Wags and Purrs

System Proposal

Wags and Purrs

CIS 454 Fall 2022

James Madison University

Broadridge Consulting:

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TO: Taylor Bishop (Owner/GM)

CC: Amanda Carter (Receptionist/Clerk), Ryan Clark (Animal Care and Boarding)

FROM: Devin Roche (Project Manager)

DATE: November 8, 2022

SUBJECT: Finalized System Proposal

With over 30 years in business, Broadridge Consulting has a strong track record of implementing web-based systems for small, medium, and large sized businesses. Our IT team is made up of expert project managers, software engineers, business analysts, implementation specialists, and user interface designers that will enable Wags and Purrs to become a more technologically integrated business while achieving their organizational goals.

Our proposal, as laid out below, highlights and summarizes the methodologies utilized to gather system requirements, the functional and non-functional requirements that were discovered as a result of our research, business process models highlighting the procedural changes that will occur as a result of the implementation of our proposed system, use-case diagrams and descriptions displaying essential system uses, a problem-domain structural model providing a high-level overview of relationships within the system as well as their capabilities, and finally our recommendations for moving forward with our proposed system.

Our team has completed project planning and is currently finalizing the analysis of as-is and to-be business processes. After gathering initial requirements, receiving feedback from staff and customers, and refining functional/non-functional capabilities of the proposed system, we are pleased to present Wags and Purrs with our finalized system proposal.

We will work to ensure the implementation of our proposal remains within the 6-month scope and that all measures will be taken to ensure a smooth transition to the new system. Following the acceptance of our system proposal, we will begin the design and implementation phases of the project. To discuss next steps, please contact +1 (703)-677-6187.

Thank you,

Devin Roche

Project Manager

Broadridge Consulting

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Introduction

Broadridge Consulting is currently engaged in a pet-care systems modernization effort for Wags and Purrs. Struggles currently being faced include outdated records-keeping procedures, lack of standardized communication/reports, and the inability for customers to perform administrative tasks online. Broadridge Consulting has performed extensive research and gathered requirements from both staff and customers to ensure our system meets the needs of all potential users.

Our proposed system will enable Wags and Purrs to track pets, services, and boarding while providing a user-friendly interface from a convenient online portal that will **enable customers to:**

- Enroll their pets
- Schedule services
- View summarized reports of past services, bills, and pet-health records
- Find out additional information about Wags and Purrs

As a result of continuing with the system proposed by Broadridge Consulting, we believe that **Wags and Purrs will greatly increase their ability to:**

- Efficiently manage records/information
- Reduce long-term salary expenses
- Increase their customer base and revenues
- Increase business efficiency
- Increase employee focus

We plan to transfer hand-written records and data stored on legacy systems into the proposed web system. Additionally, Zoho Books will be integrated into the system to maintain the financial capabilities already in place at Wags and Purrs. In an effort to make the transition to our proposed system as seamless as possible, we will provide employees with in-person training lessons as well as video tutorials for common tasks that take place in the system. We will notify customers prior to the deployment of the new system and provide training materials as well.

The system proposal laid out in this document will enable Wags and Purrs to become a more technologically integrated business while succeeding in their mission of putting customers and pets first as well as providing the quality care they deserve.

Requirements Gathering

Interviews

The first technique utilized to gather requirements was a set of employee interviews. We conducted these interviews through identifying two users whom we believed had the most important insights (Taylor Bishop: GM & Amanda Carter: Receptionist) and asking them questions about the current system and what they needed it to be able to do. By creating an interview plan we ensured that we had follow-up questions for answers we had anticipated. These interviews gave us insight on some of the more specific requirements as well as a large picture of the current pain points in the system, and what we should do to try and fix them. Overall, we analyzed the answers given to us by the two users and determined either the root cause of why these were issues or simply how to fix them for their desired system.

Customer Questionnaire

Broadridge consulting sent out a questionnaire to all of Wags and Purrs customers. The questionnaire included a detailed description of the contents and the purpose of the survey as an effort to ensure timely and serious responses. The questionnaire was created to help answer broad questions about larger aspects of the system. The resulting response sets had their answers compiled in a way where we could see any large irregularities in the context of each question. Through this we were able to narrow down some of the basic desired functionality, look and feel for end users.

Document Analysis

Broadridge consulting also conducted document analysis to aid in the requirement gathering process. We did this to ensure that all current forms and reports are efficient in terms of the questions they pose, and the answers that are input. By doing this it helps ensure that the forms are thoughtful and necessary to business functions. The document analysis revealed some strong aspects to the current forms while also shining a light on some questions that needed to be reworded / removed. Through this we were able to ensure that the forms and reports being generated by Wags and Purrs were relevant to their business processes.

Requirements

The following requirements were gathered using the techniques explained above (interviews, questionaries, document analysis). Functional requirements provide processes that the system has to perform and/or the information that it needs to contain. Nonfunctional requirements refer to the behavioral properties that the system must have. All current requirements listed will be implemented within the project scope and budget.

System Functional Requirements

1. Owners and the Receptionist will need to be able to create and enroll an account on the system.
2. The Receptionist and owners will need to be able to enroll multiple pets on to the account.
3. The Receptionist and pet owners will need to be able to make an appointment for their enrolled pets for different services.
4. The Receptionist will need the ability to review and produce a daily schedule while also having the ability to change the schedule.
5. Staff will need the ability to add and update online pet records.
6. Staff and management will need the ability to add and read care reports
7. Staff and management will need the ability to add and read Pet Health Records
8. Management will need the ability to add and update financial records
9. Management will need the ability to add and push marketing items

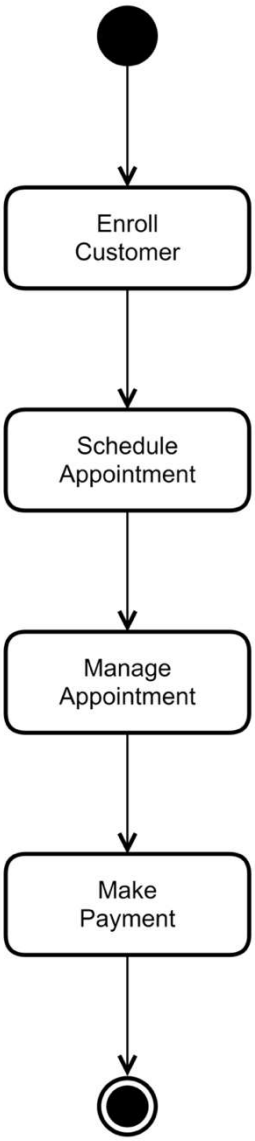
Non-Functional Requirements

1. Pet care reports will need the ability to be accessed by a mobile app for drivers
2. Financial reporting will need to be done and accessed through Zoho books
3. The marketing management system will need to be able to run automatically
4. This system will also run on a web-based platform to be accessed onsite or anywhere

All functional and non-functional requirements laid out above will be addressed in our proposed system. As development is underway, any additional requirements Wags and Purrs would like implemented into the new system must be communicated to Broadridge Consulting. Should additional system requirements be requested, project scope and economic feasibility will be reassessed and a decision to move forward or not will be discussed with Wags and Purrs.

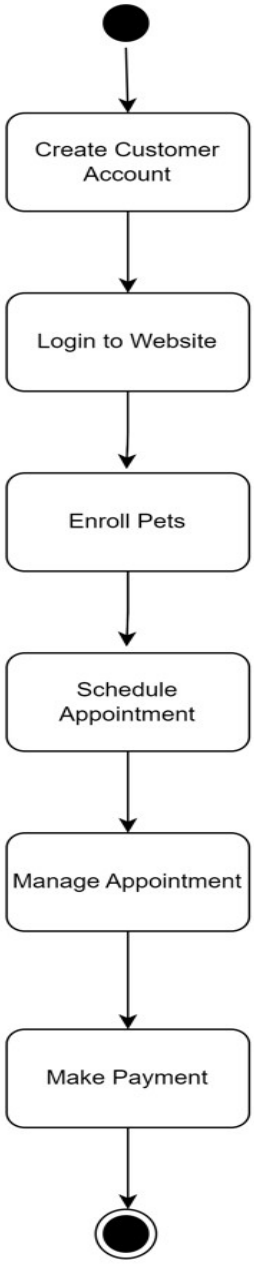
As-Is and To-Be System Process Models

High-Level Activity-Diagram for the Current (As-Is) Pet Care System



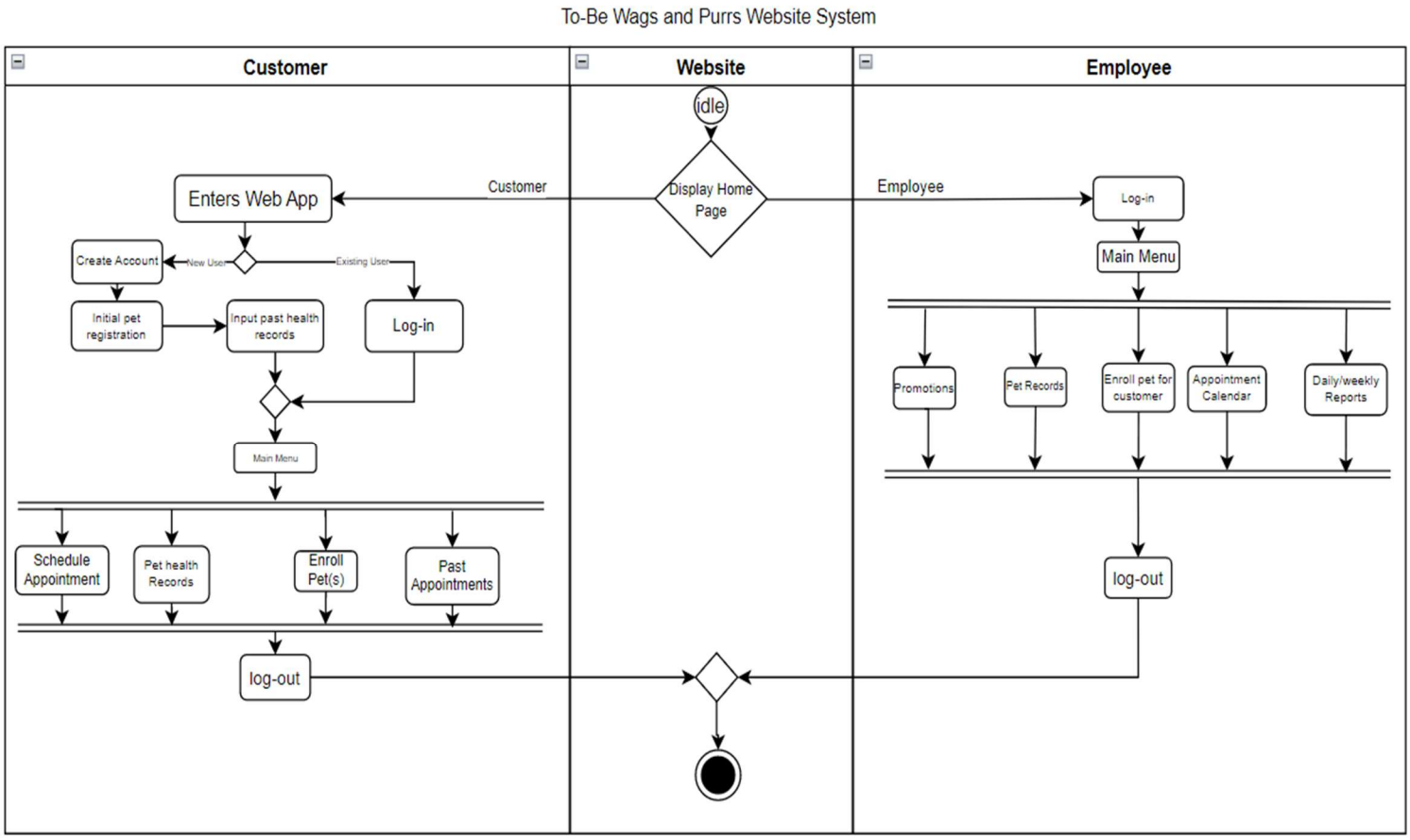
The model above depicts a high-level viewpoint of the procedural flow of the receptionist's duties. All processes are currently being done manually, either when a customer enters Wags and Purrs or calls over the phone. The manual nature of these processes has caused work backup, unnecessary distractions, and overall inefficiencies. By implementing a web-based system, many of these processes will become automated, saving time and money for Wags and Purrs while making customer and staff lives easier.

High-Level Activity-Diagram for the Future (To-be) Pet Care System



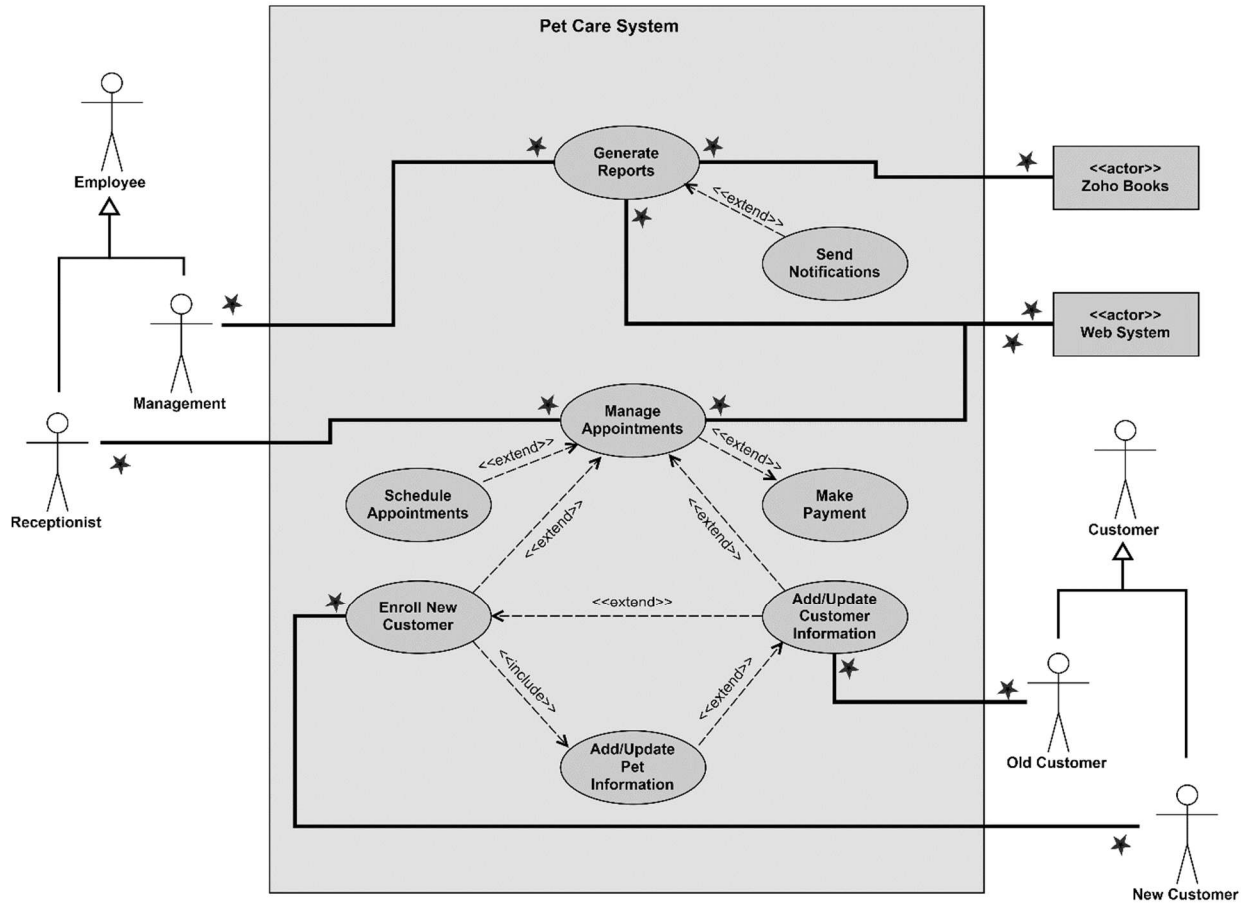
The High-level Activity Diagram depicted above represents the actions that will be performed once our new web system is fully integrated. The purpose of this activity diagram is to show the key actions customers will perform and the order in which they happen while interacting with the Wags and Purrs web system. Having a web system will allow customers to enter their own information, streamlining the process of customer enrollment and appointment scheduling. This will improve Wags and Purrs organizational problems along with customer satisfaction.

Low-Level Activity Diagram for the Proposed (To-Be) Website System



The diagram above is a low-level activity diagram showing the process of the web system that will be created. The purpose of this diagram is to illustrate the key functions of the web system while displaying the chronological order these functions are performed. This diagram also shows the differences between a customer interacting with the web system in comparison to an employee. The meaning of this new to-be system is to show a distinction between the customer, website, and employee utilization while improving inefficiencies from the old system and making the system easier to use.

Use-Case Diagram of the System



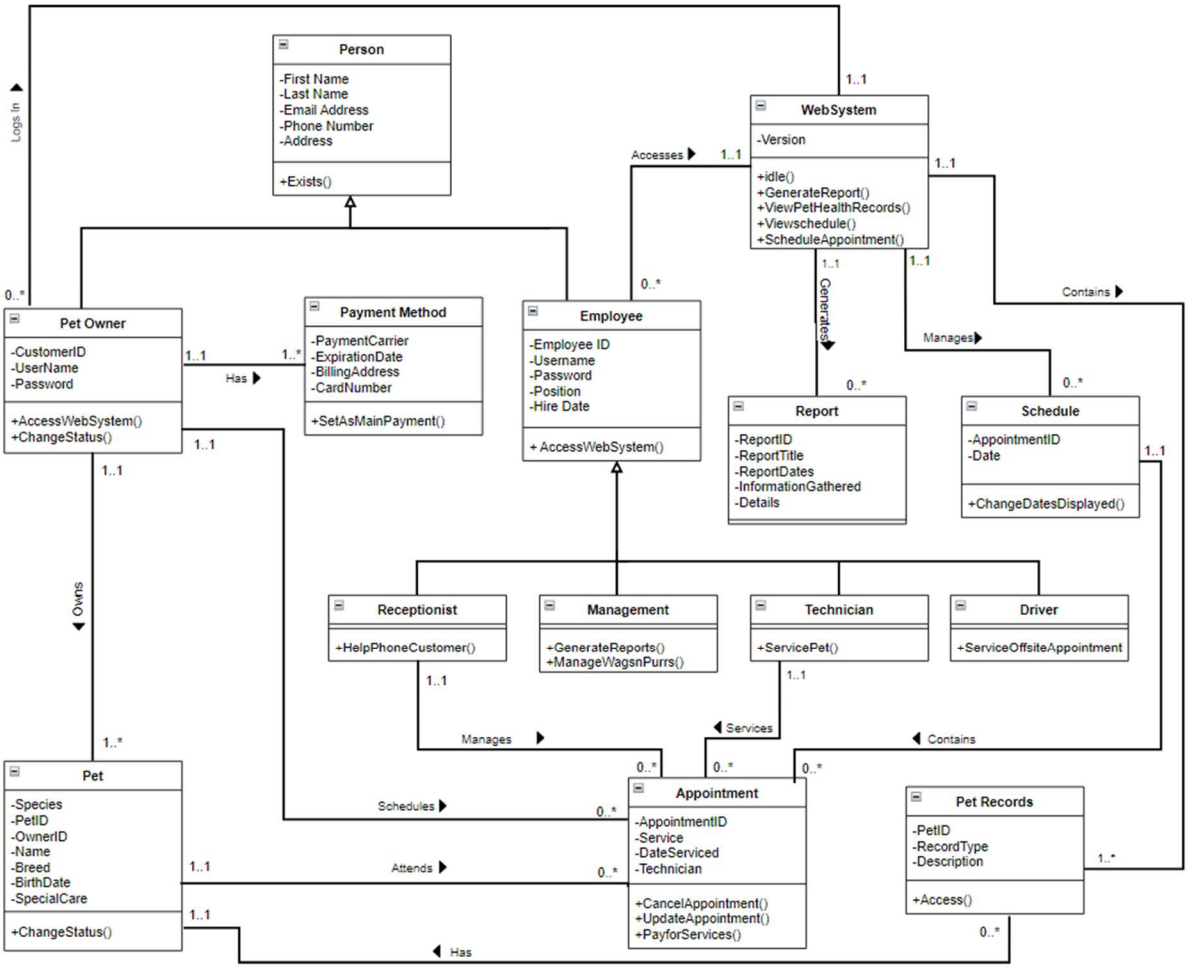
The purpose of this diagram is to show the functional requirements and the actors associated with them. The result of this diagram is that we can understand the responsibilities of each actor and verify with the customer who will have access to the different requirements of the system. The meaning of this diagram shows the separations of new and old customers and the functionality each will have while also showing a distinction of the receptionist actor and our Web System. Each of the ovals depicts a Use case, these are each discussed thoroughly in the appendix. A Use case describes a potential series of events or a behavior that takes place within the system, for example, when a receptionist would like to manage appointments, they can help a customer make a payment, or schedule a new appointment/modify existing appointments. This is all depicted through the <<extend>> from manage appointments to make payment and so on. If an existing customer chooses to enroll a new pet, the use case “Enroll New Customer” is performed, whereas if the customer were to want to add or update information to an existing pet, the “Add/Update Pet Information” use case is then performed.

Use Case Description for "Enroll New Customer" Use-Case

Use Case Name: Enroll New Customer	ID: 3	Importance: High
Primary Actor: New Customer	Use Case Type: Detail, Essential	
Stakeholders and Interests: New Customer – Wants to enroll pet owner and/or their pet in the system Receptionist – Ensure that new customers are enrolled in the system Web System – Ensure that new customers are enrolled and stored in the system		
Brief Description: This use case describes how a new customer can enroll in the Wags and Purrs' system for pet care services.		
Trigger: New customer wants to enroll in the system Type: External		
Relationships: Association: New Customer, Receptionist Include: Add/Update Pet Information Extend: Manage Appointments Generalization: Customer		
Normal Flow of Events: 1. New customer calls Wags and Purrs to enroll 2. Receptionist provides the Pet Enrollment Form to the customer 3. The new customer provides basic information If the pet owner and pet are both not enrolled, The S-1: enroll new owner and pet subflow is performed If the pet owner is already enrolled and wants to enroll a new pet, The S-2: enroll new pet subflow is performed 4. The receptionist fills out the Pet Enrollment Form with the provided information		
Subflows: S-1: Enroll new owner and pet 1. The new customer provides basic information about themselves and their pet S-2: Enroll new pet 1. The new customer provides basic information about their new pet		
Alternate / Exceptional Flows: N/A		

Pictured above is a Use Case Description, which is used to describe the process in which each of the use cases depicted in the use case diagram behave. Throughout a use case description, it is described in detail under which circumstances each process is evoked. In this case, when a new customer approaches Wags and Purrs, they will first need to enroll as a new customer, hence the use case and this description. Normally a customer can enroll via the application, however, some may choose to enroll through the phone and this description shows that process. Depicted in the description are the main actors, and stakeholders, as well as the relationships that this use case holds with other use cases. For the "Enroll New Customer" use case, it is associated with the customer, receptionist, and web system. The use case extends the option to "Manage Appointments" and includes the "Add/Update Pet Information" use case. The *Include* relationships mean that the use case in question is mandatory when performing the parent use case. These use case descriptions and others in the appendix result in a clearer understanding of the system interactions through the use case diagram of the newly created system.

Problem-Domain Structural Model (Class Diagram) for Wags and Purrs



The diagram above is a class diagram, which serves as a structural model that represents the objects of the system and their relationships, which illustrates the people, places, or things about which information is captured and how they are related to one another. The purpose of the class diagram is to illustrate the key data contained in the problem domain, where the problem domain is an outline of Wags and Purrs business domain activities.

The meaning of the class diagram is derived from the items provided in the diagram, which are classes, attributes, operations (methods), and relationships. A class is represented by the boxes and is used as a template for demonstrating the instances of people, places, or things with the system for Wags and Purrs. Each class (box) has attributes in the row directly below the title, and operations shown below the attributes. Attributes represent a piece of information that is relevant to the description of the class, which contains information that the system should keep track of. Each attribute listed in the diagram are private attributes depicted by the "-" immediately preceding the description, meaning that the information is hidden from all other classes. The operations define the behavior of the class and describe the actions to which the instances of the

classes are capable of responding. Whereas the attributes are private as shown by the "-", the operations are designated as public through the "+" which demonstrates they are visible to the other classes. Lastly, relationships are shown through the lines connecting the different classes and indicate how they interact with one another.

An example of a class in the diagram is "Pet Owner", which has attributes such as "-CustomerID" which uniquely identifies each customer in Wags and Purrs' system. An operation (method) for the "Pet Owner" class can be seen through the "+ChangeStatus()", which depicts the ability of the system to change the status of a customer from active to inactive. The class has a relationship with the "Pet" class, indicating that a pet owner "owns" one to many pets (1..*), while pets can only have one owner (1..1). The arrow next to the relationship name "owns" indicates the direction of the relationship between the classes. Additionally, the "Pet Owner" class participates in an association relationship with a hollow arrow end to a more generalized class "Person" with the other participating class being "Employee". The purpose of this more generalized class is to reduce redundancy between similar classes, by listing common attributes and operations that are inherited by the connected specialized classes. Thus, rather than listing common attributes and operations for each class multiple times, these can be listed in the generalized class and left out of the specialized classes.

A major result of this diagram is a demonstration of how the to-be web system will interact with the different users, reports, and appointments that are involved in Wags and Purrs business activities. The web system generates multiple types of reports, manages schedules, contains appointments and pet records, and is accessed by different types of users such as pet owners and employees of Wags and Purr

Conclusions and Recommendations

Wags and Purrs' current system for processing customers, pets, and data is outdated and requires a complete overhaul. Processes like customer enrollment, appointment scheduling, and report storage are being done manually by receptionist, Amanda Carter. The need for an integrated web-based system to automate and simplify many of the processes listed above is apparent.

Broadridge Consulting has performed extensive research and analysis of Wags and Purrs current systems, employee pain points, system requirements, and feasibility. Our proposed web-based system will position Wags and Purrs to become a more technologically integrated business and improve overall business efficiency. By providing staff and customers with login credentials, they will have access to their respective employees, customer, and pet profiles. Within the system, users will be able to schedule appointments, update information, generate reports, push important marketing promotions and more. Wags and Purrs' current financial software, Zoho Books, will also be integrated into the proposed system to ensure no data is lost.

Following the planning and analysis that we have performed, Broadridge Consulting can confidently recommend the implementation of our proposed system. By moving forward with our solution, Wags and Purrs will be choosing to put customers and their pets first, while continuing to grow their business and revenue.

Appendix

Use Case Description for the "Add/Update Customer Information" Use-Case

<table>
<tr><td>Use Case Name: Add/Update Customer Information</td><td>ID: 1</td><td>Importance: High</td></tr>
<tr><td>Primary Actor: Customer</td><td colspan="2">Use Case Type: Detail, Essential</td></tr>
<tr><td colspan="3">Stakeholders and Interests:

Customer – Wants to add or update their own information

Receptionist – Monitors and manages changes to customer information</td></tr>
<tr><td colspan="3">Brief Description: This use case describes how a customer can add or update their information in the web-based system or over the phone.</td></tr>
<tr><td colspan="3">Trigger: Customer has new information about themselves that must be communicated

Type: External</td></tr>
<tr><td colspan="3">Relationships:

Association: Old Customer, Receptionist, Web System

Include: N/A

Extend: Schedule Appointments, Enroll New Customer

Generalization: N/A</td></tr>
<tr><td colspan="3">Normal Flow of Events:

1. Customer has updated/new information about themselves
If a customer wants to update information over the phone,
The S-2: phone update subflow is performed
2. Customer logs into web system
3. Customer navigates to "people" section of their account profile
4. Customer updates/adds their information
5. Customer saves the changes to their profile
6. Web System notifies receptionist of changes
7. Receptionist reviews changes
If changes are mission-critical,
The S-2: notify staff subflow is performed
8. Receptionist marks changes as reviewed</td></tr>
<tr><td colspan="3">Subflows:

S-1: Phone update

1. Customer calls Wags and Purrs
2. Receptionist answers call and enters updated customer information into the system
3. Receptionist performs duties listed in events 7 and 8

S-2: Notify staff

1. Receptionist communicates updated information with related staff</td></tr>
<tr><td colspan="3">Alternate / Exceptional Flows: N/A</td></tr>
</table>

Use Case Description for the "Add/Update Pet Information" Use-Case

Use Case Name: Add/Update Pet Information	ID: 2	Importance: High
Primary Actor: Customer	Use Case Type: Detail, Essential	

Stakeholders and Interests:

Customer – Wants to add or update their pet's information

Receptionist – Monitors and manages changes to customer's pet information

Brief Description: This use case describes how a customer can add or update their pet's information in the web-based system or over the phone.

Trigger: Customer's pet has new information that must be communicated

Type: External

Relationships:

Association: Old Customer, New Customer, Receptionist, Web System

Include: N/A

Extend: Enroll New Customer, Add/Update Customer Information

Generalization: N/A

Normal Flow of Events:

1. Customer has updated information about their pet
   If a customer wants to update their pet's information over the phone,
   The S-2: phone update subflow is performed
2. Customer logs into web system
3. Customer navigates to "pets" section of their account profile
4. Customer updates their pet's information
5. Customer saves the changes to their profile
6. Web System notifies receptionist of changes
7. Receptionist reviews changes
   If changes are mission-critical,
   The S-2: notify staff subflow is performed
8. Receptionist marks changes as reviewed

Subflows:

S-1: Phone update

1. Customer calls Wags and Purrs
2. Receptionist answers call and enters customer's updated pet information into the system
3. Receptionist performs duties listed in events 7 and 8

S-2: Notify staff

1. Receptionist communicates updated pet information with related staff

Alternate / Exceptional Flows: N/A

Use Case Description for “Send Notification” Use-Case

Use Case Name: Send Notification	ID: 4	Importance: Medium
Primary Actor: Web System	Use Case Type: Detail, Essential	
Stakeholders and Interests: Web System – determines whether a notification is needed		
Brief Description: This use case describes the process of sending a notification following the generation of a report		
Trigger: A report gets generated by the Web System Type: External		
Relationships: Association: Web System Include: N/A Extend: Generate Reports Generalization: N/A		
Normal Flow of Events: 1. A report is generated If a notification is not warranted, The S-1: Don’t Send Notification sub flow is performed 2. The Web System creates the notification to be sent 3. The Web System sends the notification following the generated report		
Subflows: S-1: Don’t Send Notification 1. The Web System does not create the notification 2. The Web System does not send a notification		
Alternate / Exceptional Flows: N/A		

Use Case Description for the "Generate Reports" Use-Case

Use Case Name: Generate Report	ID: 5	Importance: High
Primary Actor: Zoho Books	Use Case Type: Detail, Essential	
Stakeholders and Interests: Web System – Creates a central place for reports to be viewed Zoho Books- Is used as a system to generate the reports through data passed from the system. Management – Requests a report through the web system		
Brief Description: This use case describes the process of generating a report which is completed by the Web System.		
Trigger: Management asks for a specific report for a date or range of dates. Type: External		
Relationships: Association: Web System, Management, Zoho Books Include: N/A Extend: Send Notifications Generalization: N/A		
Normal Flow of Events: 1. Management requests a report 2. The web system sends the required reporting information to ZohoBooks 3. Zoho Books generates the report and sends back to the system 4. The system posts the generated report on reports page for receptionist and management to view 5. Management receives a notification if requested and views the generated report		
Subflows: N/A		
Alternate / Exceptional Flows: N/A		

Use Case Description for "Manage Appointments" Use-Case

Use Case Name: Manage Appointments	ID: 6	Importance: High
Primary Actor: Customer	Use Case Type: Detail, Essential	
Stakeholders and Interests: Customer – Would like to make changes to an existing appointment or create a new appointment		
Brief Description: This use case describes how a customer can go about managing an appointment, to schedule, update, cancel and pay for an appointment.		
Trigger: Customer needs creating or changing an existing appointment Type: External		
Relationships: Association: New Customer, Old Customer, Receptionist, Web System Include: N/A Extend: Schedule Appointment, Make Payment Generalization: NA		
Normal Flow of Events: 1. Customer would like to make a payment or schedule a new appointment via the web app 2. Customer enters the web app 3. Customer Log in a. If Customer is a new customer: Trigger Subflow S-1 *4. Main Menu* a. Schedule New Appointment: Trigger Use Case → Schedule Appointment b. Pay for Services: Trigger Use Case → Make Payment		
Subflows: S-1: New Customer: Use case: Enroll New Customer		
Alternate / Exceptional Flows: N/A		

Use Case Description for "Make Payment" Use Case

Use Case Name: Make Payment	ID: 7	Importance: High
Primary Actor: Customer	Use Case Type: Detail, Essential	
Stakeholders and Interests: Customer – Would like to pay for services Receptionist – Needs to create receipt for services provided		
Brief Description: After the completion of the Wags and Purrs Service provided, the customer would need to pay, and they may do that at the front desk, prior to pet pickup.		
Trigger: Completion of services Type: *Internal?*		
Relationships: Association: Customer, Receptionist Include: N/A Extend: N/A Generali1zation: N/A		
Normal Flow of Events: 1. The pet services have been completed 2. System creates a receipt of all services provided 3. Provides the Customer with the receipt and offers method of payment 3.1. Customer Chooses Cash Payment: Trigger Subflow S-1 3.2. Customer Chooses Card Payment: Trigger Subflow S-2 4. processing system Provides approval receipt for the customer's signature 5. Customer Signs the wags and purrs copy of receipt on the screen of machine		
Subflows: S-1: Cash Payment 1. The customer is given the final total 2. Machine displays total opens cash register 3. Customer inserts cash 4. machine returns the change S-2: Card Payment 1. Customer chooses card on the payment processing machine 2. Swipes 3. Input pin 4. Sign		
Alternate / Exceptional Flows: N/A		