a system has many different roles for people, those are usually done in a single User table/collection. Especially when they share many common attributes/fields.]

4.6 UI Mocks

[Define and draw/sketch/code the main UIs your user will interact with in your software. Add your UI mocks here and a short caption about it. Do not forget about the main forms and CRUD UIs.]

5 Iterations

5.1 Iteration Planning

Table 3 shows the iteration planning.

			Points	
It.	Dates	Stories	Planned	Done
1	01/27 - 02/10	S19 Creating Users, S20 Creating Dog Account, S21 Admin Control	12	0
2	02/10 - 02/24	S9 Upload Certifications, S10 View Certifications, S11 Manage Certifications, S12 Admin Viewing Certifications, S7 Live Calendar	12	0
3	02/24 - 03/17	S8 Event Notes, S5 Adding Events to Calendar, S12 Certifications Filter/Search, S14 Communication Logs	18	0
4	03/17 - 03/31	S4 Event RSVP, S2 Viewing Event RSVPs, S15 Training Logs, S16 Adding Dog to Training Log, S18 Logs Filter/Search, S17 Editing Logs	19	0
5	03/31 - 04/14	S1 Viewing Upcoming Events, S6 Homepage View Event, S3 View Weather	06	0
		Total:	67	0

Table 3: Iteration Planning for Incremental Deliveries

5.2 Iteration/Sprint 1

5.2.1 Planning

[Which stories did you plan for this iteration/sprint. Add the total points for this plan. You can also explain the reason behind your planning, and what major feature(s) your team is focusing on delivering by completing these stories. You may use a table for a summary display of the planning, but elaborate in text more detail in your focus and feature plan.]

5.2.2 Work Done

[Which stories did you complete in this iteration/sprint. Which ones did you partially complete? Who worked on which story? You may elaborate in paragraph(s) to add more detail about the work done.]

5.2.3 Testing Coverage

[Testing is very important. Show your coverage here. Is this coverage good enough? Explain why you think so. Is it not good enough? Explain a plan to increase the coverage. You may also elaborate on why some artifacts do not undergo much testing. If the testing changed from the last iteration, explain the reasons.]
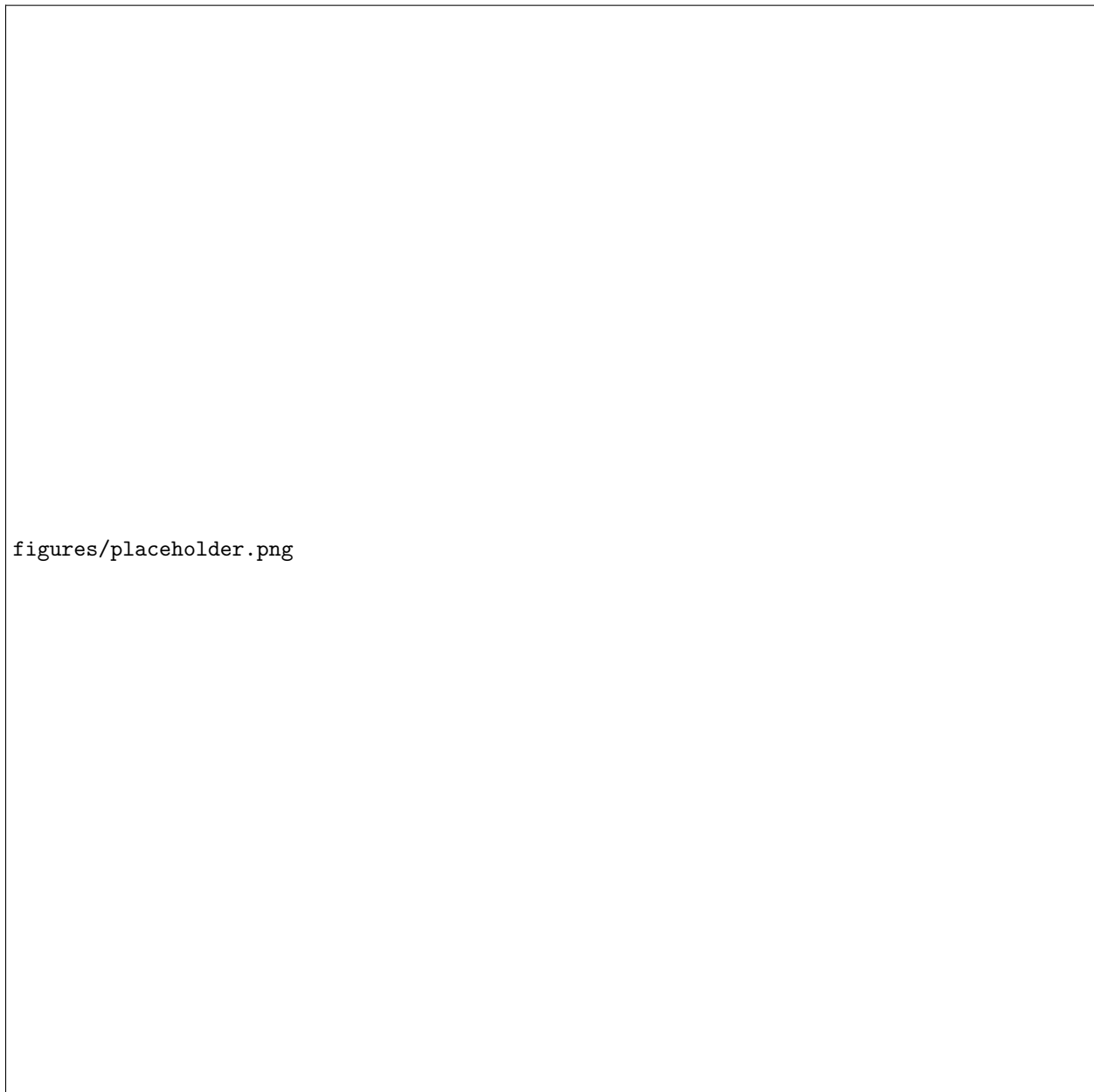
Figure 1 shows the test coverage

`figures/placeholder.png`

Figure 1: Iteration 1 test coverage report

5.2.4 Retroespective & Reflection

[What were the pitfalls, challenges, and issues you had in this iteration? How can you address them to improve the process in the next iteration? Did anything not go according to plan? Why so and how to avoid the same mistake? Write a personal reflection on what you learned in this iteration (even if a small technical thing like Database storage).]

5.3 Iteration/Sprint 2

5.3.1 Planning

[Which stories did you plan for this iteration/sprint. Add the total points for this plan. You can also explain the reason behind your planning, and what major feature(s) your team is focusing on delivering by completing these stories. You may use a table for a summary display of the planning, but elaborate in text more detail in your focus and feature plan.]

5.3.2 Work Done

[Which stories did you complete in this iteration/sprint. Which ones did you partially complete? Who worked on which story? You may elaborate in paragraph(s) to add more detail about the work done.]

5.3.3 Testing Coverage

[Testing is very important. Show your coverage here. Is this coverage good enough? Explain why you think so. Is it not good enough? Explain a plan to increase the coverage. You may also elaborate on why some artifacts do not undergo much testing. If the testing changed from the last iteration, explain the reasons.]

5.3.4 Retroespective & Reflection

[What were the pitfalls, challenges, and issues you had in this iteration? How can you address them to improve the process in the next iteration? Did anything not go according to plan? Why so and how to avoid the same mistake? Write a personal reflection on what you learned in this iteration (even if a small technical thing like Database storage).]

5.4 Iteration/Sprint 3

5.4.1 Planning

[Which stories did you plan for this iteration/sprint. Add the total points for this plan. You can also explain the reason behind your planning, and what major feature(s) your team is focusing on delivering by completing these stories. You may use a table for a summary display of the planning, but elaborate in text more detail in your focus and feature plan.]

5.4.2 Work Done

[Which stories did you complete in this iteration/sprint. Which ones did you partially complete? Who worked on which story? You may elaborate in paragraph(s) to add more detail about the work done.]

5.4.3 Testing Coverage

[Testing is very important. Show your coverage here. Is this coverage good enough? Explain why you think so. Is it not good enough? Explain a plan to increase the coverage. You may also elaborate on why some artifacts do not undergo much testing. If the testing changed from the last iteration, explain the reasons.]

5.4.4 Retroespective & Reflection

[What were the pitfalls, challenges, and issues you had in this iteration? How can you address them to improve the process in the next iteration? Did anything not go according to plan? Why so and how to avoid the same mistake? Write a personal reflection on what you learned in this iteration (even if a small technical thing like Database storage).]

5.5 Iteration/Sprint 4

[CS496 has 5 sprints. CS482 only has only 3 sprints (remove Iterations 4 and 5 from this doc if you are writing a doc for 482]

5.5.1 Planning

[Which stories did you plan for this iteration/sprint. Add the total points for this plan. You can also explain the reason behind your planning, and what major feature(s) your team is focusing on delivering by completing these stories. You may use a table for a summary display of the planning, but elaborate in text more detail in your focus and feature plan.]

5.5.2 Work Done

[Which stories did you complete in this iteration/sprint. Which ones did you partially complete? Who worked on which story? You may elaborate in paragraph(s) to add more detail about the work done.]

5.5.3 Testing Coverage

[Testing is very important. Show your coverage here. Is this coverage good enough? Explain why you think so. Is it not good enough? Explain a plan to increase the coverage. You may also elaborate on why some artifacts do not undergo much testing. If the testing changed from the last iteration, explain the reasons.]

5.5.4 Retroespective & Reflection

[What were the pitfalls, challenges, and issues you had in this iteration? How can you address them to improve the process in the next iteration? Did anything not go according to plan? Why so and how to avoid the same mistake? Write a personal reflection on what you learned in this iteration (even if a small technical thing like Database storage).]

5.6 Iteration/Sprint 5

5.6.1 Planning

[Which stories did you plan for this iteration/sprint. Add the total points for this plan. You can also explain the reason behind your planning, and what major feature(s) your team is focusing on delivering by completing these stories. You may use a table for a summary display of the planning, but elaborate in text more detail in your focus and feature plan.]

5.6.2 Work Done

[Which stories did you complete in this iteration/sprint. Which ones did you partially complete? Who worked on which story? You may elaborate in paragraph(s) to add more detail about the work done.]

5.6.3 Testing Coverage

[Testing is very important. Show your coverage here. Is this coverage good enough? Explain why you think so. Is it not good enough? Explain a plan to increase the coverage. You may also elaborate on why some artifacts do not undergo much testing. If the testing changed from the last iteration, explain the reasons.]

5.6.4 Retroespective & Reflection

[What were the pitfalls, challenges, and issues you had in this iteration? How can you address them to improve the process in the next iteration? Did anything not go according to plan? Why so and how to avoid the same mistake? Write a personal reflection on what you learned in this iteration (even if a small technical thing like Database storage).]

6 Final Remarks

6.1 Overall Progress

[Have you completed everything? If so, present evidence on how you brought value to your client, and the overall client satisfaction. Otherwise, estimate how much progress you done and how long it would take to finish this project. Be concrete about your progress, you know how many story points your software is, how many points you completed (this shows your progress). You also how many points your team delivers at each iteration, therefore you can estimate how many more iterations it would take to finish the leftover points (show the math).]

6.2 Project Reflection

[Your personal reflection on the project. What lessons did you learned. What would you have done differently? How can you do better work in future projects? You may write this as a team or per person (or both — if all your iterations were team reflections, then it would be better to write individual reflections here)]

Appendix

[Appendix section if needed]