Cody's and Kiki's System Requirements
Inf 43 – Homework 1

July 6, 2021

Haoran Li (Evan)
ID# 80921159

Introduction

Cody's and Kiki's system is an online business software system designed for dogs and cats and pet's owner, and Cody's and Kiki's workers. It will be created by Cody's and Kiki's. It offers a variety of services, such as pet grooming and boarding. It also has a shop which pets' owners can buy Cody's and Kiki's theme T-shirts, mugs, collars, and other pet accessories, such as pet toys and pet food.

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Application Context / Environmental Constraints	This section describes where Cody's and Kiki's will be used and who this system will affect.
Functional Requirements	This section specifies all of Cody's and Kiki's main functions in different situations with all users. The section will describe the goals and steps of each function on its own in detail. This section will also provide a clear use-case diagram.
Software Qualities and Non-functional Requirements	This section lists out all the qualities and non-functional requirements for Cody's and Kiki's software.
Other Requirements	This section will discuss other Cody's and Kiki's software requirements that haven't been discussed yet. This section will also provide a glossary of terms.
Assumptions and Risks	This section will discuss the assumptions and potential risks in Cody's and Kiki's software development process.
Priorities / Implementation Phases	This section will list out the priorities of the features of Cody's and Kiki's software and the implementation phases.
Future Directions and Expected Changes	This section will discuss the future changes and future features of Cody's and Kiki's software.

Overview / Executive Summary

The goal of developing Cody's and Kiki's software is to reach out to more customers and grow more revenue for Cody's and Kiki's company. The specific goal for the website part of Cody's and Kiki's software that we are developing now is to make it easier for customers to make an appointment and request our service or products. The services provided are grooming (add-ons include Brush, Trim nails, Clean Ears, Blow-dry, Bath,

Haircut, Nail trim), daycare, overnight boarding, dog training. There are also some special events, such as birthday parties, or beach socializing.

There are eight main features of the web app:

1. Detailed information about the services along with their complete description with prices and pictures indicated.

2.A feature for the customers to have accounts. Each account includes the customer's primary information (e.g., name, email, address, phone number), pet information (e.g., name, breed, age), transaction history, etc.

3.A feature for customers to make reservations for services.

4.A reward program that rewards loyal customers for engaging users and keeping them for the long term.

5.Email notifications and text notifications for things such as reservation confirmed, order dispatched, etc.

6.A feature for customers to be able to pay for the service in different ways: cash/credit card (for people who prefer online payment, a payment gateway integration with wide support is required, such as stripe, Paypal, etc.)

7.A feature for staff to have accounts. Each account allows staff to check in/check out customers, process payments, make a reservation for a customer, add notes about customers, schedule/set up events, etc.

8.A feature for managers to have accounts. Each account allows managers to edit prices for services, add or delete services, generate reports, manage inventory, etc. (source from official Cody's and Kiki's website)
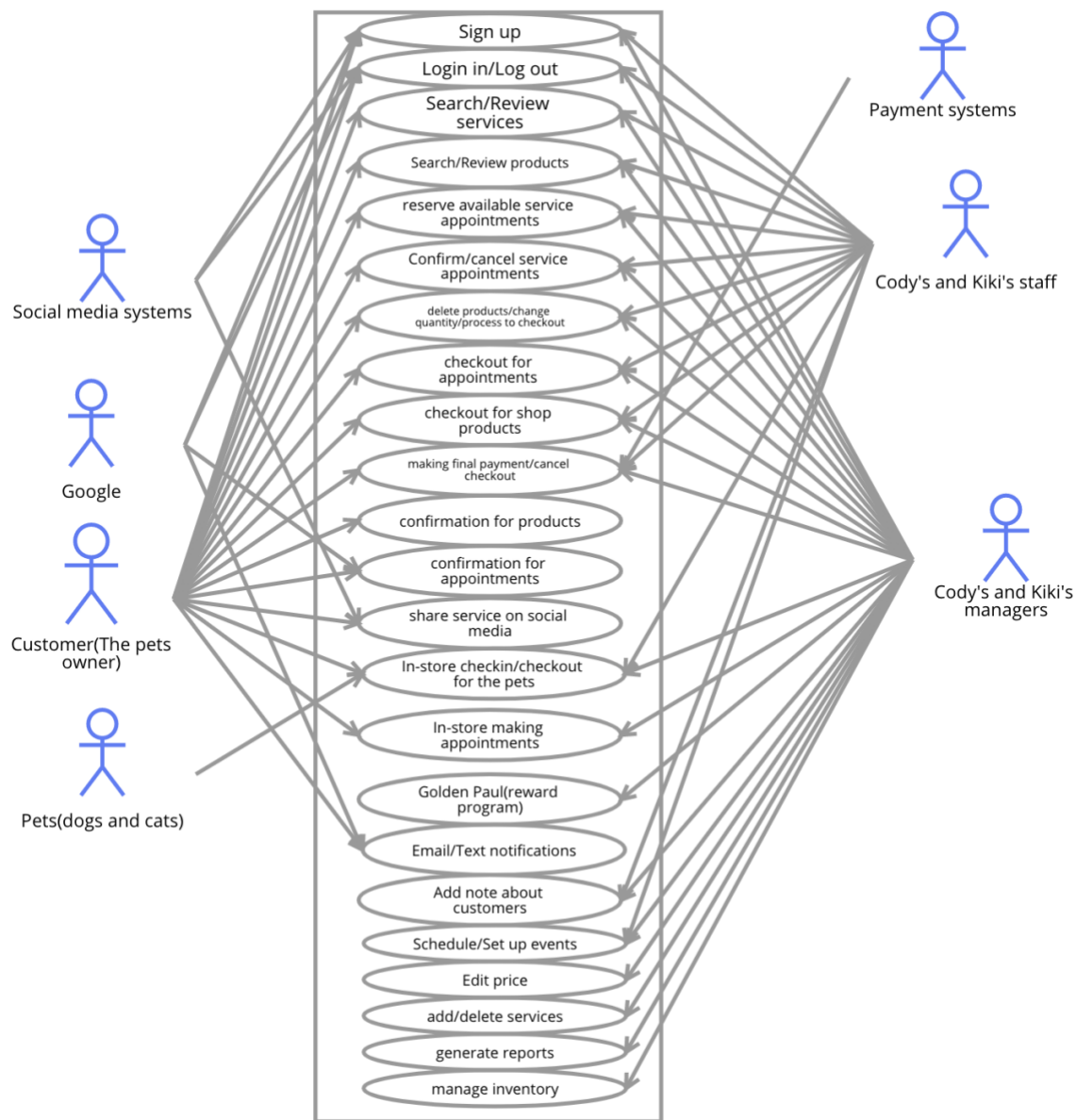
Cody's and Kiki's web app might have security problems because customers have to type personal information when order products or services. The app also needs to connect to Google and social media, so it might take some time to make the connections. We also have tight schedules since the deadline for the app is the end of July. Since we want to connect the app with social media, there might be inappropriate posts or commons about Cody's and Kiki's.

Application Context / Environmental Constraints

As discussed in the summary section, Cody's and Kiki's software is only a web app by now. Customers can use the web app from anywhere they want, but staff workers and managers of Cody's and Kiki's can use the web app only at working place. Cody's and Kiki's workers must ask for permission to use the web app at home due to security problems. Talking about staff and managers, let's introduce the actors related to Cody's and Kiki's software. People involved in this software are pets' owners, staff of Cody's and Kiki's, managers of Cody's and Kiki's. Animals involved are cats and dogs only. Other systems involved are Google, payment systems like Paypal, and social media, such as Facebook, Instagram, or Twitter. The web app needs to open on all operating systems, including Apple, Android, Linux, windows, and mac. The web app needs to open on all kind of devices, including computers, iPhones, Android phones, and iPads.

Functional Requirements

As we described in the previous section, Cody's and Kiki's web app actors are pets, customers, staff, managers, payment systems, social media, Cody's and Kiki's system, and Google. The customers will be applied to all the functions that lead them to make appointments and order supplies. Staff will be involved in tasks that lead them to check and check out for the pets and making appointments. Managers can apply for all the staff's functions and functions that lead them to send reports, manage working hours, and take care of the store shop. Other payment systems, pets, and social media will participate here and there to help the functions of human actors. Google provides Gmail and google calendar services for the system. Below is the use case diagram for Cody's and Kiki's web app, and we will provide a detailed description for each use case after the use case diagram in the grouping of actors. We will also provide how some functions make up one longer use case.

Actors (left): Social media systems, Google, Customer(The pets owner), Pets(dogs and cats)

Actors (right): Payment systems, Cody's and Kiki's staff, Cody's and Kiki's managers

Use cases:
- Sign up
- Login in/Log out
- Search/Review services
- Search/Review products
- reserve available service appointments
- Confirm/cancel service appointments
- delete products/change quantity/process to checkout
- checkout for appointments
- checkout for shop products
- making final payment/cancel checkout
- confirmation for products
- confirmation for appointments
- share service on social media
- In-store checkin/checkout for the pets
- In-store making appointments
- Golden Paul(reward program)
- Email/Text notifications
- Add note about customers
- Schedule/Set up events
- Edit price
- add/delete services
- generate reports
- manage inventory

Customers (the pets' owners):

- <u>Sign up</u>: Customers need to sign up before checking out their orders, so they will see the sign-up option either on the front page of Cody's and Kiki's web app or the checkout page if they didn't have an account yet. Customers need to choose the account type to be costumer when signing up. Customers can sign up using their email, Google accounts, or social media accounts. If customers choose to sign up with their email, they will be asked to confirm their emails and create a password. Suppose customers decide to sign up with Google accounts or social media accounts. In that case, the system will link Cody's and Kiki's accounts to their Google accounts or social media accounts, and they still need to confirm their emails for future notifications. Then customers have to enter their birthday, name,

address, phone number, how many pets do they have, types of pets (dog or cat), the brand of pets, the behavior of pets(are they acceptable of staying with other animals, etc.), pets' names, and age of the pets. After entering in information, an account is made, Cody's and Kiki's system will store accounts' data and send a confirmation to the new customer's email.

- Login in/Log out: Customers can only login into Cody's and Kiki's web app only if they have created an account. Suppose they created accounts with email and password, then they can only login in with email and password. Suppose they created accounts with Google or social media accounts, then they can only login in with their Google or social media accounts. There will be an option for customers to find and reset their passwords by email. The login status will remind before customers decide to log out. The customers log out using the logout button, and the status of the web app is logout.

- Search/Review services: On the front page of Cody's and Kiki's web app, there are services with pictures displayed. The customers can review the details and price of a single service or put out the complete service page. The customer can sort the services in the order they want or search for a specific service. If there is no related service, nothing will be displayed. Else, the service that the customer searched will be displayed.

- Search/Review product: On the front page of Cody's and Kiki's web app, there are popular products with pictures displayed. The customers can review the details and price of a single product on the front page or pull out the complete product page. The customer can sort and review the products in the order they want or search for a specific product. If there are no related products, nothing will be displayed. Else, the product that the customer searched will be displayed.

- Reserve available appointments: After selecting a service, the customers can see all the available appointment times. The customers can choose the time they want and reserve it in the cart for check-out.

- Confirm/cancel service appointments: Customers can confirm the appointments in the cart and process to checkout or cancel the appointments.

- Delete products/change quantity/process to checkout: Customers can delete the products in the cart, change the number of them, or process to checkout.

- Checkout for appointments: Customers can check out for the appointments they reserved. They need to select which pet(s) they will bring, and the price will be based on the weight of the pets. Customers can also add add-on services such as nail clipping on this step. The system will display the final payment amount and a checklist for the appointments and add-ons.

- Checkout for shop products: Customers will see the checklist of the items they ordered, estimated delivery date, and total payment amount. The customers need to type in the delivery address or make the delivery address the same as the home address of their accounts.

- Making final payment/cancel checkout: Customers choose the payment method they want. Cody's and Kiki's web app accepts all payment methods. Then the customers will fill out the payment information and billing address and make the final payment. The customers can also decline the checkout here and return to the cart page. If the billing information is not correct, the balance is not enough, or

the information does not match the billing address, the payment will decline. The customers will be back to the final payment page again. The customers can save the payment information for future purchases. The system will save the transactions in the account and the system. The customers can review past transactions.

- Confirmation for the products: The customers will review a confirmation through both email and text for their product purchases. The confirmation will include a checklist for the product, prices for the individual product, total prices, payment method, recommendations for future purchases, and delivery tracking number.
- Confirmation for appointments: The customers will receive a confirmation for their appointments through email and text after making payments. The confirmation will include the type of service, add-ons, appointment time, appointment length, selected pet(s) information, responsible staff, prices, and payment information. If the customer's account is connected to Google, the appointments will be scheduled on their Google Calendar.
- Share service on social media: The customers can post the experience and review the service and products from Cody's and Kiki's on social media. They have to tag Cody's and Kiki's on the platforms so that we can also see the posts.
- In-store check-in/checkout for the pets: The customers bring their pets to check-in in Cody's and Kiki's physical store for the appointments. Customers also need to check out their pets home after the appointments.
- Email/Text notification: The email and text notification are automatically on when the account is created. The customer can choose to turn one of them or both of them off.
- In-store making appointments: The customers can make appointments in-store with the help of Cody's and Kiki's staff or managers.

Cody's and Kiki's staff:
- Sign up: Cody's and Kiki's staff must choose the account type to be staff when signing up. Staff can only sign up with their worker's email, worker's ID, and password. Once they signed up, they can not use the same information to sign up for another staff account. The system will store the data of the staff account.
- Login in/Log out: Staff can only log into Cody's and Kiki's web app only if they have created a staff account and can only log in with email and password. The login status will remind on before the staff decides to log out. The staff logs out using the logout button, and the status of the web app is logout.
- Search/Review services: Staff can search for services when customers are ordering services in-store. If there is no related service, nothing will be displayed. Else, the detail of the service that the customer asked for will be shown.
- Search/Review product: Staff can search for products when customers are ordering products in-store. If there is no related product, nothing will be displayed. Else, the detail of the product that the customer asked for will be shown.
- Reserve available appointments: After selecting a service, the staff can see all the available appointment times. The customers can choose the time they want, and the staff can reserve it for them in Cody's and Kiki's system.

- Confirm/cancel service appointments: The staff can ask the customers to confirm their appointments in-store and process to checkout or if they want to cancel the appointments.
- Delete products/change quantity/process to checkout: The staff can ask if the customers want to delete the products in the cart, change the number of them, or process to checkout.
- Checkout for appointments: The staff can help the customers to check out for the appointments they reserved. Customers need to select which pet(s) they will bring, and the price will be based on the weight of the pets. Customers can also add add-on services such as nail clipping on this step. The system will display the final payment amount and a checklist for the appointments and add-ons, and the staff will show the information to the customers.
- Checkout for shop products: The staff will see the checklist of the customers' items, estimated delivery date, and total payment amount. The staff then double-check with the customers. If the customers want delivery, the staff will ask customers to type in the delivery address.
- Making final payment/cancel checkout: Customers choose the payment method they want. Cody's and Kiki's web app accepts all payment methods. Then the staff will help the customers will fill out the payment information and billing address and make the final payment. The customers can also decline the checkout here. If the billing information is not correct, the balance is not enough, or the information does not match the billing address, the payment will decline. The staff can ask the customers for the billing information again. The customers can sign up for an account here if they haven't had an account on Cody's and Kiki's. If the customer has an account, the system will save the transactions in the account and the system. The customers can then review past transactions.
- In-store check-in/checkout for the pets: The Cody's and Kiki's staff will help the customers check in and check out their appointments on the Cody's and Kiki's system.
- Add notes about customers: Cody's and Kiki's staff can add notes about customers, such as what they like to buy or what services did they order. These notes will be stored in the system but can only be seen by Cody's and Kiki's workers.
- Schedule/Set up Events: Cody's and Kiki's staff can schedule or set events in the system. The system will show the events on the front page of Cody's and Kiki's web app.

Cody's and Kiki's managers:
- Repeated Function: Cody's and Kiki's managers can do all that Cody's and Kiki's staff can do, so below are all functions that only managers can do.
- Edit price: Cody's and Kiki's managers can change the price of a service, an add-on, or a product. The system will reflect all the changes on Cody's and Kiki's web app immediately.
- Add/Delete services: Cody's and Kiki's managers can add and delete a service or multiple services due to customers' reviews. The system will immediately remove the deleted service(s) on Cody's and Kiki's web app. All customers who ordered

the deleted services before deleted will be refunded, and the appointments will be canceled.

- Generate reports: Cody's and Kiki's managers can generate reports for the workers or customers. The reports for the workers will include the hours they work, their reviews by the customers, and services that they have done. Reports for customers will include all the previous products and services purchased with their complete checklist and transactions.
- Manage inventory: Cody's and Kiki's managers can manage the number of products and their inventories based on customers' reviews and numbers of sales.
- Golden Paul: The managers have the ability of removing customers from the Golden Paul reward program due to inappropriate behaviors. The system will immediately remove the customer from the reward program and prevent him/her from rejoining the reward program again.

Google:

- Sign up: Customers can sign up or link their Cody's and Kiki's accounts with their Google account.
- Login: Customers can login with their Google accounts if they created their accounts with Google accounts.
- Email/Text notification: Gmail will be used for the notification.
- Confirmation for appointments: Google Calendar will be used for Cody's and Kiki's appointments if customers have linked their accounts with a Google account.

Pets:

- In-store check-in/checkout for the pets: The pets will be checked in and out by Cody's and Kiki's staff or managers.

Social media:

- Sign up: Customers can sign up or link their Cody's and Kiki's accounts with their social media account.
- Login: Customers can login with their social media accounts if they created their accounts with social media accounts.
- Share service on social media: The customers can post the experience and review the service and products from Cody's and Kiki's on social media. They can also tag Cody's and Kiki's on the platforms.

Payment system:

- Making final payments /cancel checkout: Cody's and Kiki's web app accepts all payment methods.

Software Qualities and Non-functional Requirements

- Security: Logins, payment information, address, and even phone number are very personal, so Cody's and Kiki's doesn't want this information to be hacked and leak. The credibility of Cody's and Kiki's will decrease if this personal information is not safe.
- Usability: Cody's and Kiki's wants its user interface of the web app to be customer-friendly because the goal of the web app is to make customers more

comfortable purchasing the products and services. The system should be easier for customers in all age groups to use.
- Scalability/Reusability: Cody's and Kiki's is planning to expand our business feather by including more features and opening up more physical stores, so the system must be scalable and reusable.
- Correctness: Since Cody's and Kiki's also include delivery, the system must make sure the address is not mismatched with the users to get the right items.
- There must be detailed information about the services and products and their complete description with prices and pictures.
- Cody's and Kiki's system must accept all payment methods.
- Maintainability: Since it is a long-term using system, there must be many changes to the system. The system needs to be maintainable to work well in all future versions.
- Portability: Cody's and Kiki's are planning the interpret Cody's and Kiki's system into mobile apps in the feature, so the system needs to work well on other platforms, too.

Other Requirements
- Budget: Cody's and Kiki's does not need to worry about the budget.
- Blacklist: The manager can block a customer due to inappropriate behavior. The blacklisted customer's account will be deleted, and the information can not be used to create a new account.
- The reward system: There is an automatic system called the Golden Paul in Cody's and Kiki's system. It is a reward system. When a customer has an account and purchased five Cody's and Kiki's services, the system will automatically let the account into the Golden Paul's reward system so that they can get promotional emails and get earlier access to services or shop products than regular customers.
- Filtering customers' views: Cody's and Kiki's system creates an API with social media to find all the posts related to Cody's and Kiki's. Then the system will filter out all the inappropriate posts and forward some of the positive posts to Cody's and Kiki's official social media accounts.
- Glossary of terms:

Web App	An web app is different from a website. The web application is designed for interaction with the database. A website basically contains static content. The web application user can read the content of the web application and manipulate the data. The user of the website only can read the content of the website but not manipulate it. (source from geeksforgeeks)
Blacklist	A list of people who get banned from a system's service for their inappropriate behavior. The people on the blacklist will automatically get disproved when trying to rejoin the system that added them to the blacklist.

Linux	Linux is an open-source and community-developed operating system modeled on UNIX.
UI (User interface)	It is the interaction between a human and a computer, website, or web app.
Customer-friendly	It stands for products, services, or web apps that were designed from the customer's point of view.
API	API stands for an application programming interface. An API is a connection between two applications that allows them to access features or data of each other.

Assumptions / Risks

Assumptions:
- Cody's and Kiki's system has the access to all the legal billing software by using a unique API.
- Cody's and Kiki's can connect to popular social media like Facebook or Instagram so that the users of Cody's and Kiki's can log in with social media.
- Cody's and Kiki's has its own calendar system to schedule all the appointments for internal use.
- Cody's and Kiki's only has one physical store now.
- Cody's and Kiki's system can send email and text notifications to a large group of people.

Risks:
- Security: The customers' personal information might be hacked by the business competitor or leaked by internal workers.
- Correctness: Since the system has to handle lots of appointments simultaneously, some of the appointments might be missing or be scheduled in the wrong period.
- Cody's and Kiki's web app allows people to make an appointment online, so it might cause the customers who prefer to make appointments in store not to get an appointment right away.
- If it turns out only a few people use Cody's and Kiki's web app, the extra pet food inventory for the web app might get expired.
- The time schedule of Cody's and Kiki's system is relatively tight, so the quality of the system can not be promised.

Priorities / Implementation Phases

Must have:
- Users, staff, and managers can sign up and log in.
- Users, staff, and managers can search and review services and products.
- Users can choose services and products and add them to the cart.
- Users can double-check before checking out.
- Users can type in the delivery address for the shipping.

- Users can successfully purchase.
- Orders and transactions history is stored and can be viewed by the users.
- Workers can set up and schedule an event.
- Workers can make in-store purchases for the customers.
- Managers can edit the price of services and products.
- Managers can remove customers from the Golden Paul reward program.
- Managers can add and delete services provided on the web app.
- Managers can generate reports for the customers and the staff.
- Managers can manage inventory.
- The Golden Paul, the reward program.

Should have:
- Users can change the number of products before checking out.
- Users can get detailed confirmation of services and products after purchases.
- Users are able to turn on and off email and text notifications.
- The web app a nice and customer-friendly user interface.
- Users can cancel checkout before making the final payment.
- Workers can add notes about the customers.
- The system can automatically add customers to the reward program.
- The customers can block inappropriate customers.
- Customers can search for services and products they want by typing related words, and they can sort services and products by name, and price.

Nice to have:
- The system will reflect workers' changes on the web app immediately.
- Customers can review and like their services and products on the web app.
- Customers can sort services by the number of likes and customers' reviews.
- Customers can share their purchase experience on social media with Cody's and Kiki's tags.
- The system will send promotional emails to customers will recommended items.
- The system has a recommendation system based on customers' search results and purchases history for promotion.

Future Directions and Expected Changes

Cody's and Kiki's will definitely expand in the future, so the web app and the system need more features in new versions.
- A mobile app that contains all the web app features.
- The system will support different languages, such as Chinese.
- Cody's and Kiki's will open up more physical stores in the town, so when making placements, the customers now need to select which store they are planning to visit.
- Cody's and Kiki's web app should add more services, such as in-home care or self-training courses.

- Cody's and Kiki's web app prison support picking pet services and remote cameras for the owners to feed and watch the streaming of services.
- Promotions for the first purchase.
- More delivering services.