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Teaching Case

Here We Grow Again! An Expansion for Mark's Doggy Day Care: A Database Design and Development Case

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Abstract

The pet care service industry is booming. The U.S. Census Bureau (2019) recorded pet service industry payroll numbers at almost \$11.2 billion (excluding veterinarian services). In this teaching case, Mark, the owner of a successful dog boarding business, is looking to capitalize on that growth as he expands his customer demographic to welcome cats and rabbits, provide rehabilitative pet care, and better address the increasing needs of his longtime customers. This is a follow-up case to the *System Development and Data Modeling for Mark's Doggy Daycare and Boutique* case that focused upon developing a database for Mark's new entrepreneurial venture. The database created in the first case was not constructed for keeping track of repeated health care services administered to his clients throughout their stay nor to allow for other types of pets. In this case, Mark meets with the systems analyst consultant to discuss the requirements for upgrading his database. He describes in detail the organization's business processes, thus allowing the case to stand alone without the need to reference the original case. Processes described in the case include customer management, reservations, invoicing, inventory management, and accounts receivables.

Keywords: Teaching Case, Process Modeling, Systems Analysis, Database Design

1. INTRODUCTION

Mark, the owner of Mark's Doggy Daycare, busied himself catching up on paperwork while he waited for his old college roommate to arrive. The doggy daycare's business was booming. Mark was preparing to expand his operations to board and care for even more pets. The database he was currently using was great, but since he was offering rehabilitative care for injured pets, companion care for aging pets, and expanding into caring for rabbits and cats, the current database needed some modifications. In addition, there were some features he had forgotten to request in the first database, like the ability to track medication administration and wound care, that he would like to have included.

2. HELP FROM AN OLD FRIEND

"Scott!" Mark exclaimed as he crossed the daycare lobby towards the door. "It's good to see you, buddy! Thanks for coming over and especially for being willing to modify the database for me!"

"I hope there is nothing wrong with it?" Scott asked as he sat down on a lobby couch.

"Absolutely not!" Mark reassured. "We're getting ready to expand our client base to include cats and rabbits. We have also started doing some rehabilitative care and are now finding that some of our older clients are needing to have medications administered and tracked multiple times throughout the day. I hadn't thought of

those things when I initially asked you to create the database. Now that we are offering more services to our customers, we need to be able to track that data. Thus, our current database needs some modifications.”

“That’s good to hear! I thought that there might be something wrong with it.” Scott breathed as he pulled out his notebook. “Well, you know how I like to start. I want to know everything about your business operations. Remind me again about how your business processes work here... from the moment that you get a client to the time that they leave.”

3. EXPECTED DAILY OPERATIONS

“Since we have been using the system you created for us,” Mark began, “we no longer rely upon paper records. Let me tell you how we currently operate here. I’ll adjust for the changes to our operations as I go. We provide basically the same services as we had in the past. Not only do we provide hourly care and extended overnight boarding, but we also provide grooming, behavioral training, surgery rehabilitation therapy, and health services through a partnership with a local small animal veterinarian. Dr. Williams visits on a regular basis to give wellness check-ups, shots, and in-house visits. Those are the main medical services that she offers on-site. If the client requires an in-office visit, we have one of our staff transport the client to Dr. Williams’ office, stay with the client to take notes, ask questions, update the client’s parents, and then transport the client back to our center or to their home. We just handle reservations and logistics and the costs associated with them. The medical service billing is handled through Dr. Williams’ office.

“We have an in-house grooming service in which we provide services such as baths, haircuts, ear cleaning, teeth cleaning, nail trimming, and flea treatments for dogs and cats. These can be purchased as needed or set up as standing appointments. If a regular client comes in for daycare, he is checked in at the front desk by Becky and assigned to his standard kennel containing his preferred inventory. This normally includes his freshly laundered blanket and favorite sanitized toys. The kennels, blankets, and toys are cleaned every night before we leave. During the day, we take dogs on walks and admit cats and rabbits to the corresponding exercise areas. Cats and rabbits require a little less maintenance. Dogs will have supervised play time with the other dogs, take potty breaks, be given one meal and one snack, and be provided with a

KONG puzzle containing his favorite treat. Although we usually know what the regulars like, we post a *Favorites* list for each client near his kennel along with a *Conditions* list as a reminder of medical issues that need to be addressed. Because the database was not initially developed to track health conditions and multiple medical administrations, we are currently recording the conditions in the *Favorites* area of the database. This has worked for us so far. However, as more of our clients start developing health issues that require tracking throughout the day, I want to address this issue before it causes a problem.

“Andy is our Activities Director and oversees daily operations associated with the immediate care of the pets. Andy has two full time assistants, Kathy and Tom, who are dedicated to taking care of our clients’ daily needs. During the day, they record notes in the database on each client’s activities to provide an end-of-the-day report to each client’s parents. We also use this information to update our file on each client, such as unusual behavioral issues, which pets get along together and which do not, favorite foods, and odd behaviors. Our overnight and extended boarding is very similar to our daycare except we have one additional meal, snack, another exercise time, and then bedtime. However, some of our clients have normal evening routines. If those are provided, they are included on the *Favorites* list posted by the kennel.

“We have been hosting special events for our clients such as birthday parties, holiday bashes, and sleepovers. Special events usually have event-themed activities and food such as birthday cake, Christmas cookies, or holiday ice cream. The attendees will also receive snacks, a special party favor (e.g., toy, bandana, treat bag, etc.), and one of our activity coordinators will take pictures during the party to post on social media. The parties usually last for about two to four hours depending upon the package that the clients’ parents purchased and can be packaged with daycare or boarding.

“We also offer dog walking and behavioral training services for both daycare and stay-at-home clients. Andy manages these services and has four part-time college students who assist him in providing the personalized services. The focus of behavioral training is determined by an initial consultation with the client and his parents. Training usually addresses problems with interactions with adults, children, or other animals.

“Our boutique stocks pet food and treats, vitamins, and healthcare products, pet toys,

leashes, shampoos, and fashion accessories such as bandanas, collars, and bows. We try to mostly stock pet food and treats based upon the individual preferences of our clients. Rather than having to go to the store to restock, our clients' parents are able to purchase it from us and we have it ready to load into their vehicles when they come to pick up their pet at the end of the day."

4. BUSINESS PROCESSES

"In regard to processes," Mark continued, "when a clients' parent wants to reserve a slot for daycare or boarding, they just call our front desk and Becky, our office manager, will enter the pet's name, pet type, parent, approximate arrival time, services requested, and contact phone number in the system. When that day or event arrives, Becky pulls the event up on her tablet and records attendees as they arrive. Each pet is initially given a tag that can be placed on their pet collar and connected to the database so that we can easily associate data entered throughout the day with the pet. When the pet arrives, we just scan the tag to check the pet in and to immediately know the client's and parent's preferences. During check in, we record the actual time that they arrive, the time that they leave, who brought them, and who is supposed to pick them up. Just as a backup, we can also print an attendee report to record this information on as well.

"When a client's parent purchases one of our services, such as a teeth cleaning, nail trimming, haircut, or bath, Becky indicates what the service is, when it is to occur, any special requests, how it is to be billed, who is supposed to perform the service, the price of the service, and if it is a standing request. All our staff are trained to provide those services.

"For boutique purchases, the parents can pay Becky immediately for items at our cash register or have the items added to the customer's account. When an item is added to the customer's account, we record the customer's name, the date purchased, the item purchased, the price of the item, the quantity purchased, and the total cost of the purchase. For standing requests such as pet food, treats, or vitamins, costs are usually added to the parents' account and paid at the end of the month. We take checks, cash, and debit/credit card payments using Square. Parents receive a bill at the end of each month for services rendered and items on account.

"When a client terminates a relationship with us due to death or just moving on, we will include a

short note in the client's record indicating the date and reason for departure.

"Becky usually handles all of these functions including the phone at the front desk as well as checking clients in and out, taking reservations, selling items in the boutique, and taking cash or adjusting customer accounts as products and services are purchased."

5. REPORTS

"That's great! You gave me a lot of nice detail. Tell me about the reports you would like to run," Scott requested.

"We run daily reports, weekly invoices, and regular status reports regarding accounts receivable and inventory levels," Mark started. "Our daily reports include a daily income report with a breakdown of the clients we served that day, the services we provided, the employee who provided that service, and the price of the service. We also run a favorites report for each pet client that is posted on their kennel. At the end of the day, we provide each pet's parent with a daily activity report letting them know about their pet's day. We send this as an email to the parents. We also need to have reports to know how our different products, services, and promotions are doing so that we can recognize trends and be sure to offer the most popular products and services to our clients." (Examples of some of the proposed reports are found in the Appendices.)

6. THE NEXT STEP

"Let me put together a few diagrams with narratives to make sure we are both on the same page as to what your processes look like and the flow of data through your system," Scott said as he stood to leave. "I will also create some diagrams of what I think your database should look like so that we can make sure we are collecting all of the data elements you will need. I'll try to get back to you in a couple of days."

"You did a great job of developing our current system. I look forward to your implementing the upgrades," Mark smiled as he walked Scott to the door. "Thanks so much for helping us out again."

7. ASSIGNMENTS

Students should assume the role of Scott or a systems analyst consultant. The systems analysts' roles and responsibilities will vary

depending upon the course and assignment. Examples of possible assignments are provided.

Process Modeling

Courses: Systems Analysis and Design, Process Modeling, Database Development, general graduate level MIS course

Scott would like to draw out the business processes to verify that he understands them correctly.

1. Create process models to diagram one of the business processes such as the reservation process, the sales recording and accounts receivable process, or the boutique sales process.
2. Write short narratives to accompany your diagrams to verify and support your interpretation of the process.
3. As the diagrams are developed, record any assumptions you make, regarding the processes, in a separate document.

Systems Analysis Design and Database Development

Courses: Systems Analysis and Design, Database Development, graduate level MIS course

Assume that Scott would like to develop a prototype of the system to be developed. He would want to:

1. Accumulate the functional and technical requirements for the system.
2. Prioritize the requirements.
3. Create system development diagrams.
4. Create a data dictionary.
5. Create data entry forms.
6. Create queries to generate inventory reports customer invoices, reservation sheets, client favorites reports, client conditions reports, client daily activity reports, monthly customer statements,

account receivable reports, and profitability reports.

7. Create reports including inventory reports, customer invoices, reservation sheets, client favorites reports, client condition reports, client daily activity reports, monthly customer statements, account receivable reports, and profitability reports.
8. As the database is developed, record any assumptions that you make in a short report.

Skillset Discussion

Courses: General graduate level MIS course

Ask the students to reflect upon the project, the skills that they used, and the systems development process.

1. Review and discuss the skillsets used to complete the project
2. Discuss the transferability of those skillsets to other industries such as their area of interest.
3. Discuss the business and technical opportunities that developing a system like this provides for an organization.
4. Discuss the business and technical challenges that could arise during the development process.

8. REFERENCES

- Schwieger, D. & Humphrey, R. (2018). System Development and Data Modeling for Mark's Doggy Daycare and Boutique. *2018 Proceedings of the EDSIG Conference*, 4(4764), 1-9. <https://proc.iscap.info/2018/cases/4764.pdf>.
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APPENDICES

Mark's Pet Boarding Center & Boutique Reservation Example Document



Reservation

06/03/2021
at 10am

Canine Client Name	Account Number
Trixie	234567

Owner's Name	Phone Numbers
Tyler Wildman	314-555-3333/314-555-2222

Requested Services



Item	Description	Provider
S2000	Dog Obedience Class – 1 hour	Betsy
S1050	Hair cut	Frank
S1030	Grooming	
S1100	Clip nails	Pam

Notes:
Keep Trixie away from Atlas. Atlas makes Trixie anxious.

Mark's Pet Boarding Center & Boutique Invoice Example Document



Invoice 5768
06/03/2021

Sold to:
 Jason Busman
 1234 Apple Street
 St. Louis, MO, 63101
 (314)555-4444

Canine Client Name	Account Number
Scooter	123456

Item	Description	Quantity	Service Provider	Unit Price	Line Total
S1000	Individual Run	1	Mark	20.00	20.00
S0020	Bath	1	Jane	25.00	25.00
S3010	Shots	3	Vet	10.00	30.00
I2500	Green Buffalo Special Food – 25 pound bag	2		30.00	60.00
Subtotal					135.00
Sales Taxes					5.10
Total					140.10

Thank you for your business!

Mark's Doggy Daycare & Boutique
 45 Abbey Lane, St. Louis, MO, 63101
 Phone: (314) 555-5555 Email: mark@bestdogcare.com

Mark's Pet Boarding Center & Boutique Client Daily Report Example Document



Daily Report

06/03/2021

Client Name	Account Number
Trixie	345671

Dear Mr. Busman,

Trixie had a wonderful day at Mark's Pet Boarding Center & Boutique. In the morning, she played ball with Mark and two other dogs, Max and Spot, in the outside yard. The afternoon was hot so she stayed inside, played hide-and-seek with Mark, ate, and took a nap. Trixie ate one meal, one snack and had a bath during her day with us.

Thank you,
Mark

Requested Services

Item	Description	Provider
S2000	Dog Obedience Class – 1 hour	Betsy
S1050	Hair cut	Frank
S1030	Grooming	
S1100	Clip nails	Pam

Notes:

Keep Atlas away from Trixie. Atlas makes Trixie anxious.