Red Pandas Process Report

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1. Introduction

We are working for a newly created Zoo in Eindhoven to help them im prove their management and efficiency. We will be creating a Windows Forms Application and Razor Pages to implement the solution.

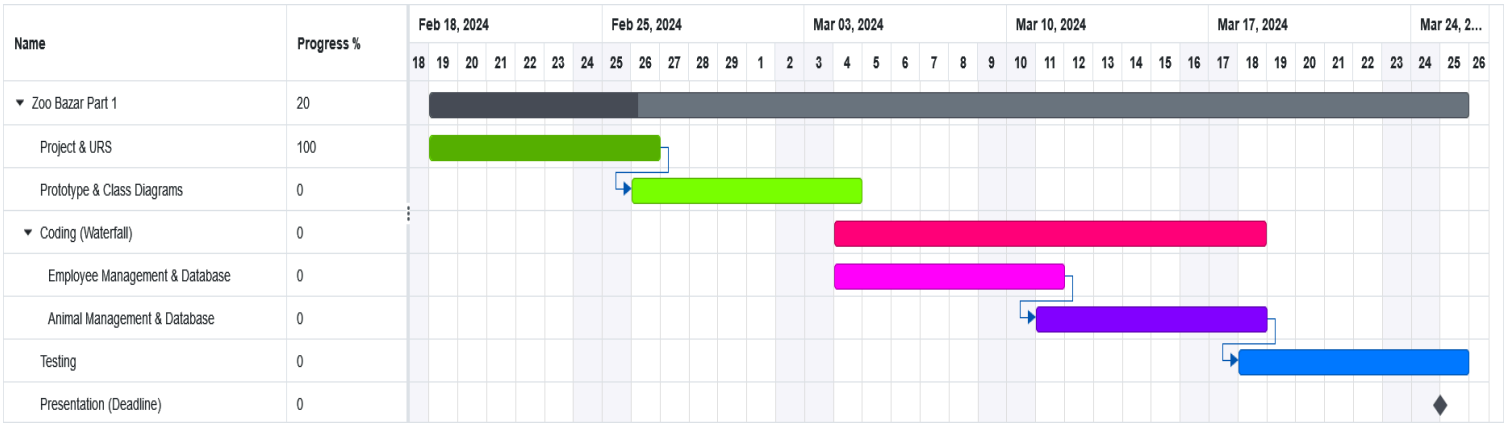
The initial focus of the administrative system is on managing employees and animals, with a priority on ensuring the welfare of the animals. The system should allow for the management of employee attendance, scheduling, and tasks related to animal care such as feeding schedules, location tracking, and health check-ups. Additionally, the system should provide functionalities for creating timetables and assigning tasks to employees, with the eventual goal of automation where possible.

The system is expected to evolve over time, with potential future enhancements including features like online ticket sales, performance statistics, customer complaint handling, and an employee website for accessing personal information and schedules. However, for the initial phase, the main focus is on developing functionalities related to employee and animal management to meet the immediate needs of Zoo Bazaar.

2. Overview of the Process

For the first few weeks, we worked on documentation. From the Project Plan to the URS, from the URS to the UML and then back to the URS. After 3-4 weeks we finally started coding while we kept updating the UML.

Towards the last 2 weeks of the project, we went into overdrive coding and integrating the different parts of our project together.



Week 12:

After the last presentation in Week 6 we reviewed our project, workflow and choose a couple of points to focus on.

We changed our workflow to 2-week Agile sprints which worked well, this is further discussed in the next following section (Section 3.Methodology). We also adopted some code standards and have been using them, particularly in our WInForms Application.

Database, Winforms, WebApp,

We started by renovating our WinForms from the ground up. We changed its layout, style and structure, all the while implementing a basic & crude DB connection. By the end of this sprint we had a practically new Desktop App with a slick design and fully functional locally. The DB connection was still causing problems.

Then turned our attention to the WebApp and finishing touches. As the saying goes, *when you're 90% done, there is 90% to go*. The Desktop App, although much better than before, still had some bugs, details to fix and options we thought we should add, such as better filtering and searching options. The WebApp on the other hand had a lot of behind the scene work done on it, a standard layout and styling created, a navigation system implemented and an authentication framework integrated.

Week 15:

After the last presentation in Week 12 we reviewed our project, workflow and choose a couple of points to focus on.

We started by renovating our back end from the ground up. We remade the Database connections, interfaces and most of the logic. This took the majority of this Sprint.

At the same time, we also started planning our Algorithm and fixing the enormous amount of bugs that appeared with the new changes.

The Desktop App hasn't changed that much from the design perspective. The logic still has some minor bugs to fix and options we thought we should add.

Week 17:

After the last presentation in Week 15 we reviewed our project, workflow and choose a couple of points to focus on.

We revised our Database and WinForms, fixing a lot of bugs in the process. We also implemented a basic version of the ScheduleMaker and changed some classes around to allow for a better, more modular, schedule creation. This included adding better Repetition information for tasks and Day & Night Shifts.

FInally, we worked on the website by adding a better login & logout page/system and a profile page.

3. Methodology

For this project, we decided to work using the Waterfall methodology. In this project, there is a clear understanding of the client's requirements from the outset. With well-defined requirements, the Waterfall methodology is suitable as it emphasises thorough upfront planning and documentation before implementation begins. Waterfall provides a structured framework for project management, with distinct phases. This structured approach aligns well with the project's timeline and deliverables, allowing for systematic progression through each phase.

The client's expectations for the project are primarily focused on delivering a functional administrative system within a specified timeframe. The Waterfall methodology allows for clear milestone planning and progress tracking, which helps manage client expectations effectively throughout the project lifecycle. The project aims to provide students with hands-on experience in planning and executing a software project using a specific methodology. By selecting Waterfall, students have the opportunity to learn and apply the principles of sequential project management, which is valuable for understanding traditional software development approaches.

Week 12 & 15:

From week 6 we switched to the Agile methodology. In this project, there is a clear understanding of the client's requirements from the outset. Due to the change to the Agile methodology we are able to see what the difference and if we prefer having meeting with the client more often to get an even clear view on what the client is expecting. With well-defined requirements and meetings every two weeks, the Agile methodology is suitable as it emphasises thorough planning and documentation during implementation begins. Agile provides a structured framework for project management, with distinct phases. This structured approach aligns well with the project's timeline and deliverables, allowing for systematic progression through each phase.

The client's expectations for the project are primarily focused on delivering a functional administrative system within a specified timeframe. We have started using Trello to better plan out what tasks need to be done first and what can be left for later. The Agile methodology allows for clear milestone planning and progress tracking. Frequent meetings help manage client expectations effectively throughout the project lifecycle. The project aims to provide students with hands-on experience in planning and executing a software project using specific methodologies. By selecting Agile, simillarly to the Waterfall, students have the opportunity to learn and apply the principles of sequential project management, which is valuable for understanding traditional software development approaches.

Week 17:

We changed our workflow slightly this week. With one less project to worry about and a nearing deadline we implemented our own miny deadlines every two days as well as stand up meetings about our progress.

It improved our progress by a lot.

4. Detailed Description of the Process

- Requirement Gathering and Analysis:
    - Detailed discussions with stakeholder from Zoo Bazaar to understand their management needs and priorities.
    - Analysis of existing processes and systems (if any) to identify pain points and areas for improvement.
    - Consideration of potential variations or alternatives in system design based on different requirements and preferences.
- System Design and Architecture:
    - Creation of a system architecture plan outlining the overall structure of the administrative system, including the Windows Forms Application.
    - Detailed design of database schema to store employee and animal data, task assignments, location etc.
- Development of Core Functionalities:
    - Implementation of employee management features, including data, contract data attendance tracking, and scheduling functionalities.
    - Implementation of animal management features and development of animal management functionalities, such as feeding plans, location, and medical records.
    - Implementation of location management features, including data.
    - Creation of task assignment mechanisms to facilitate efficient distribution of responsibilities among employees.
- Timetable Creation and Task Assignment:

    - Integration of timetabling features into the system, allowing for the creation and management of schedules for both employees and animals.
    - Implementation of task assignment functionalities, enabling managers to assign specific tasks to employees based on their roles and availability.
    - Evaluation of alternative scheduling algorithms or methodologies to optimise task assignments and timetable creation.

Week 12:

- Development of Core Functionalities:
    - Created and implemented Coding standards for improved code legibility
    - Improved the employee management features, including data, contract data.
    - Improved the animal management features and development of animal management functionalities, such as feeding plans, location, medical records and relations.
    - Improved the location management features, including data.
    - Improved the task assignment mechanisms to facilitate efficient distribution of responsibilities among employees.
    - Crude DB connection
- WebApp Development
    - Created Base WebApp
    - Added Login Functionality
    - Created Index and added content
    - Styled Pages with same colour palette as WinForms
    - Added blank placeholder pages
- WinForms Revamp
    - Switched to Tab System
    - Restyled the Forms
    - Fixed Errors
- Requirement Gathering and Analysis(Meetings with the client):
    - Detailed discussions with client every 2 weeks to understand if we were heading in the right direction and receive feedback
    - Analysis of existing processes and systems (if any) to identify pain points and areas for improvement

Week 15:

- Algorithm:

- Client Feedback - Detailed discussions with client every 2 weeks to understand if we were heading in the right direction
- UML Diagram to plan, clarify & understand how the algorithm will work. Checked by Client and modified according to feedback received

Week 17:

- Schedule:
  - First version - A prototype version that generates tasks automatically and assigns them to the correct day evenly spaced out
  - Client Feedback - Detailed discussions with the client to check our vision for the Schedule Maker matches theirs
- WinForms Improvements:
  - Removed unnecessary validation.
  - Added validation to Login
  - Organised the logic and data layers to work with the new and improved database.
  - Implemented and fixed all the searches and filters in the main page form.
- WebApp:
  - Created log-out and profile page.
  - Employees can log in to their accounts.

5. Results and Reflection

The deliverables were lacking. Some of the functionality we expected to deliver was missing and some of the functionality we delivered was prone to errors. However, we did focus on the right functionalities and the client was able to see our vision and how we wanted to implement a solution to their problems.

Our process was not cohesive and so our product looked like four small projects stuck together. We also focused too much on planning and designing which made us lack time to code and integrate. As a result, our product lacked polish and was error-prone.

In the future we should manage our time better, respect deadlines more and focus more on the big picture (the whole application running as one). We should also work together more and base our work on templates, standards and colour palettes so that the end product is more cohesive.

Week 12:

We have successfully met the deliverables for our most recent deadline. However, several tasks remain outstanding, including the development of algorithms for scheduling and shifts. Additionally, we need to implement the deadline functionality and expand the web application. For the Windows Forms, some finishing touches are required, and we need to scale expenditure appropriately.

Our process has been more cohesive compared to previous deadlines, and the project now presents a unified front. However, we did not allocate sufficient time to the group project, as our focus was predominantly on individual projects, compounded by a vacation period.

Moving forward, it is imperative that we dedicate more time to our collective tasks and avoid procrastination. We must consistently meet the client's requirements and ensure timely completion of all project components.

Week 15:

We have not successfully met all the deliverables for our most recent deadline. Even though we have added and fixed a lot of issues, several tasks remain outstanding, including the development of algorithms for scheduling and shifts. Additionally, we still need to implement functionality and expand the web application. For the Windows Forms, some finishing touches are required, and we need to fix some bugs.

We did not allocate sufficient time to the group project, as our focus was predominantly on individual projects, compounded by a vacation period.

We haven't done much for the WebApp but we are planning to focus on it more in the next sprint. In retrospect, we should have spent more time on it.

Moving forward, we must dedicate more time to our collective tasks and avoid procrastination. We must consistently meet the client's requirements and ensure timely completion of all project components.

Week 17:

We reached our goals and implemented a basic version of the deliverables we could show to the client and get feedback from. Although we are on a tight deadline it is completely achievable and in our view.

What improved our productivity a lot this sprint was the pressure of the deadline, no individual project to take our attention away as well as our improved organisation and workflow. We have deadlines every two days as well as stand up meetings about our progress.

6. Conclusion

Our presentation was successful and fulfilled the goal of informing our client of our current progress but our project was a bit lacking in features that we originally wanted to implement in our solution.

In the future, we will implement the changes we mentioned in the “Results and Reflection” section as well as the Agile methodology and other things we will learn in this phase of the semester.

Week 12:

Our presentation was well received and fulfilled the goal of informing our client. Even though we solved many problems, our project was still lacking in features that we originally wanted to implement in our solution.

In the future, we will implement the changes we mentioned in the “Results and Reflection” section as well as the Agile methodology and other things we will learn in this phase of the semester.

Week 15:

For the final sprint, we will dedicate more time to the group project. Delegate the work and create concrete, measurable goals we can use to check progress and show progress, as well as reflect upon at the end.

Week 17:

For this last meeting before the final deadline, we prepared much better than for the sprints before, and our presentation was well received. We were able to focus more on the group project which resulted in better planning and better ideas for the final project.

For the final Presentation, we will finish off the main deliverables (Schedule Maker, website, etc.) and polish the final application. Additionally, we will add good example data to show off our product and work on the accompanying documentation.

Week 18 - Looking at our project

Looking back:

During our first presentation in Week 6, we gained valuable insights. After examining our project and workflow, we identified key areas for improvement, allowing us to make meaningful progress. We undertook a comprehensive overhaul of our WinForms, refining its layout, style, and structure, while also establishing a basic and rudimentary database connection.

In the later sprints, our team dedicated significant attention to managing our Database connections, refining interfaces, and implementing most of the core logic for our project. This phase required the majority of our efforts across a couple of sprints. Additionally, we initiated the planning process for our Algorithm at the time.

During the last sprint, we delved into detailed discussions surrounding the final modifications that we needed to implement as well as the changes we desired to make. Importantly, we engaged in thorough consultations with both the client and the tutor during our concluding sprint meeting to ensure alignment and clarity.

Looking forward:

Throughout this project, we have gained numerous valuable insights. As a team, we have worked on our ability to collaborate and have become more adept at seeking assistance when necessary. While we encountered obstacles along the way, we consistently demonstrated our capacity to come together and come up with effective solutions. Looking ahead, we acknowledge the need for more comprehensive planning and thorough discussions regarding the aesthetic and functional aspects of our work.

Toward the project's conclusion, we implemented regular stand-up meetings, which proved highly beneficial. These meetings provided visibility into each team member's progress and facilitated the identification of areas requiring assistance. Embracing this approach from the project's onset would have mitigated unnecessary conflicts and streamlined our progress significantly.