Responses to Online Chapter A Questions: The Role of the System Analyst (Revised)

Author: Amaree Ryans, Saim Mahmud

Course: CIS 370---System Analysis and design

1. **Do you agree with Alice and the others about the importance of problem-solving skills? Industry- specific insight? Communication skills? Discuss.**

Alice Adams and her team point out that IT professionals need more than just technical know-how to excel in their field. They stress the importance of problem-solving skills, understanding the industry, and effective communication. This well-rounded approach helps identify top talent in IT roles.

Being able to solve problems is crucial in IT because it shows you can handle tricky situations and figure out solutions. This is a key part of working on IT projects. Having a deep understanding of the industry is super important because it shows you get the unique challenges and how things work in that sector.

This helps you come up with IT solutions that really fit the bill. And let's not forget communication skills - being able to talk tech with your team, get what the bosses need, and explain complicated stuff in simple terms. Having all these skills means IT pros can really make a difference by creating solutions that are both smart and work for the business.

Solving problems is key to getting things done. Employees who are great at problem-solving can simplify processes by finding and fixing snags, making things run more smoothly. They think outside the box, which helps businesses stay ahead of the game and adapt to changes. They're also good at managing risks, handling sudden issues without losing focus on the big picture. Plus, they're always learning and looking ahead, anticipating, and preventing future challenges.

Source: Sharma, A. (2022). *Importance Of Problem-Solving Skills the Workplace.* Retrieved from: https://www.adaface.com/blog/importance-of-problem-solving-skills-in-the-workplace/

2. **Should you research how a hospital is managed before interviewing for a position with an information systems manager at a hospital? Discuss.**

Researching how a hospital is managed before interviewing for a position with an information systems manager is a strategic approach. It allows you to tailor your response

to the specific needs and goals of the hospital, demonstrating your preparedness and genuine interest in contributing to the organization's success.

According to researchers Eisler and Tan, they explain how, "The complexity of the healthcare environment, the multitude of forces that shape technology decisions, and the uniqueness of the healthcare environment are part of the justification for the promotion of the academic discipline of HCTM as separate and unique from MOT in general. Compared to other industry sectors, such as banking, housing, and transportation, the healthcare environment is seen not only as more complex, but also more emotionally charged (Eisler & Tan, 2006)."

This environment is characterized not only by the complexities inherent in the development and maintenance of a seamless system spanning the continuum of healthcare delivery, however as researchers Eisler and Tan state, "by the complexity of relationships between provider organizations, service and product vendors, third-party payers, funders, and insurers, patients (consumers), the public, regulators, researchers, and educators. In a 2005 Communications of the ACM publication, Tan et al. (2005) pointed to characterizing the present-day healthcare and services delivery systems as "Complex Adaptive Systems". The need to understand the strategic TM concept in such a modern, complex system environment is clearly warranted (Eisler & Tan, 2006)."

The healthcare industry is an industry in transition, driven by such factors as changing population demographics, changing technology, and changing economic conditions. These pressures have resulted in changes to structure, process, financing, and human resource management. It's important to be aware of all these vast and complex elements in worlds of healthcare

Source: Eisler, G., & Tan, J. (2006). A metric for Healthcare Technology Management (HCTM): e-surveying key executives and administrators of Canadian teaching hospitals (1). *International Journal of Healthcare Information Systems and Informatics*, *1*(1), 1+. Received: https://link.gale.com/apps/doc/A162577882/AONE?u=buffalostate&sid=bookmark-AONE&xid=875dbb52

3. In terms of your career, do you think it really makes a difference whether you work for a bank, a hospital, or a retail chain? Or is an information systems job going to be the same no matter where you work? Discuss.

In terms of one's career in information systems, the industry in which you work can indeed make a significant difference. While the core technical skills required for an information systems job may remain consistent across different industries, the specific challenges, goals, and priorities of each sector can vary greatly.

Working for a bank, for example, may involve dealing with complex financial systems, regulatory compliance, and security measures to protect sensitive customer data. Understanding the intricacies of the banking industry, such as financial transactions, risk management, and customer relationship management, would be essential for success in this environment.

On the other hand, working for a hospital would entail familiarity with healthcare information systems, patient care processes, electronic health records, and compliance with healthcare regulations like HIPAA. Information systems professionals in healthcare need to address unique challenges such as interoperability, patient privacy, and the integration of medical devices and systems.

Similarly, working for a retail chain would require knowledge of inventory management systems, point-of-sale systems, customer relationship management, and e-commerce platforms. Understanding consumer behavior, supply chain management, and omnichannel retailing would be crucial in this context.

Overall, while the technical skills may be transferable, the specific domain knowledge and understanding of industry-specific challenges and opportunities are what differentiate an information systems job across different sectors. Therefore, choosing a career path aligned with one's interests, strengths, and desired impact can greatly enhance job satisfaction and career advancement opportunities in the field of information systems.

Source: Allen, A. L. (2021). HIPAA at 25 — A Work in Progress. *The New England Journal of Medicine*, *384*(23), 2169–2171. https://doi.org/10.1056/NEJMp2100900

Hong, Y., Huseynov, F., Sardarli, S., & Zhang, W. (2020). Bank earnings management and analyst coverage: evidence from loan loss provisions. *Review of Quantitative Finance and Accounting*, *55*(1), 29–54. https://doi.org/10.1007/s11156-019-00835-2

Responses to Chapter 1 Questions—Keeping Track of Your Geocaching Outings (Revised)

Author: Amaree Ryans, Saim Mahmud

Course: CIS 370---System Analysis and design

1. Geocaching Systems: Work Breakdown Structure

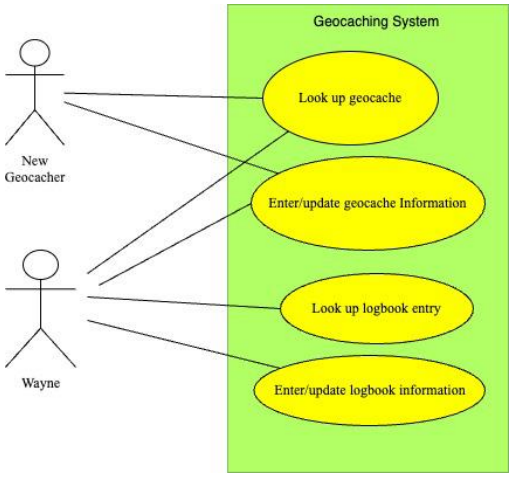
Task No.	Description	Duration (day)
	I. Discover and understand the details of all aspects of the problem.	
1.	Identify the boundaries and objectives of the Geocaching system project.	2
2.	Determine who will be involved or affected by the Geocaching system.	1
3.	Outline the timeline for the development and implementation of the Geocaching system.	1
	II. Design the components of the solution to the problem.	
4.	Collect and document Wayne's requirements for the Geocaching system.	3
5.	Create a structured plan for organizing and storing Geocaching data.	2
6.	Create visual representations of how the Geocaching system will look and function for user feedback.	2
	III. Build the components and integrate everything into the solution.	
7.	Install necessary software and tools for programming and testing the Geocaching system.	1
8.	Build the database according to the designed schema.	4
9.	Code the backend logic and functionality of the Geocaching system.	5
10.	Implement the user interface and frontend features of the Geocaching system.	5
	IV. Perform all system-level tests and then deploy the solution.	
11.	Test individual components and functions of the Geocaching system in isolation.	3
12.	Test the integration and interaction between different modules of the Geocaching system.	3
13.	Evaluate the overall functionality and performance of the Geocaching system.	4

2. Geocaching System: Possible Use Cases & Domain Classes

Use Case	Description
Add New Geocache	Wayne inputs information about a new geocache he has created.
Search for Geocache	Outside users search for information about geocaches created by Wayne.
Update Geocache Information	Wayne updates information about an existing geocache.
View Geocache Details	Outside users view detailed information about a specific geocache created by Wayne.

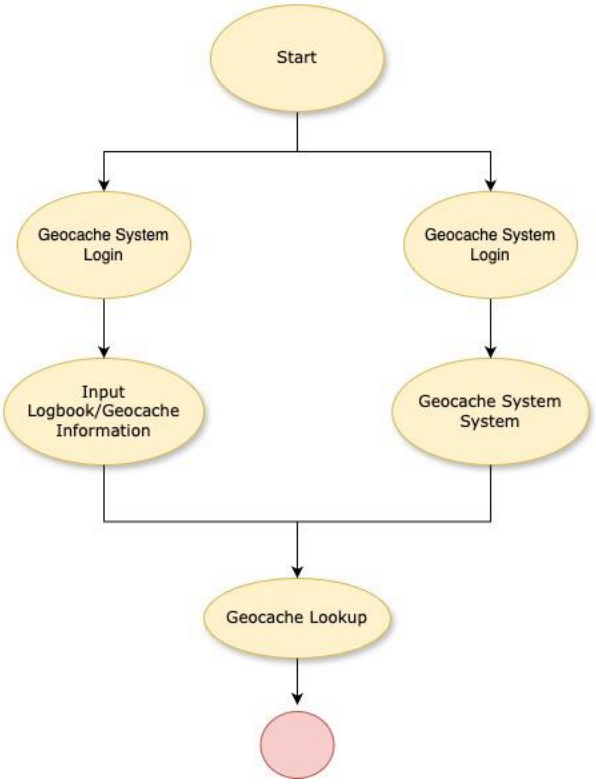
Domain Classes	Attributes
Location	• Address • Map
Contact	• Email • Cellphone number
Image	• Map (images in location)
Collaborate	• Logbook information • Updates

3. Use Case Diagram



(Source: Made by Draw.io)

1. Login to the Geocache system.
2. Access the input feature from the menu.
3. Fill out the required information.
4. Upload relevant data to the Geocache system.
5. Verify information for accuracy.
6. Submit geocache information to system.
7. Wait for successful submission through confirmation.



(Source: Made by Draw.io)

4. Website:

Deploying a geocaching website akin to www.geocaching.com and www.atlasquest.com requires addressing several crucial considerations beyond just functionality. Firstly, the choice of hardware platform must accommodate diverse user preferences, ensuring seamless usability on both laptops and mobile devices like cell phones. This necessitates responsive web design and optimization for various screen sizes.

Web hosting issues entail selecting a reliable hosting service capable of handling high volumes of traffic while ensuring minimal downtime. Security measures are paramount to protect user data and prevent unauthorized access, involving encryption protocols, secure authentication methods, and regular security audits to detect and mitigate vulnerabilities.

Robustness is crucial to withstand heavy usage and unexpected spikes in traffic, requiring scalable infrastructure and load balancing techniques. Financial costs encompass hosting fees, development expenses, and ongoing maintenance costs, which must be balanced with revenue generation strategies such as subscriptions, advertisements, or premium features.

Managing high volumes of data generated by user activities demands robust data storage solutions, including databases capable of handling large datasets efficiently. Compatibility across different browsers and devices necessitates thorough testing and optimization to ensure consistent performance and user experience.

Furthermore, compliance with legal regulations regarding user privacy, data protection, and geocaching regulations is imperative. Community guidelines and moderation mechanisms are essential to promote responsible geocaching practices and maintain a positive user experience. In summary, deploying a geocaching website involves a multifaceted approach encompassing hardware compatibility, web hosting, security, robustness, financial considerations, scalability, data management, browser compatibility, and regulatory compliance.

Responses to Chapter 2 Questions: Investigating System Requirements (Revised)

Author: Amaree Ryans, Saim Mahmud

Course: CIS 370---System Analysis and design

1. Stakeholders for 'On the Spot'

Who	Why	Internal or External	Operational or Executive
Bill	Founder and initial delivery person	Internal	Operational
Delivery Personnel	Assists with the deliveries	Internal	Operational
Warehouse Coordinator	Manages the warehouse operations	Internal	Operational
Central Warehouse	Stores inventory and fulfills orders	Internal	Operational
Executive Team	Makes strategic decisions	Internal	Executive
IT Support Staff	Maintains the online system	Internal	Operational
Marketing Team	Promotes the online platform	Internal	Operational
Customer Service Representatives	Handles customer inquiries	Internal	Operational
Customers	Use the system to place orders	External	Operational
Suppliers	Provide products to be sold	External	Operational

2. 5 Main Steps in Systems Analysis

1. First, we'll have a chat with everyone involved Bill, the delivery team, the folks at the warehouse, and even some customers. We'll ask them what they need from this system, like making orders easy to place online and ensuring deliveries go smoothly. We might hang out at

the warehouse to see how things work now and think about how we can make everything quicker and easier with the new system.

2. Once we've got all that info, we'll write it all down, focusing on the must-haves, like a way for customers to see their delivery status and for the warehouse team to keep track of all the packages. We'll also think about things that'd be nice to have in the future, like maybe a way for customers to chat with a support person directly on the site.

3. Next up, we'll figure out what we need to start building first. The most important stuff could be making sure customers can pay online easily and that Bill can see all his delivery orders immediately.

4. Then we'll sketch out what the website and apps might look like. This means drawing up the screens that customers and Bill will use to make sure everything's easy to find and use. We'll show these designs to a few people to get their thoughts and make any changes they suggest.

5. Lastly, we'll take everything we've planned back to the people who'll use it every day, showing them the designs and asking if it's what they need. If they want any changes, we'll tweak it until everyone's happy.

Throughout all this, we've got to answer some big questions like what Bill wants his business to look like in the future, what sort of things customers can do on the website, and how the team will manage all those deliveries and payments. We'll also need to think about how everyone will keep track of where each delivery is, what kind of computers or gadgets we need to buy, and how we'll keep everything on schedule, including paying the team. Plus, we'll need to make sure that there's a part of the system that takes care of the money side of things, making sure that all the numbers add up right. And that's our plan to get 'On the Spot' set up with a shiny new system.

3. On the Spot User Case

User Type	Use Case	Brief Use Case Description
Customer	Schedule Pickup	Customers schedule a pickup for their packages, specifying the desired pickup time and location.
Customer	Request Immediate Pickup	Customers request immediate pickup for packages that need to be collected urgently.
Customer	Pay at Pickup	Customers pay for their shipments at the time of pickup, either in cash or using a payment method accepted by On the Spot courier service.
Customer	Receive Monthly Bill	Regular customers opt to receive a monthly bill for all their shipments instead of paying at the time of pickup.
Courier Driver	Record Pickup Time	Couriers record the time of pickup for each package collected from a customer, along with package details.

Courier Driver	Scan Package at Warehouse	Couriers scan each package as it is sorted in the warehouse to maintain control and avoid loss or delays.
Courier Driver	Print Package Label	Couriers print out labels for packages upon pickup using a portable printer kept in the delivery van.
Courier Driver	Record Delivery Information	Couriers record information about each delivery, including the time of delivery, recipient, and any necessary signatures.
Warehouse Staff	Scan Package at Warehouse	Warehouse staff scan each package as it is sorted to facilitate tracking and ensure efficient handling.
Warehouse Staff	Package Sorting	Warehouse staff sort packages based on delivery locations and other relevant criteria to streamline the delivery process.
Warehouse Staff	Package Storage	Warehouse staff store packages securely until they are ready for dispatch, ensuring they are easily retrievable when needed.

Responses to Chapter 3 Questions: Identifying User Stories and Use Cases (Revised)

Author: Amaree Ryans, Saim Mahmud

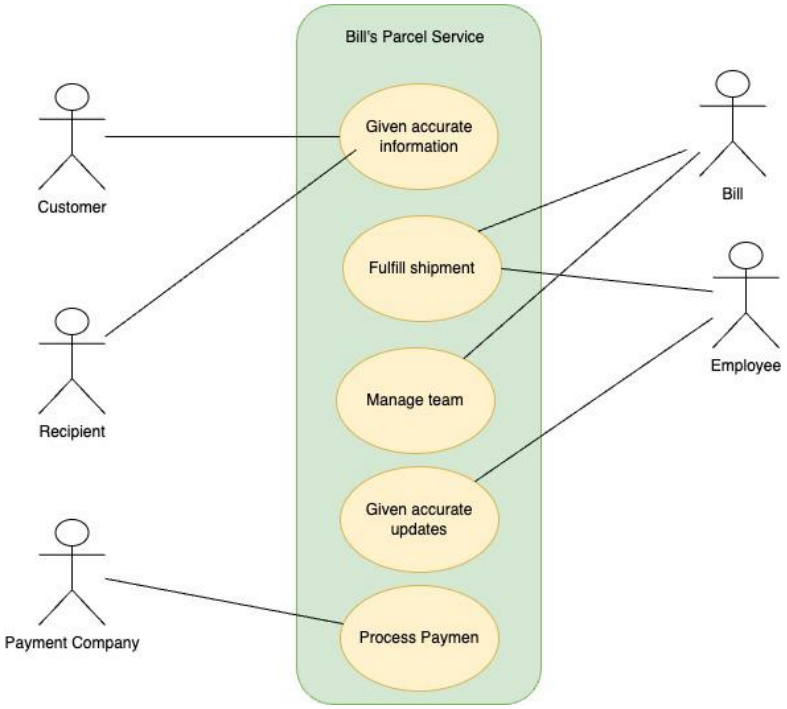
Course: CIS 370---System Analysis and design

1. **Actors:**
    - Bill (Owner)
    - Employees
    - Clients/Customers
    - Payment Company
    - Recipients

Actor	User Story
Bill (Owner)	As a System Manager and owner, I want to collect and store data, including shipment and employee statues and customer's bills.
Employees	As an Employees, I want to record delivery information upon completing a delivery, so that I can track successful deliveries and provide accurate updates to the system.
Clients/Customers	As a Clients, I want to have payment method flexibility, and info on my shipment including updates and time of arrival.
Payment Company	As a Payment Company, I want to ensure a smooth and quickly payment transaction for client.
Recipients	As a Recipients, I want to ensure that packages are delivered safely and efficiently.

2. **Use Cases:**

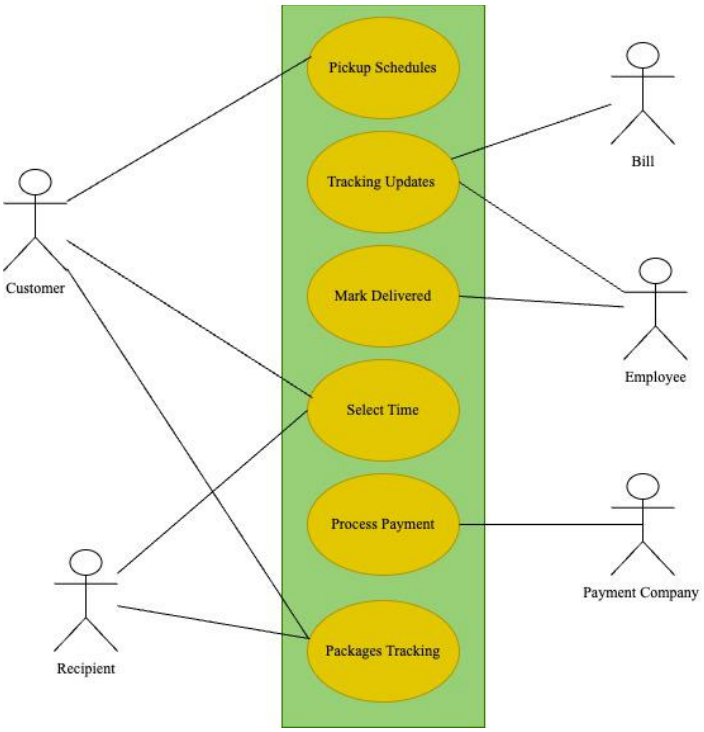
Actor	User Goal
Bill (Owner)	To lead and Fulfill orders of customers and employees
Employees	To efficiently fulfill customers' orders
Clients/Customers	To gives payment and information
Payment Company	To process payment from Client/Customer
Recipients	To give accurate information about destination



(Source: Made by Draw.io)

3. Event uses case list:

Event	Event State	Resulting Use Case
customer place order	External	Pickup Schedules
employee ships order	External	Tracking Updates
employee deliver order	External	Mark Delivered
customer request pickup	External	Select Time
customer pays service	External	Process Payment
customer signs package	External	Packages Tracking



(Source: Made by Draw.io)

Responses to Chapter 4 Questions: Domain Modeling (Revised)

Author: Amaree Ryans, Saim Mahmud

Course: CIS 370---System Analysis and design

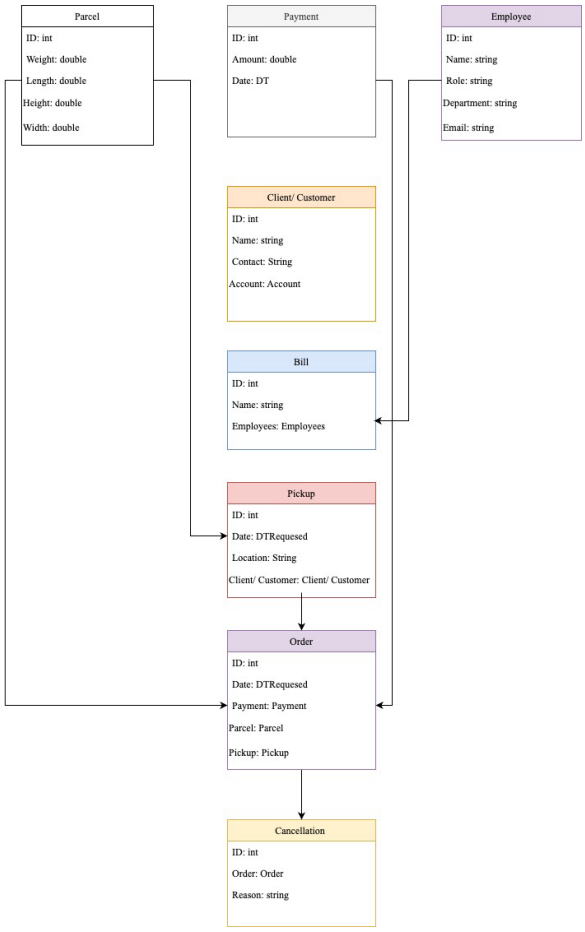
1. **Using the noun technique list:**

Noun	Class/Attribute/Importance	Duplicate (Yes/No)
Packages	Attribute	No
Data		No
Request		No
Order		No
Invoice		No
Location		No
Distance		No
Van		No
Demand		No
Companies		No
Information		No
History		No
Cash		No
Contact		No
Track		No
Schedule		No

Label		No
Receipt		No
Weight		Yes
Length		Yes
Height		Yes
Width		Yes
Movement Event		No
Route Trip		No
Availability		No
Algorithm		No
Payment	Class	No
Employees		No
Client		No
Bill		No
Pickups		No
Website		No
Month		No
Account		No
Cancellation		No
Storage	No Importance	No
Warehouse		No
Advertisement		No

Expenses		No
Business		No
Box		No
Tape		No
Bag		No

2. Domain model class diagram:



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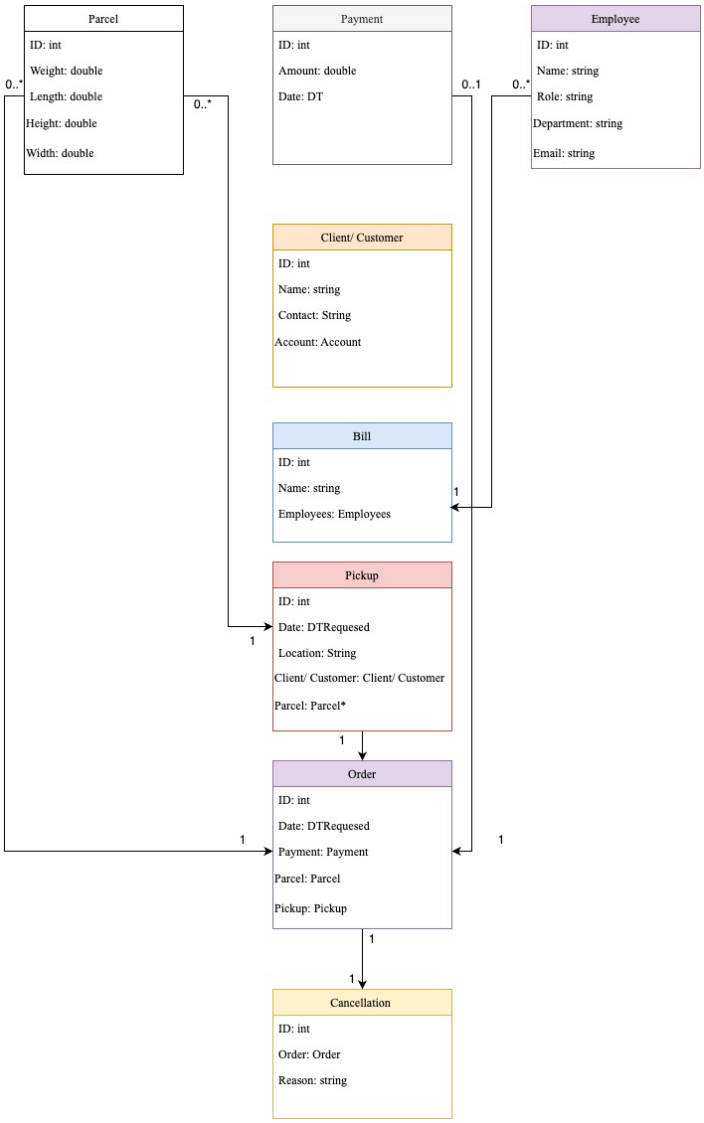
3. Associations and multiplicity:



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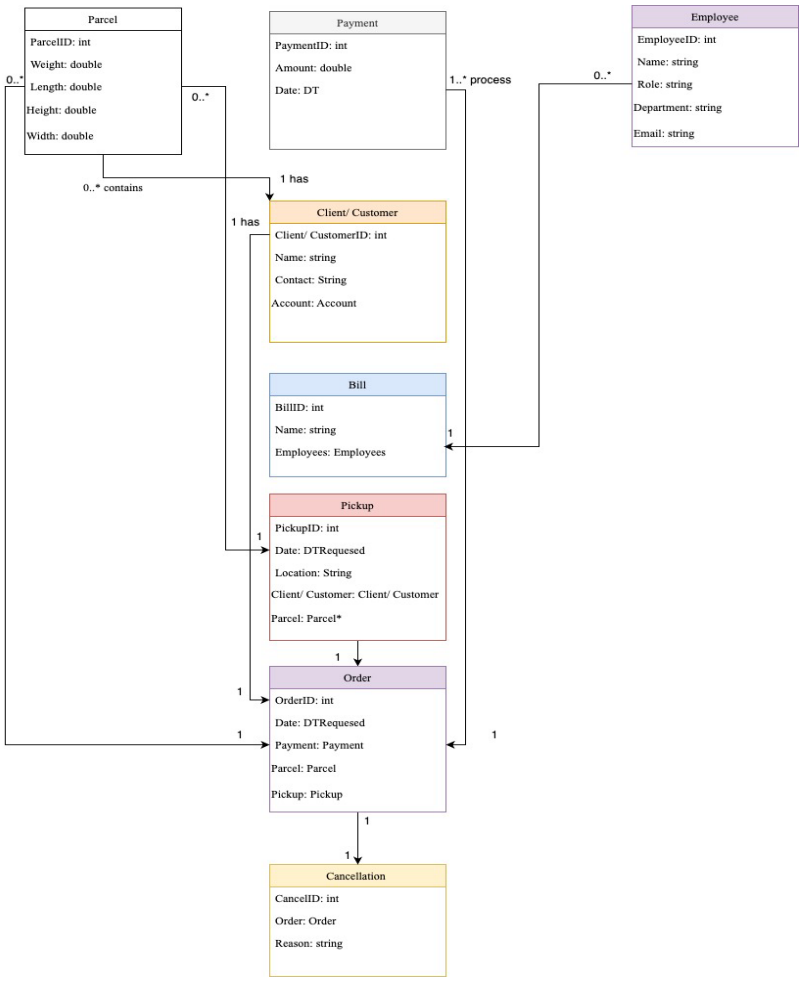
4. Finalized class chart:



(Source: Made by Draw.io)

Responses to Chapter 5 Questions: Use Case Modeling

(Revised)

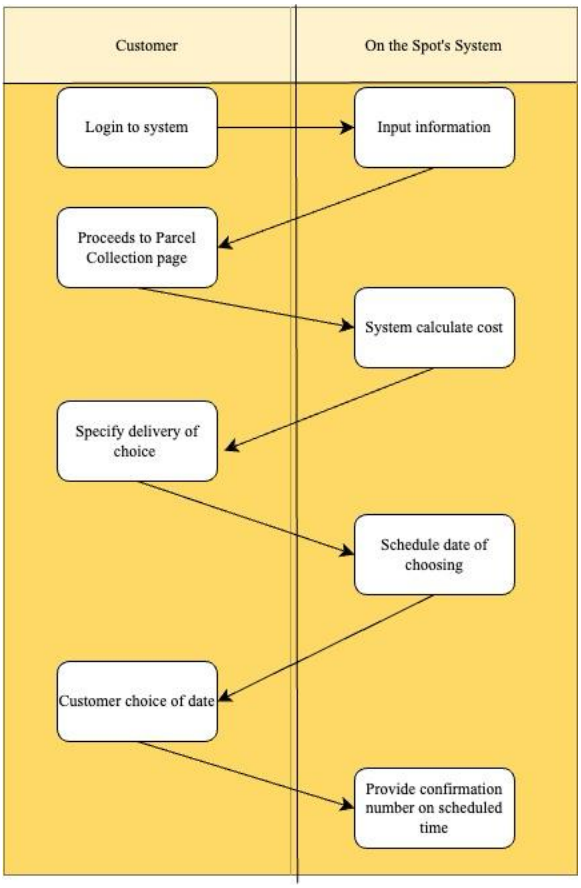
Author: Amaree Ryans, Saim Mahmud

Course: CIS 370---System Analysis and design

1. Used Case Description:

Use Case	**Requesting for Parcel-Collection**
Actors	• Customer • *On the Spot S*ystem
Description	This begins when a customer starts a request for a package parcel-collection with the *On-the-Spot* System. Then the system starts the process by allowing the customers to log onto their account and provide the necessary details about the panel
Pre-Conditions	Customers should; -already be registered for the *On-the-Spot* System. -have at least one parcel ready for collection. -logged in ready for any request.
Basic Flow	1. Login to system 2. Input information 3. Proceeds to Parcel Collection page 4. System calculate cost 5. Specify delivery of choice

	6. Schedule date of choosing 7. Customer choice of date 8. Provide confirmation number on scheduled time
Alternative Flows	-If information entered is incomplete/invalid, then the system will pompt the user for correction. - If issues come up, then customer can contact the systems admin for support.
Post-Conditions	The customers receive a confirmation of chosen schedule and track progress.



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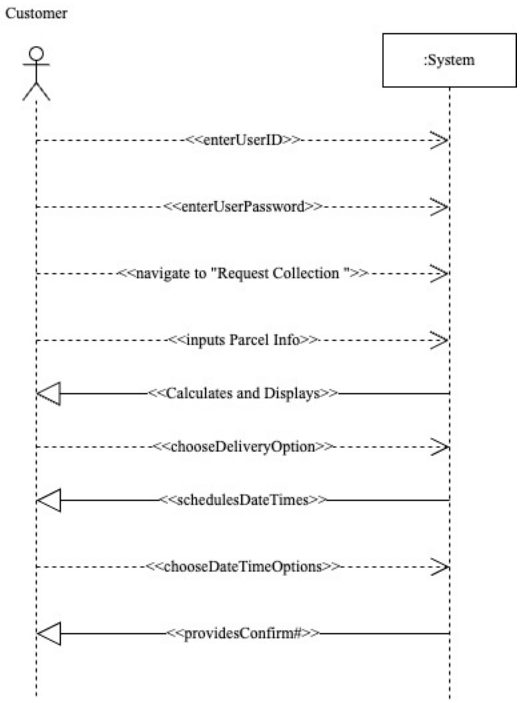


(Source: Made by Draw.io)

2. CRUD analysis table

Use Case\Classes	Parcel	Payment	Employee	Client	Bill	Order	Cancel	Collect
Place Order	C	C		C	C	C		
View Order			R	R	R	R		
Check Route			R	R	R			
Update Tracking			U	R	U	U		
Process Payment		C	CR	R	CR			
Void Parment	D	D	RU	R	RU	D	C	D
Scheduled Collection	U		CU	CU	CU	U		U
Cancel Order	D	D	C	C	C	D	D	D
Update Customer			UD (archive)	UD (archive)	UD (archive)			

Responses to Online Chapter B Questions: Traditional Approach to Requirements (Revised)

Author: Amaree Ryans, Saim Mahmud

Course: CIS 370---System Analysis and design

1. Case Tool research and findings

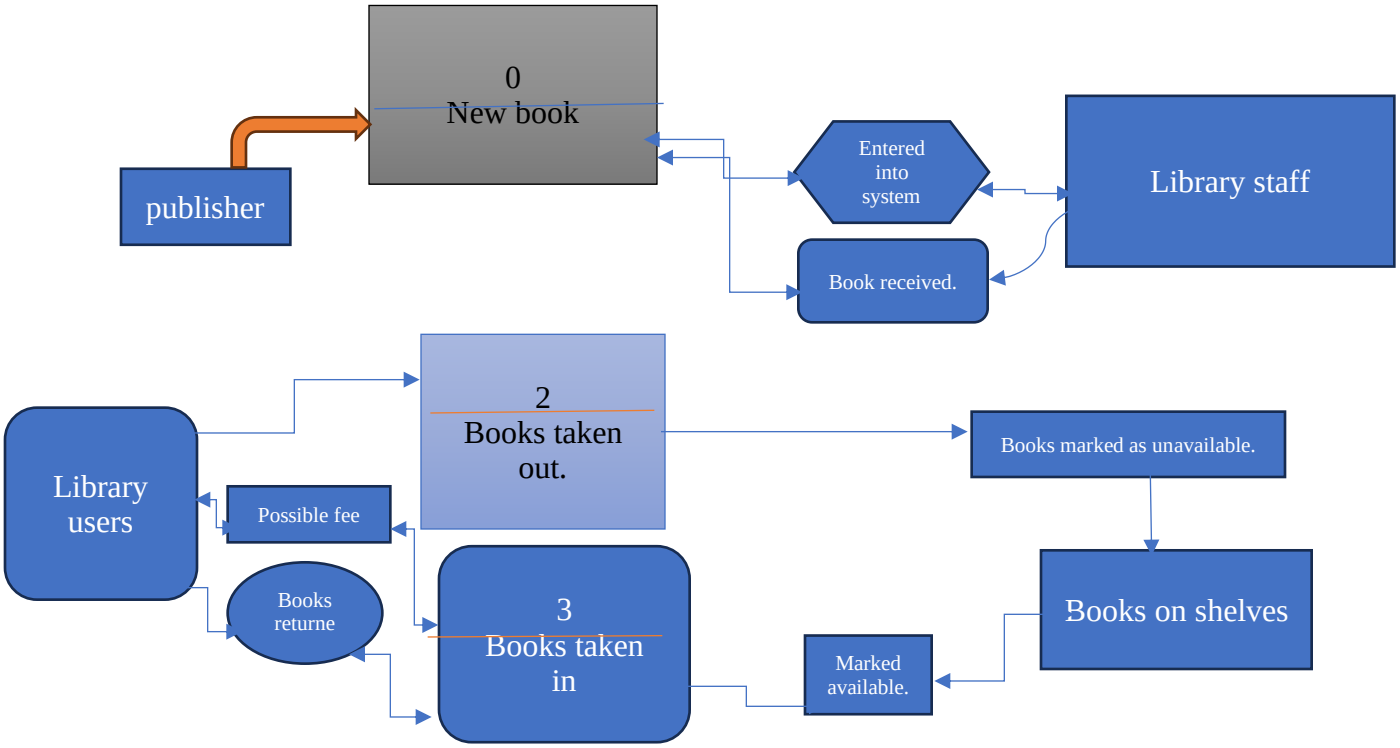
In my search for the right tools to help with drawing data flow diagrams (DFDs) for system development, I tried out a few different options. DFDs are handy for showing how data moves through a system, with symbols for the data, where it's going, and the processes it goes through.

The first one I looked at was a website called Smartdraw. It's not free, and you'll hit a wall asking for payment for a lot of the features, but they do offer a free trial. Smartdraw has loads of ready-made templates, which is super useful for getting started. Making a diagram from scratch is straightforward, and I liked how the lines and symbols moved together on the screen. However, having to pay to use the full version or to export your work was a bit of a pain.

Next, I gave Lucidchart a try. It also has some features locked behind a payment, but it didn't feel as pushy as Smartdraw. Although it's simpler and less polished than Smartdraw, getting started with a new diagram was easier. Lucidchart is good for basic needs and doesn't make things too complicated, but it doesn't help as much with alignment and such. Whether you like that or not might be a matter of taste. I personally found exporting diagrams from Lucidchart to be smoother than with Smartdraw.

The last one I checked out was Creately. This one doesn't make you pay right off the bat, which is great. It feels even more intuitive than Smartdraw to me. The layout has this grid system that snaps everything into place, making everything look organized without much effort. Adding and arranging shapes is a snap, and so is exporting your work. The only downside is the text function—it's a bit clunky compared to the others. But overall, Creately was the easiest to use and ended up being my favorite.

2. Context diagram: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New book
publisher
Entered into system
Library staff
Book received.
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Library users
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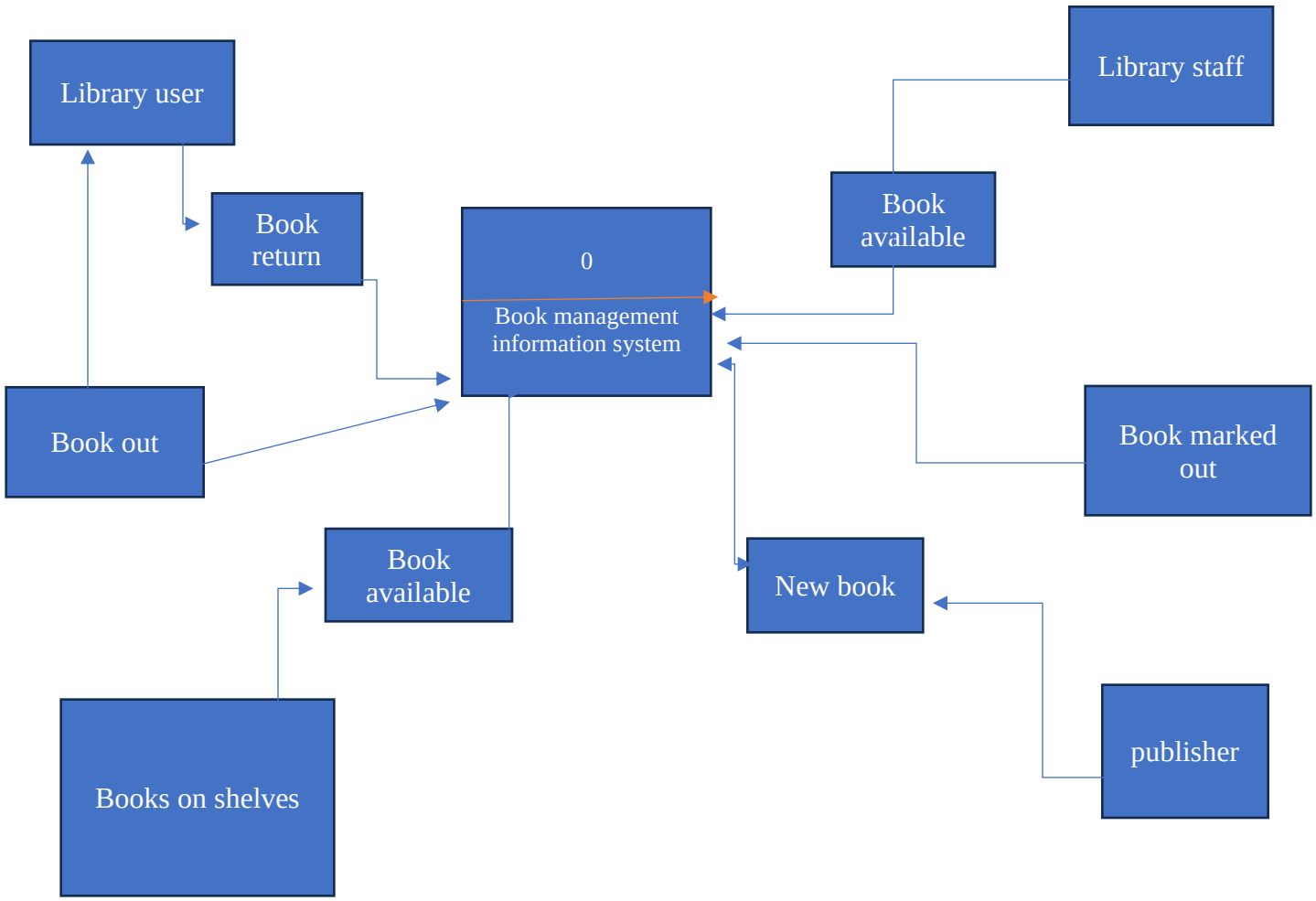
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