CHOI, CRAIG, DIXON BUSINES CONSUTING LLP
GROUP 6, SECTION 2

MYSTUFF

"DIGITAL LIFE MY WAY"

MyStuff Business Case

Choi, Craig & Dixon Business Consulting LLP

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Executive Summary

Business Case

Meyer Photography is gracefully embracing the paradigm shift from print and traditional photography to the world of digital photography and storage. The consultants have been tasked with incorporating digital photography and digital photograph management as the new flagship business products of Meyer Photography. With this re-evaluation of the business market, Meyer Photography has deemed appropriate a name change in conjunction with the new digital sector. Meyer Photography will now be known as MyStuff Digital Photography Solutions.

Meyer Photography has always been a prestigious brand for the Wasatch Front region, and the challenge is to create an equally prestigious and attractive digital photography solution that will contribute to an already illustrious reputation. This new business sector will improve the public image, attract new customers, and increase customer loyalty. MyStuff seeks to convey to customers their new slogan “Digital Life My Way”.

The new digital sector will include all digital markets, including but not limited to:

- Audio
- Video
- Hardware
- Communications
- Photography
- Television
- Radio

However because of the enormous scale of the undertaking, MyStuff has chosen to focus on a digital photography and digital photograph management. Through the success of the digital photography solution, they hope to be able to attract investors to fund their other business sectors in the future.

This report is an outline for the creation and implementation of the new MyStuff digital photography management suite.

System Capabilities

- Online purchase and product search
- User database with segregation for customers, employees, managers, and C-level staff
- Customer memberships for tracking purchases, repairs and digital storage
- Store inventory lookup
- Rental and repair in-store management
- Digital photography conversion for employees
- Digital photograph upload for customers
- Customer album sharing
- Item status edits (change from rental&sale to sale only, etc)
- Managerial overrides for late fees and damage schedules
- Order tracking
- Managerial inventory and rental reporting
- Drill-down reporting for C-level staff

Business Benefits

The benefits of the new digital business sector will not only benefit MyStuff, but the benefits will extend to the customers as well. Implementing this new service is seen as a win-win situation.

Meyer Photography will benefit through:

- Easy-to-use business reporting and tracking for managers
- Improved public image with new hardware in stores
- Understanding customers and buying habits
- Monthly revenue streams from digital storage
- Increased customer base because of expertise in digital photography
- Increased sales due to new click-and-mortar business model
- Increased market
- International exposure
- Lower operating costs
- Higher profit margins

Customers will benefit through:

- One-stop digital photography solution
- Reduced prices because of reduced overhead
- Options to be notified of sales and news
- Better tracking of orders and repairs
- Full control and worry-free photography storage
- Easy social sharing options

Risk Management

Risk Table

Risk	Impact	Likelihood	Detection Difficulty	Overall Risk Index	Preventative Actions	Contingency Plan
Earthquake	H	L	H	L		
Hacker gets into system	H	M	M	M	Security Best Practices, Intrusion Detection System	Weekly backups off-site with daily incremental backups
Internet unavailable at store	M	H	L	M	Check ISP reliability, pay for business class service	In-store intermediary server to store changes and push when back up
iPad Failure	M	H	M	M	Regular service for iPads	Each store has at least 2 registers. Keep extra iPad at HQ
in-store intermediary server goes down	M	M	L	M	Educate employees on server reboot. Regular server maintenance. Update hardware when exhibiting problems	iPads can alternatively connect directly to REST API through store internet
Key Personnel Turnover	M	H	H	H	Require job manuals to be written. Review job manuals at performance reviews	Keep employees in teams of 2. If one quits, the other will know somewhat what needs to be done
Zombie ApocolypsQe	H	L	H	M	Train employees on proper zombie eradication techniques. Zombie-proof server room	Sell all assets on ebay. Horde food and water into server room. Contact ZRT (Zombie Response Team)

There are several real risks for MyStuff. The preceding table identifies those that the consultants feel are the most real threats. The consultants have included recommendations which should be implemented to ensure good controls and backup procedures. Each of these controls are consistent with MyStuff's Recovery Time Objective of 1 day, and Recovery Point Objective of ten minutes.

Methodology

It is appropriate to include methodology in the section of risks, because the largest risk to projects is that the project will fail. To mitigate this risk, we suggest MyStuff follow the included Project time line (See page). We also suggest that the project manager and team adhere strictly to an agile-development perspective.

As this is the first new business sector implementation, it is difficult to anticipate exactly what the Digital Photography system should accomplish in its entirety. An agile methodology sufficiently accounts for changes in requirements and scope throughout the project, and allows development of the core processes and functionality first. Likewise, the focus of Agile Development is delivering a working system. This is essential for the profitability and success of this project.

Feasibility Study

Operational Feasibility

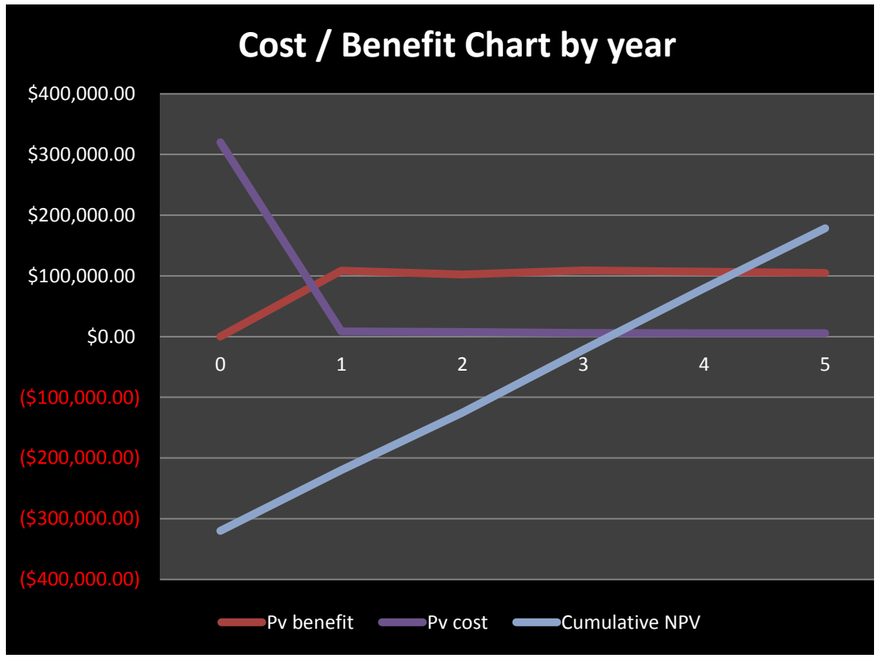
MyStuff has decided to embrace a unique market opportunity. There are many photo-sharing services available on-line but click-and-mortar photo sharing companies are few and far between. The new Digital Photography sector sufficiently satisfies the requirements put forth by MyStuff owners and key personnel as a system that will offer a reliable service that solves the need of customers for a one-stop photo solution.

Resource Feasibility

The new Digital Marketing division will put a large strain on the current operations of MyStuff employees and managers alike. As with any paradigm shift, employees will need to re-learn their jobs and processes.
We hope that by adopting Agile Development users will feel like they are attached to the system before it surfaces, and will aid instead of hinder the project.

Economic Feasibility

	Rate	0.06					
	Year	0	1	2	3	4	5	Sum
1	Benefit	$0.00	$115,000.00	$115,000.00	$130,000.00	$135,000.00	$140,000.00	
2	Pv benefit	$0.00	$108,490.57	$102,349.59	$109,150.51	$106,932.64	$104,616.14	$531,539.45
3	Cost	$320,000.00	$8,800.00	$8,800.00	$6,900.00	$7,100.00	$8,000.00	
4	Pv cost	$320,000.00	$8,301.89	$7,831.97	$5,793.37	$5,623.87	$5,978.07	$353,529.16
5	Discount factor	1.0000	0.9434	0.8900	0.8396	0.7921	0.7473	
6	Difference	$0.00	100,188.68	94,517.62	103,357.13	101,308.78	98,638.08	$498,010.29
7	Cumulative NPV	($320,000.00)	($219,811.32)	($125,293.70)	($21,936.57)	$79,372.21	$178,010.29	
8	Payback period	3.22 years						
9	ROI with discount =	50.35%						



MyStuff will need to hire various systems professionals and purchase many pieces of sophisticated hardware to start. As a result, we project a necessary $320,000.00 investment in the first year in order to produce a successful product. We also predict a sizable upkeep costs above regular employee salaries, with costs dropping slightly after the third year, and climbing slightly thereafter as the system ages and new components are installed.

Although this constitutes a sizable investment, we predict that MyStuff will reap the benefits of a niche market, reaping a first-to-market competitive advantage. The expected payback period is 3.22 years, quickly returning all investment monies. The expected ROI is 50% over 5 years, easily eclipsing the market average 10% yearly, and clearly a better investment than the DOW index, which has returned an average of -6% over the past five years.[1]

Implementation Recommendations

Hardware (for all the stores):

- 7 - iPad 4 (6 in store, 1 extra)
- 3 – IMac (for photo converting)
- External hard drives
- For the network:
  - Router
  - 3- Server
  - 3-Cisco wireless-N router

Each store has it's own LAN that is encrypted.
Each LAN has a server that pushes the changes up to the cooperate database via VPN

Software:

- Website
- I-pad app
- Digital media conversion software

Conclusions

In conclusion, we congratulate the Meyers on successful market research and investment vision. We believe that with sufficient vision and vigilant project management, MyStuff Digital Photography System can be a success, gracefully carrying MyStuff into 2020 with soaring profits and a promising future.
The consultants offer their skills as a product development team or as continuing consultants on an as-needed basis.

1. http://www.forecast-chart.com/historical-dow-industrial.html

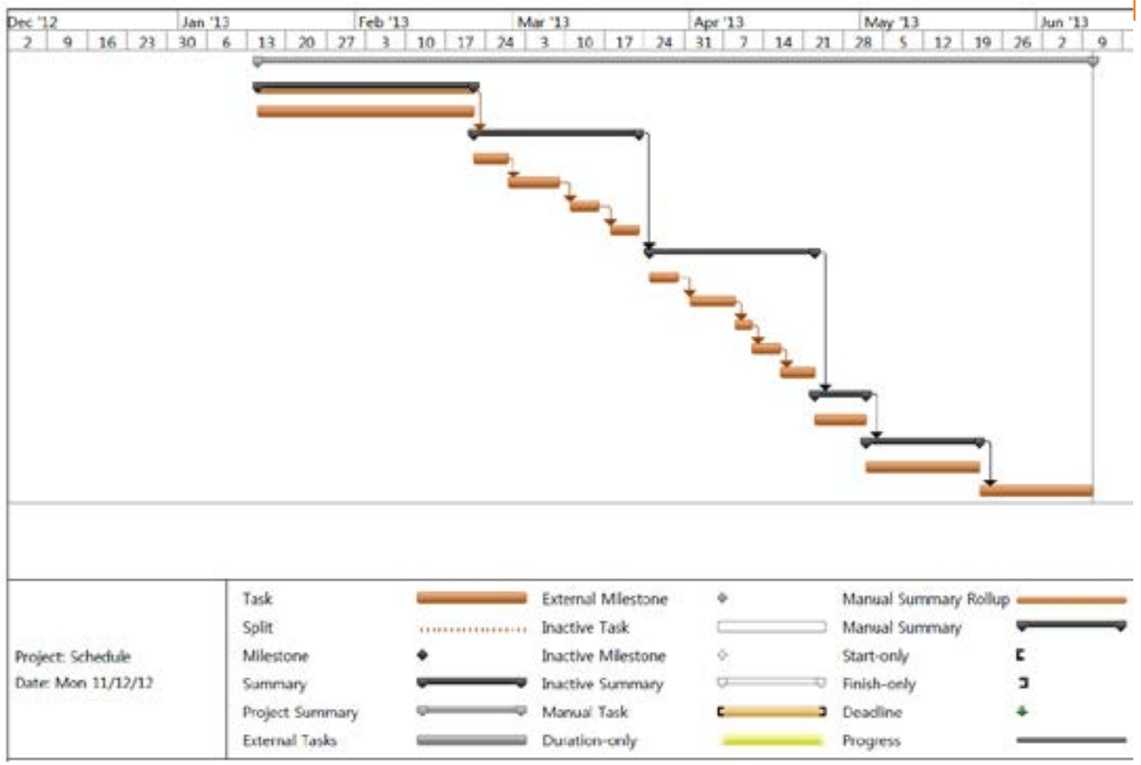
Project Iteration Schedule

Iteration Table

Iteration	Time estimate	Details assigned to iteration
1	4 weeks	Build inventory management system - Create item database
2	3 weeks	Build Store administration system - Link to inventory management system - Store level item management - Rental management - Repair management
3	3 weeks	Build website - Employee management - Customer management (Membership) - Employee view - Customer view (includes backup service) - Link to inventory management system
4	1 week	Install system to each store - Connect to store/inventory system
5	2 weeks	Build backup system - Daily backup/store the data from each system
6	2 weeks	Clean up, final test, startup site.
Total	15 weeks	

Schedule Details

Task Name	Duration	Start	Finish
Schedule	**105 days**	**Tue 1/15/13**	**Mon 6/10/13**
Build inventory management system	**28 days**	**Tue 1/15/13**	**Thu 2/21/13**
Create item database	28 days	Tue 1/15/13	Thu 2/21/13
Build Store administration system	**21 days**	**Fri 2/22/13**	**Fri 3/22/13**
Link to inventory management system	4 days	Fri 2/22/13	Wed 2/27/13
Store level item management	7 days	Thu 2/28/13	Fri 3/8/13
Rental management	5 days	Mon 3/11/13	Fri 3/15/13
Repair management	5 days	Mon 3/18/13	Fri 3/22/13
Build website	**21 days**	**Mon 3/25/13**	**Mon 4/22/13**
Employee management	5 days	Mon 3/25/13	Fri 3/29/13
Customer management (Membership)	6 days	Mon 4/1/13	Mon 4/8/13
Employee view	3 days	Tue 4/9/13	Thu 4/11/13
Customer view (includes backup service)	3 days	Fri 4/12/13	Tue 4/16/13
Link to inventory management system	4 days	Wed 4/17/13	Mon 4/22/13
Install system to each store	**7 days**	**Tue 4/23/13**	**Wed 5/1/13**
Connect to store/inventory system	7 days	Tue 4/23/13	Wed 5/1/13
Build backup system	**14 days**	**Thu 5/2/13**	**Tue 5/21/13**
Daily backup/store the data from each system	14 days	Thu 5/2/13	Tue 5/21/13
Clean up, final test, startup site.	14 days	Wed 5/22/13	Mon 6/10/13



Essential Use Case List

The follow is a list of most essential or basic use cases that MyStuff system need to meet. A “use case” in a system is a list of steps, typically defining interactions between a role and a system, to achieve a goal. The actor can be a human or an external system. Each use case in the list is represent the core goals of MyStuff. The following pages will demonstrate more details with use case diagrams, full use case descriptions, activity diagrams, system sequence diagrams, and mockups.

Use Case List
1. Sale in store
2. Online sale
3. Digital photo service
4. Item repair
5. Rent item
6. Return item
7. View report
8. Create membership

System Menu Hierarchies

Menu hierarchy for MyStuff website

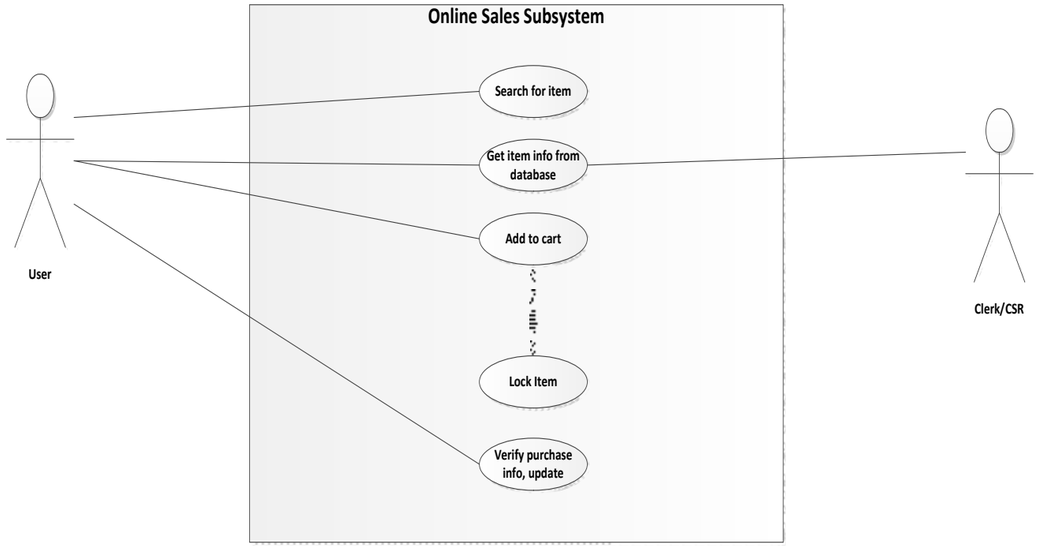
- Home
  - sign in
  - digital camera finder
  - check out
    - shipping info
    - billing info
    - Cameras
- Memory & Storage
- Lenses & Accessories
- My Account
  - User
    - photo upload center
    - rental status
    - epair status
  - Adminisitrator
    - Photo upload center
    - Rental
    - status repair status
    - Reports
    - Sales report

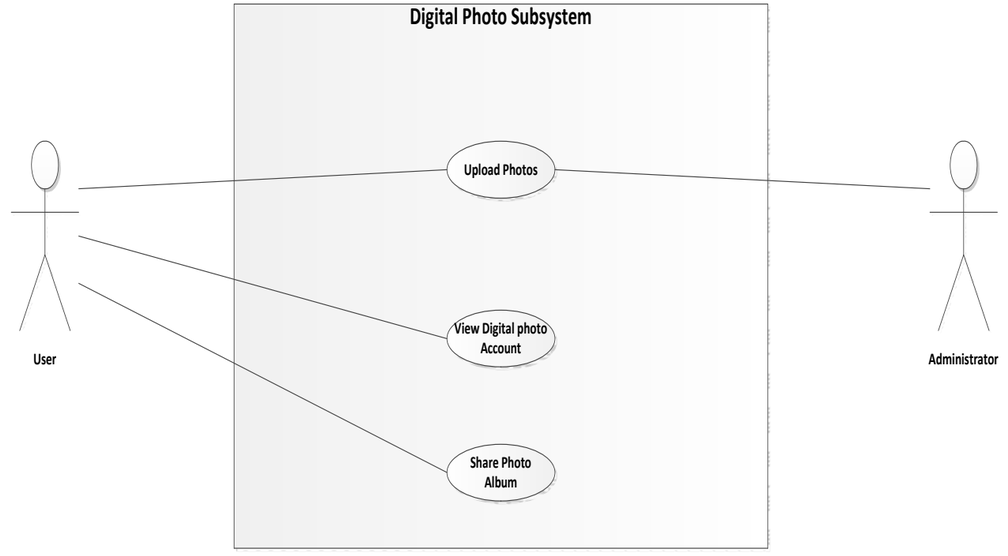
Login

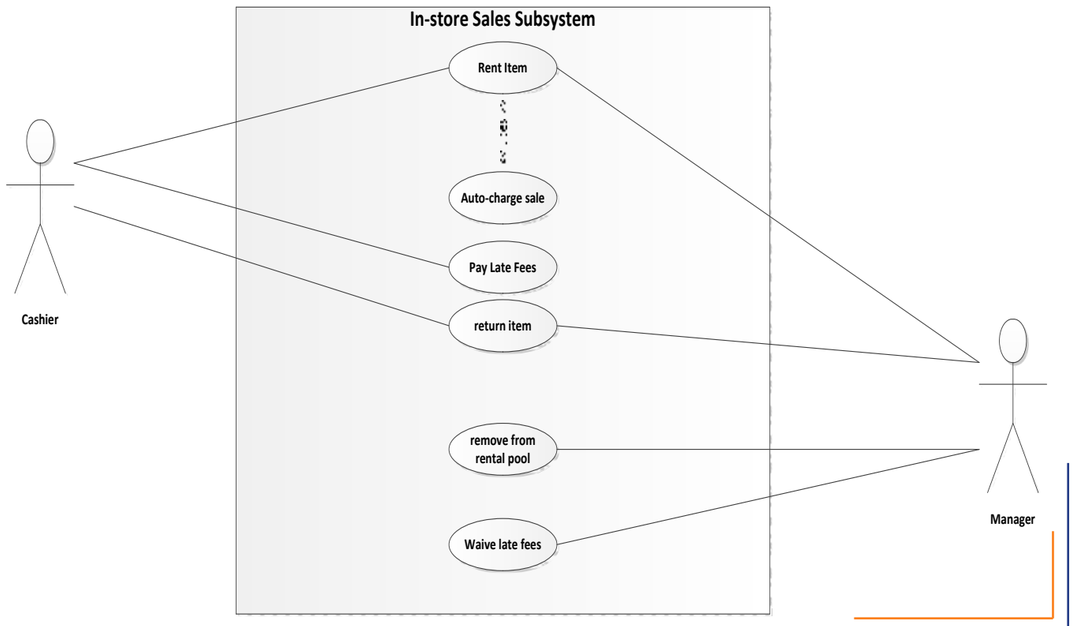
- Administrator (Manager)
  - Employees
    - Edit
    - View Stats
  - Reports
    - Inventory
    - Sales
    - Rentals
  - Edit Item
    - Edit Details
    - Delete
  - Cash Register
    - Discount Rental Late Fee
- Cashier
  - Member Check-in
    - By Card, Phone Number
  - Rent
  - Checkout
  - Enter Repair
  - Item Pickup
  - Lock Workstation

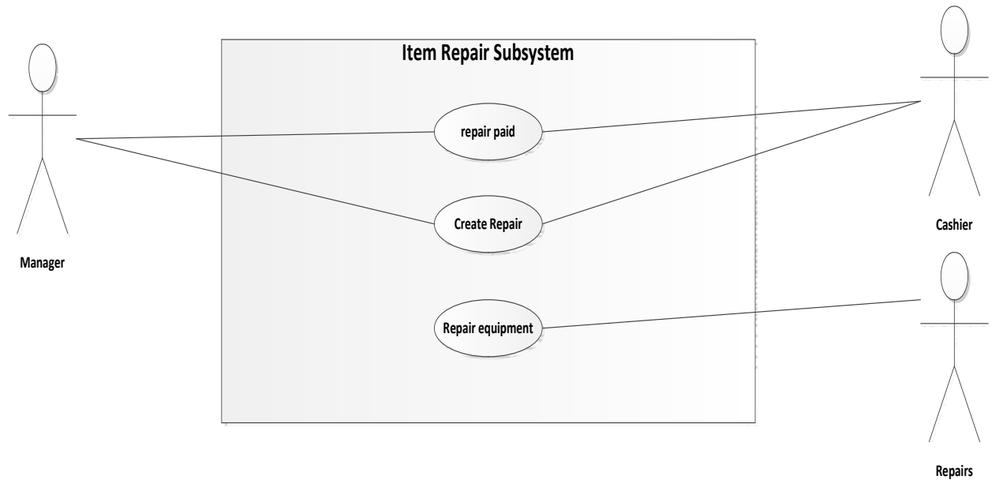
Logout

Use Case


Online Sales Subsystem
Search for item
Get item info from database
Add to cart
Lock Item
Verify purchase info, update
User
Clerk/CSR


Digital Photo Subsystem
Upload Photos
View Digital photo Account
Share Photo Album
User
Administrator


In-store Sales Subsystem
Rent Item
Auto-charge sale
Pay Late Fees
return item
remove from rental pool
Waive late fees
Cashier
Manager


Item Repair Subsystem
repair paid
Create Repair
Repair equipment
Manager
Cashier
Repairs

Event Table

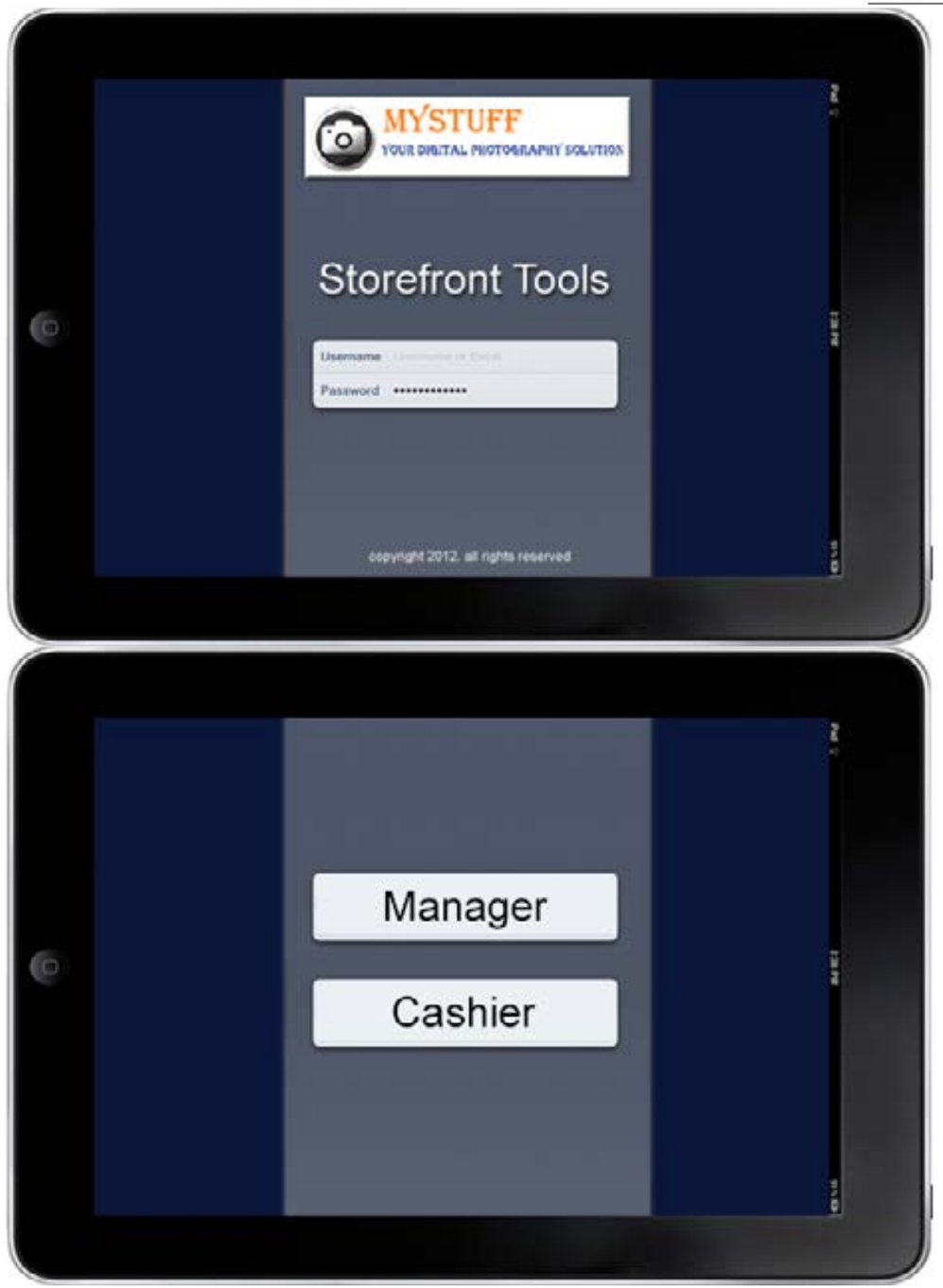
Online Sales Subsystem					
Event	**Trigger**	**Source**	**Use Case**	**Response**	**Destination**
Customer wants to find item on website	Customer needs to find item	User	Search for item	Items with criteria	web server
Customer view item	customer click on item	User	Get item information from Database	Item page	web server
Customer add item to cart	Customer click "add to cart" and select delivery method	User	Add to cart	Added to cart page	web server, database
Check out	Customer click on "checkout"	User	Verify purchase information (payment, shipping, etc), update database	Receipt of checkout	web server, database
Item to cart	Item added to cart	website	Lock item	Lock item	database
In-Store Sales Subsystem					
Event	**Trigger**	**Source**	**Use Case**	**Response**	**Destination**
Item rented	Item rented	cashier/manager	Rent Item	Add rental to store, lock item	database
Item returned	item returned	cashier/manager	Return Item	Remove rental from store, unlock item	database
Item marked for repair	item marked for repair	cashier/manager	Create Repair	Move item to repair pool and create work order	database
Repairs/fees paid	Repairs paid update by manager/cashier/website	cashier/manager	Repair paid	payment confirmation	database
Late fees waved	Late fees waved on item	manager	Waive late fees	fee waiver confirmation	database
Auto-sell	Item more than five days late	system	auto-charge card, mark as sold		database
Pay late fee	Return item late	cashier/manager	Pay late fee	Payment confirmation	database
Item Repair Subsystem					
Event	**Trigger**	**Source**	**Use Case**	**Response**	**Destination**
Item marked for repair	item marked for repair	cashier/manager	Move to repair pool	Move item to repair pool and create work order	database
Repairs/fees paid	Repairs paid update by manager/cashier/website	cashier/manager	Repair paid	payment confirmation	database
Repair Equipment	Item repaired by Repairs Dept	Repairs	Repair equipment	Equipment repaired, notify customer	database
Digital Photo Subsystem					
Event	**Trigger**	**Source**	**Use Case**	**Response**	**Destination**
Upload photos	Upload photos into system	administrator/user	upload photos	photos added to account	Digital photo subsystem
Access photo-backup account	Login and click on photo-backup account	user	View Digital Photo Account	show digital photos	digital photo subsystem
Share Photo Album	Want to share online photo album	user	Share Photo Album	share album link sent	digital photo subsystem

Application Diagrams and Mock-ups

In-Store iPad Interface

Old-style cash registers will be swapped out in all stores in favor of a more tech-forward approach. All registers will be iPads, doubling as reporting centers for each store. The following diagrams the views and functionality found within each iPad Cash Register.

The decision to eliminate a manager computer was made in an effort to focus all employees on the customer. If business is particularly slow, then the manager may perform his or her managerial duties involving inventory and reporting. However, if there are customers who need attention, the manager will be unable to perform secondary duties due to cashier demand, and will be naturally encouraged to become more involved with storefront staff and customers.



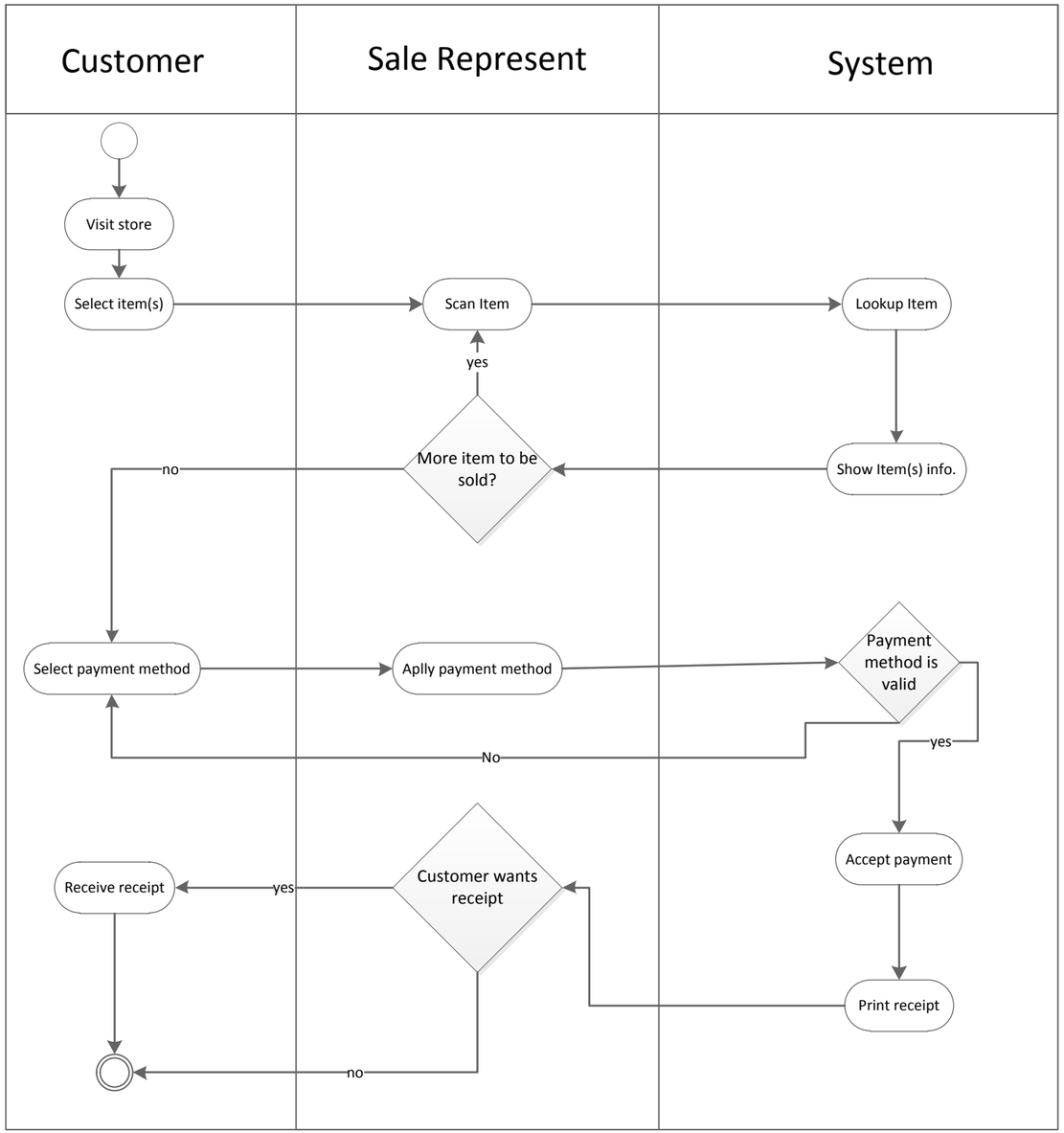
The Login screens enable employees to login to terminals to perform their duties. Personalizing registers improves reporting, enabling management to track a transaction from start to finish. If a manager logs in, the second screen is presented, enabling the manager to choose between cashier and managerial tasks.

The cashier chooses from a variety of functions on the left. These views show the different options available when a cashier chooses either “Rent” or “Purchase”.

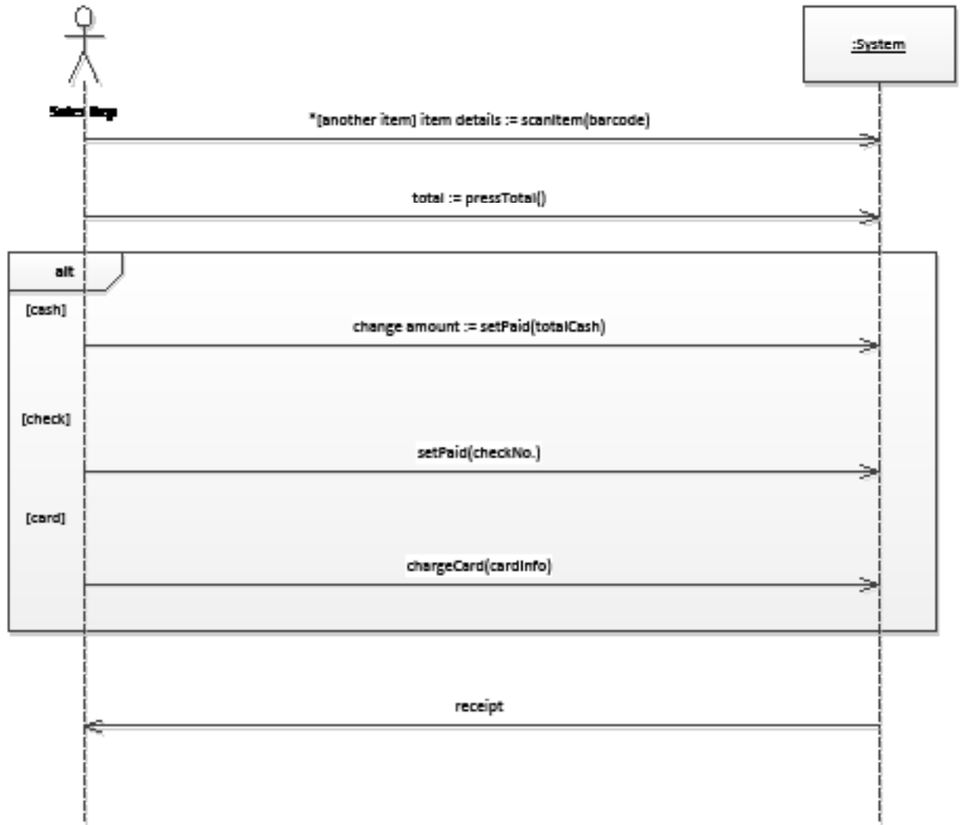
Buy Item From Store

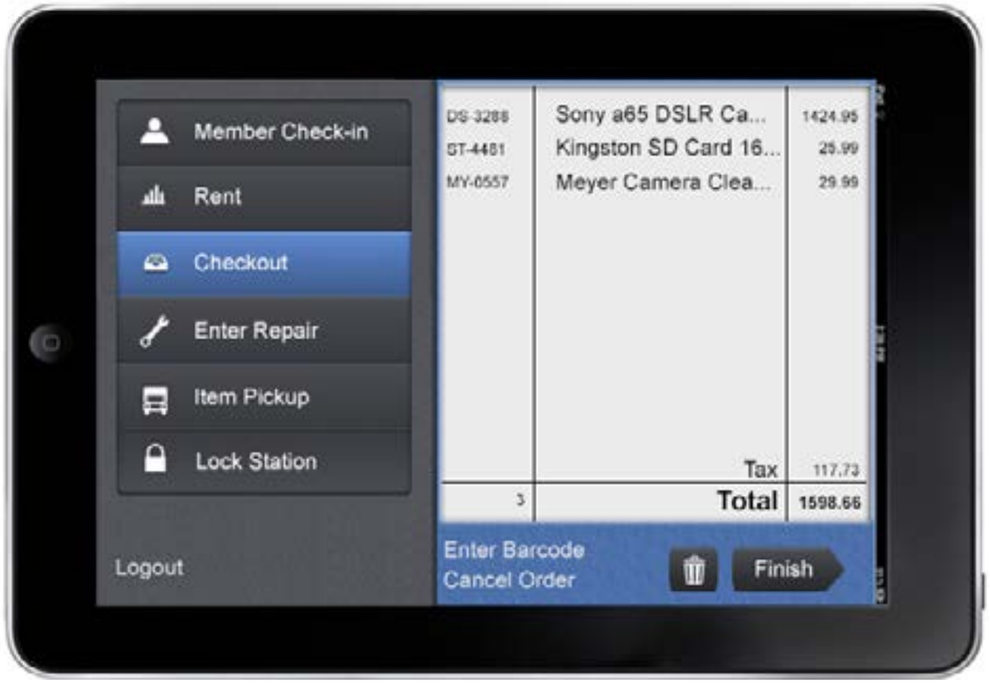
Use Case Name	Buy items from store	
Scenario	Buy an item from store	
Triggering event	Customer wants to buy an item from store	
Brief description	Customer make a transaction that buying (an) item(s) from store. An employee takes care of the transaction.	
Actors	Customer, Sales Rep	
Related use cases	Customer, Sales Representative, Store sales representative	
Stakeholders	Customer, store employees	
Preconditions	Store is opened and has item that wanted to be sold. Customer is able to pay for the item.	
Postconditions	Customer paid the item. Transaction finished.	
Flow of activities	**Actor**	**System**
	1. Customer pick items to buy. 2. Sales Rep. create a transaction 4. Customer select payment method 5. Sales Rep. apply the payment method 7. Sales Rep. give or discards the receipt as the customer wish.	2. Lookup the item 3. Show the price 5. System accept the payment method 6. Print receipt
Exception conditions	The payment method is invalid. Item is not in the inventory	

Buy item from store



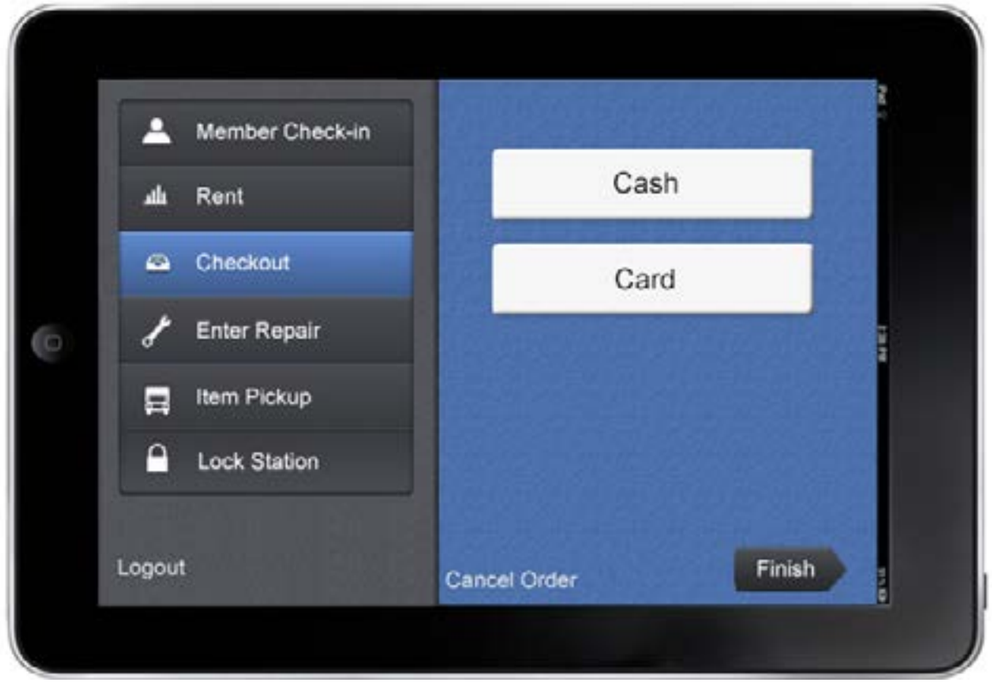
Buy Item From Store - SSD





This is the view that many cashiers will be familiar with. Similar to many cash registers, this view allows employees to scan items by RFID or bar code for less expensive items. Customers may pay in cash, or via credit card, through an integration with Sqares technology. This same unit enables mobility meaning that employees can easily pack up and head to a trade show, using the same procedures as in-store to sell merchandise.

The return item view is exactly the same, except the writing is the color MyStuff Orange, indicating to the cashier on first glance that the application is in return mode



This screen is the result of pressing finish on a customer order when in purchase mode. This screen instructs the cashier to either collect payment through cash or credit card.

On the next page, there rae the two screens for checking out with a credit card, or via cash, respectively. The credit card screen instructs the cashier step-by-step, instructing first to scan the customer's card, await approval, and finally to print a receipt of the sale should the customer desire.

The bottom screen shows the checkout process when cash is involved. The application simply tells the user the amount to be collected, asks for the amount received, and allows the cashier to print a receipt of the transaction.

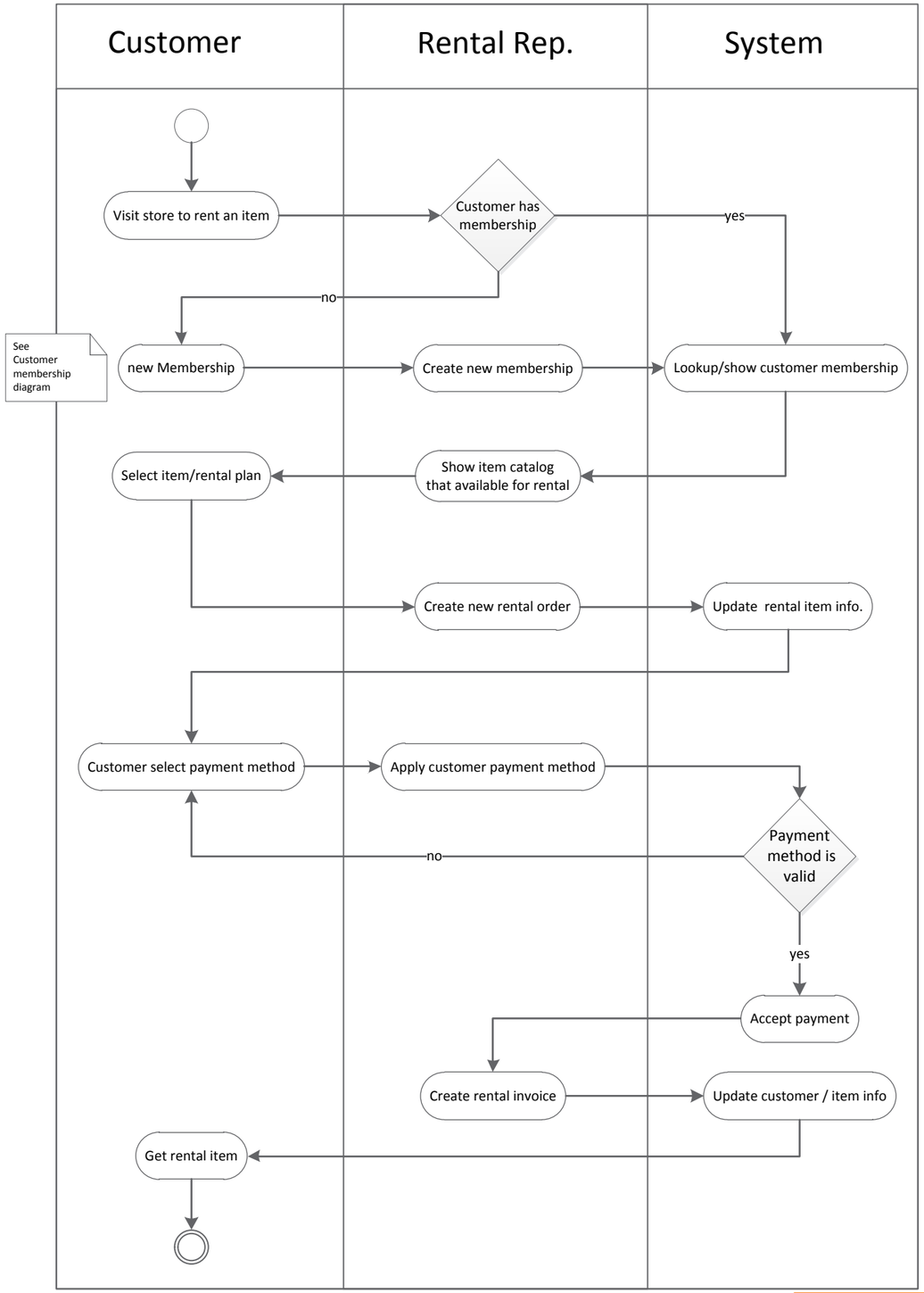
Selecting Finish on either screen will cause the application to return to the first checkout screen.

Rent and Return Rented Items

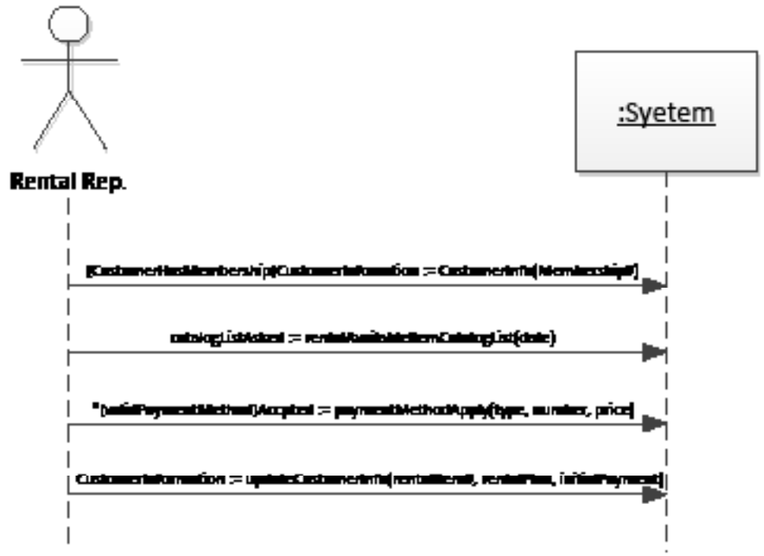
Rent Equipment Use Case

Use Case Name	Rent equipment	
Scenario	Customer enter the store for renting equipment	
Triggering event	Customer wants to rent an equipment.	
Brief description	Customer triggers a transaction that rental equipment from store. An employee takes care of the transaction.	
Actors	Customer, Rental Rep. System	
Related use cases	Customer, Customer membership	
Stakeholders	Customer, Rental Rep.	
Preconditions	The equipment wanted to rent is one of kinds that under system. Customer must have a membership	
Postconditions	The rental transaction done.	
Flow of activities	**Actor**	**System**
	1. Customer create a rental order.	1. Lookup the equipment S/N
	2. Rental Rep. receive the repair order	2. Create new repair
	3. Rental Rep. create invoice for item	
	4. Customer selects payment method / create payment	4. System accepts the payment method / delivery method
	6. Customer receive item	5. Update customer membership info. with new rental equipment
Exception conditions	Rental period is done	

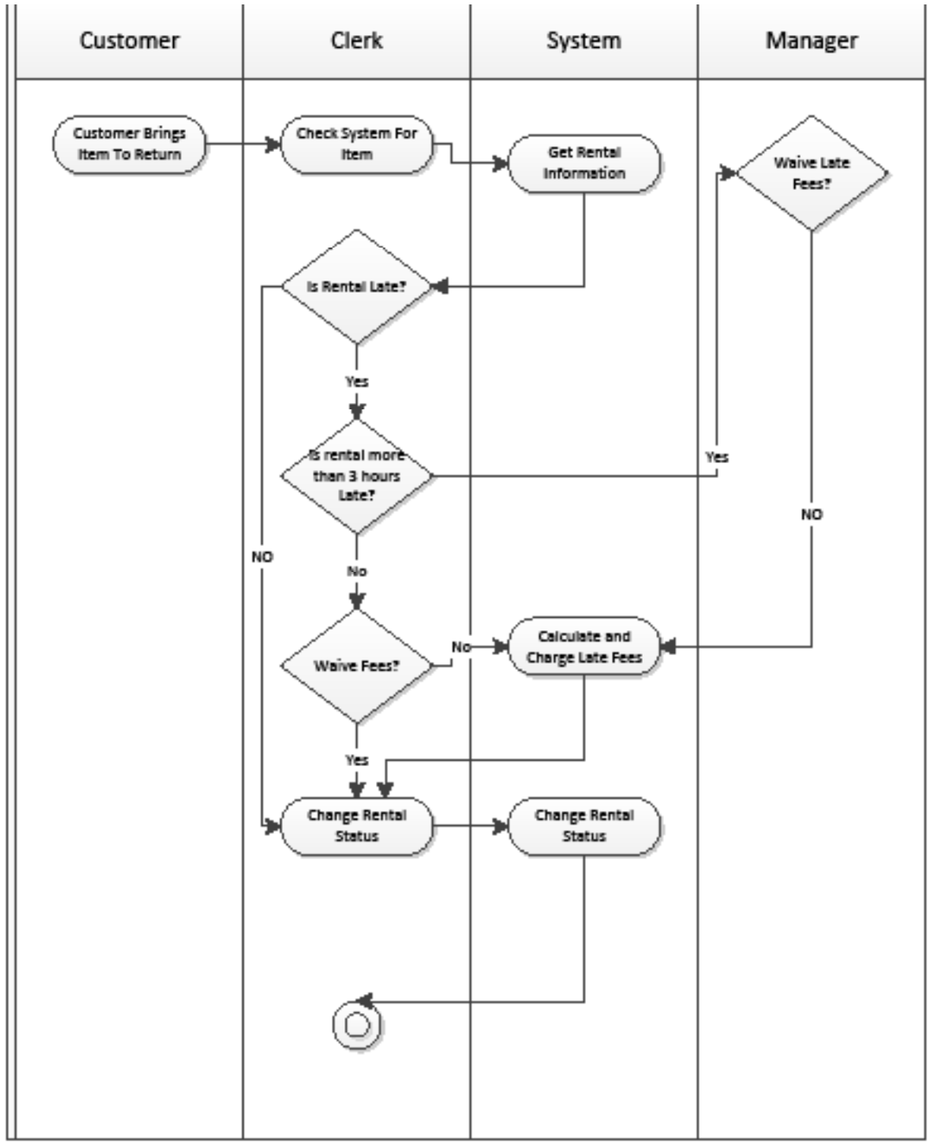
Rent Item Activity Diagram

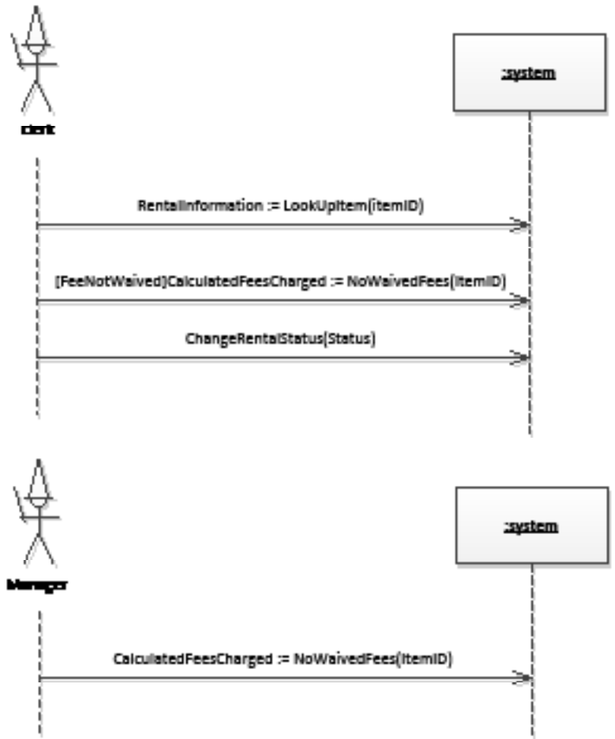


Rent Item SSD

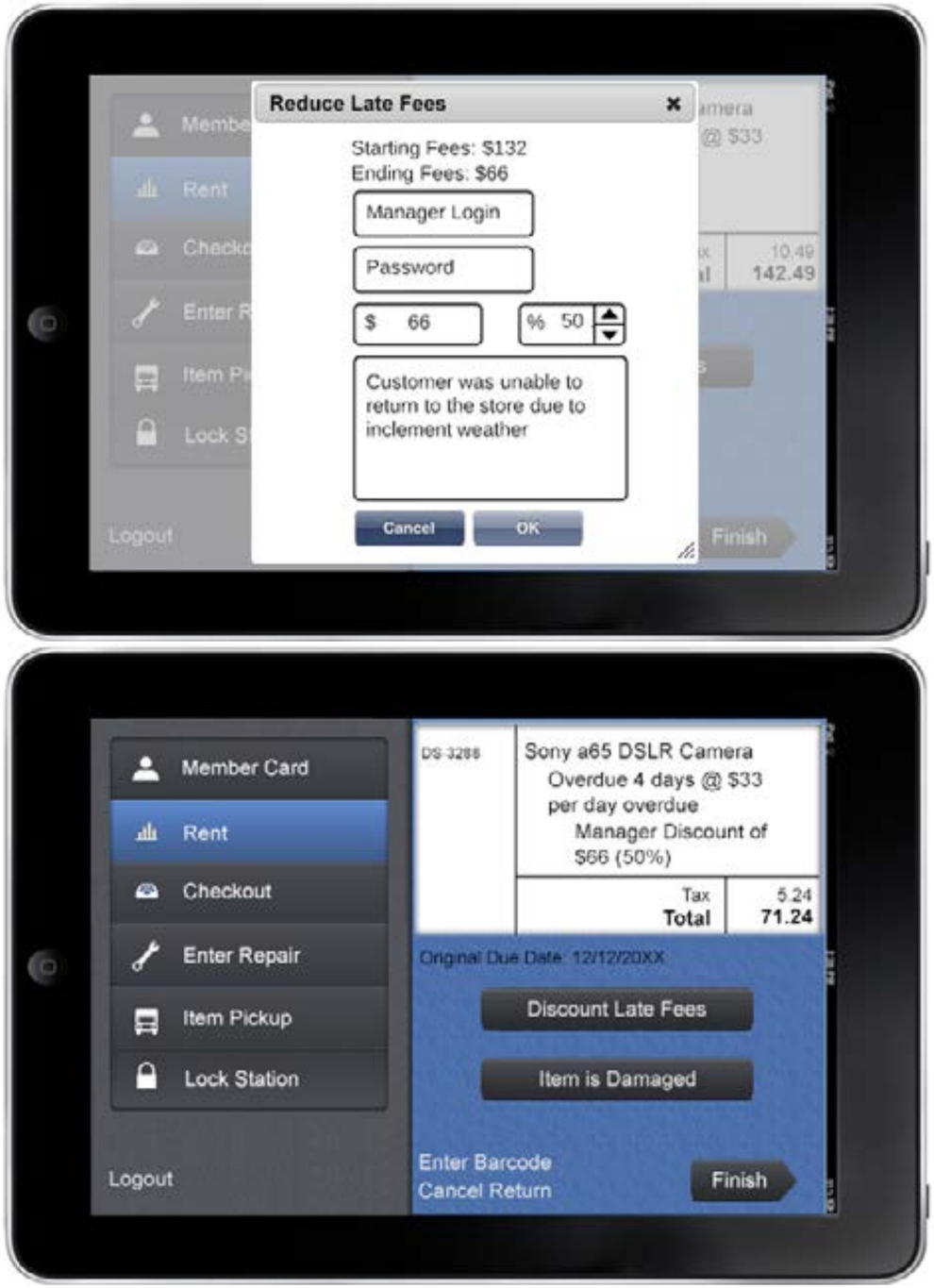


Use Case Name	Return Rented Equipment	
Scenario	Return an item that a customer has rented	
Triggering event	Customer comes in to return an item that they had rented	
Brief description	A customer has rented equipment and now needs to return it and pay any late fees if applicable.	
Actors	Clerk, Manager	
Related use cases	Invoked after the Rental Use case has processed the item, repair equipment use case if item is damaged	
Stakeholders	Management, Clerk, acounting, customer	
Preconditions	Equipment must be previously rented	
Postconditions	Item must be returned and back in the system	
Flow of activities	**Actor**	**System**
	1. Clerk searches for item 2. If Late possibly waive fees 3. Sales person marks item as Returned	1. Finds Rental Information 1.2 Determines if it is Late 2. If fees are not waived, calculate and charge account 3. Change rental status
Exception conditions	1. Item is damaged	





This view shows the two screens for renting items from MyStuff. The screen on the top shows the rental options and the screen on the bottom shows a customer returning items. The “Discount Late Fees” button functionality is shown on the next page. If the item is returned damaged, the item is damaged button allows the cashier to go to the repair item screen (page 23) to set up a repair schedule, and brings the cashier back after repair payment.



The top view shows the view when a cashier presses the “Discount Late Fees” button. This view enables the cashier to enter all discount information if they wish, but requires a managerial login and approval to process the discount. The two fields with percentage and dollar amount are linked, and change together. The second view is the transaction post-discount.

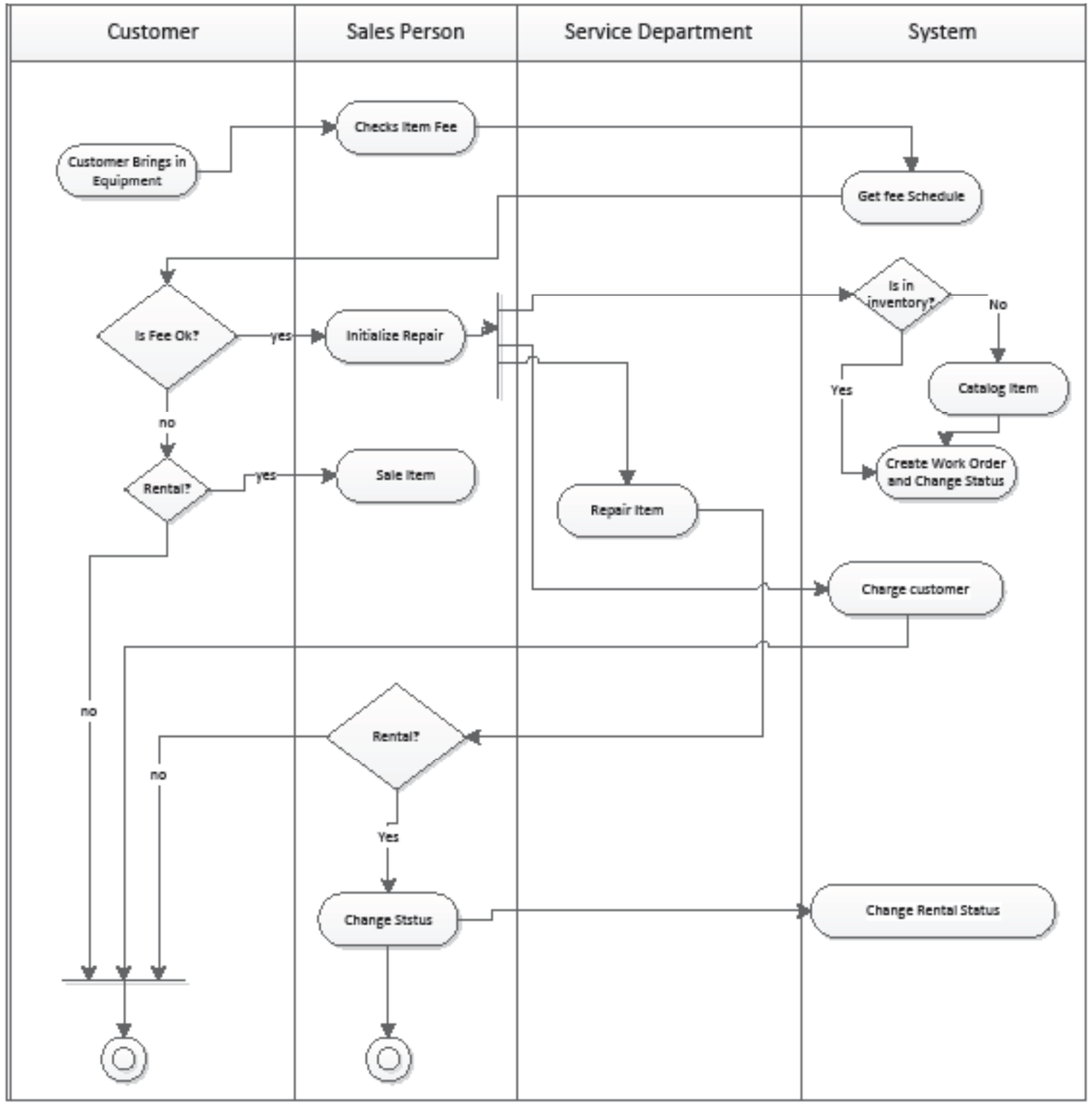
This view shows the page when customer navigate rental status under My Account on website.

Repair Equipment

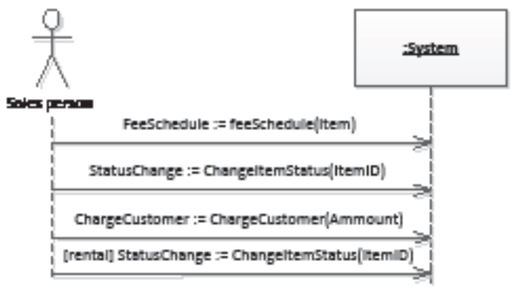
Repair Equipment Use Case

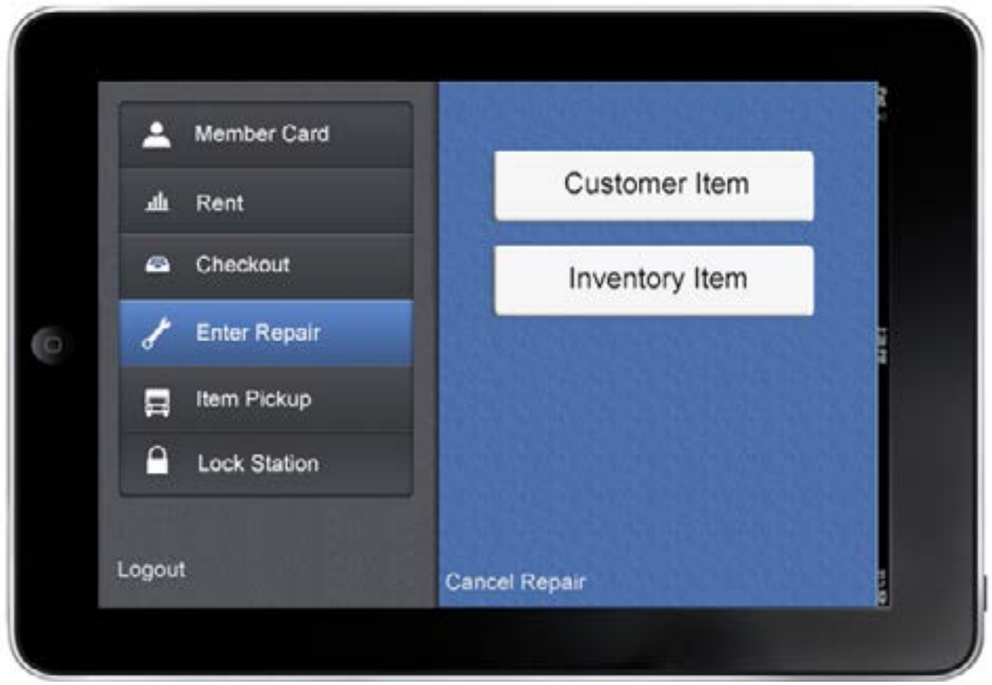
Use Case Name	Repair Equipment	
Scenario	Repair customer or rental equipment	
Triggering event	Customer wants to repair their own equipment, rental equipment needs repair	
Brief description	A customer has equipment needed for repair and brings in the equipment for repair or a returned rental needs to be repaired.	
Actors	Product-line managers, service department workers, sales clerk	
Related use cases	May be invoked by Rent Equipment use case if the returned rental item is damage, when finished may invoke the Mark Rental Item For Sale use case.	
Stakeholders	Management, Service departmen workers, accounting	
Preconditions	Equipment must be previously rented (if it is a rental repair), Customers personal equipment must be damaged	
Postconditions	Customer must be charged for the repair, (if rental item) item must be changed from repair status to rental status or sale status	
Flow of activities	**Actor** / **System**	
	1. Check Item Fee chart 2. Adds item to the system 3. Sales Person worker marks Item as Repaired	1.1 Get fee schedule 1.2 return Fee schedule 2.1 Is it in inventory? Yes, Create Work order, change item status. No Catalog, then create work order and change status. 2.2 Charge Customer 3 system records the Repair status.
Exception conditions		

Repair Equipment Activity Diagram



Repair Equipment SSD





The above view is what the cashier says directly after click on on the Enter Repair button. Inventory Item button is what the cashier chooses if an inventory item is damaged and needs to be repaired. This is for when either a customer has rented an item and found it inoperable (another customer returned the item broken, but the needed repair was not recognized when the item was returned), or if an item somehow became damaged in inventory storage, or another exception case.

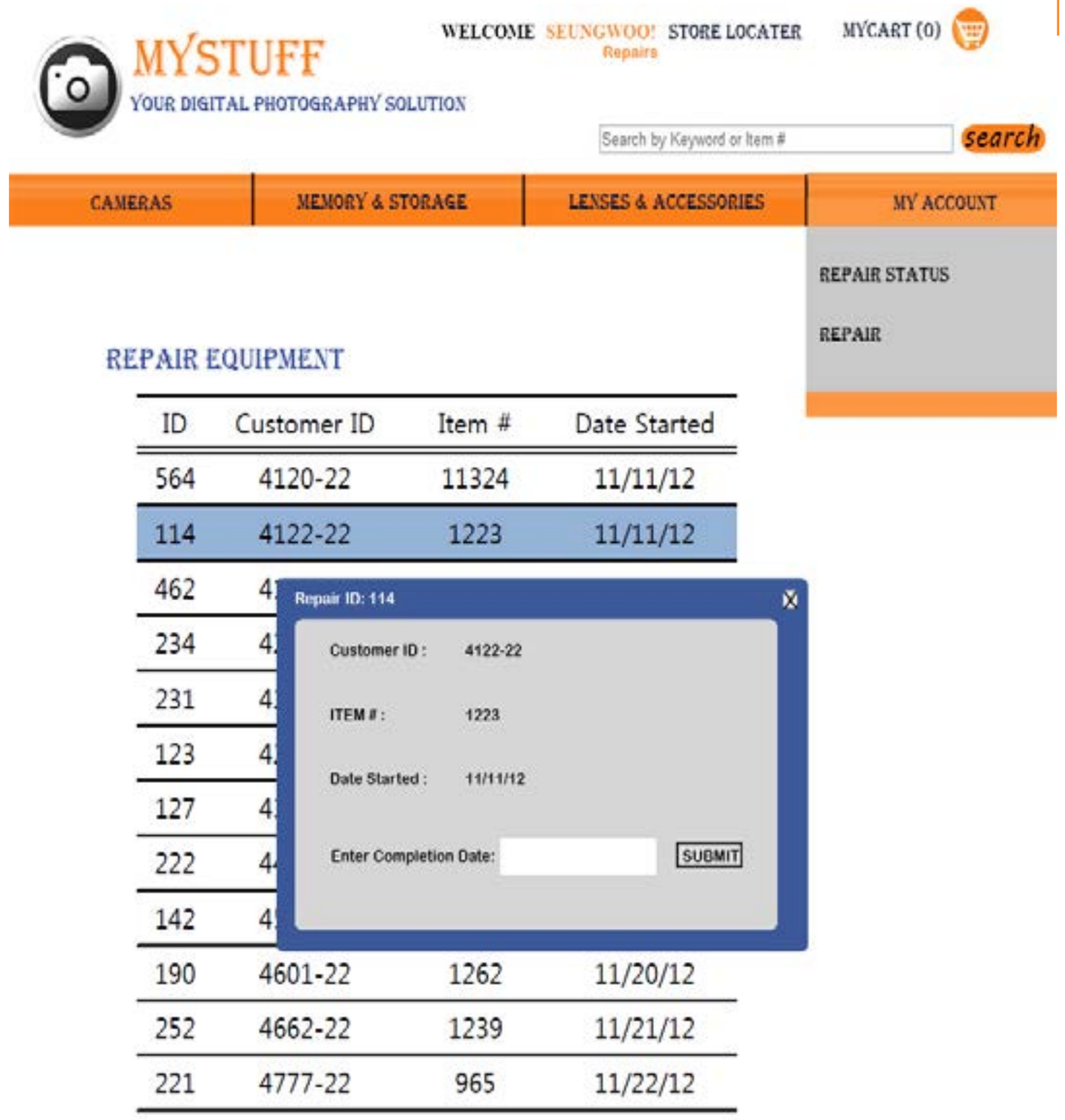
After pressing the inventory item, or coming into the repair directly from the rented item use case the cashier will see the bottom right screen, and will scan the item's RFID or bar code to start the repair.

The top view is for repairing an item that belongs to a customer and does not have a bar code or RFID. The cashier logs the information into the system, and the item is assigned an item-id for tracking.

In both cases, if the cashier is not familiar enough with the needed repair to give a quote they can call the repairs hotline to get a quote from the repairs department. After entering the repair cost, the system calculates the estimated repair date through querying the database and estimating workload through quotes and sheer numbers of outstanding repair orders.

Upone clicking finish, the cashier is taken to the checkout process. (page26)

Repair Equipment Page



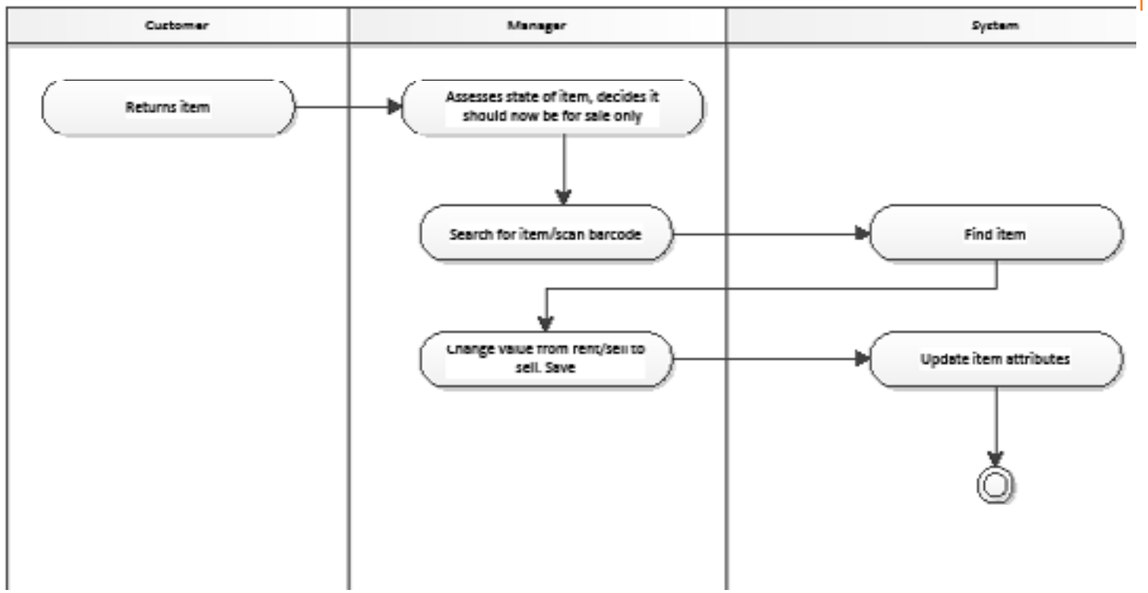
Repair Employees can access this page through the My Account Menu. Employees can request the item through the item # and affect the repairs. Upon completing the repairs, the employee clicks on the item to be repaired and marks the completion date, and then presses submit. When a repair is affected , the item disappears from the list of items to be repaired and so the employees always know what repairs are outstanding and what things they can work on.

Mark Rental Item For Sale

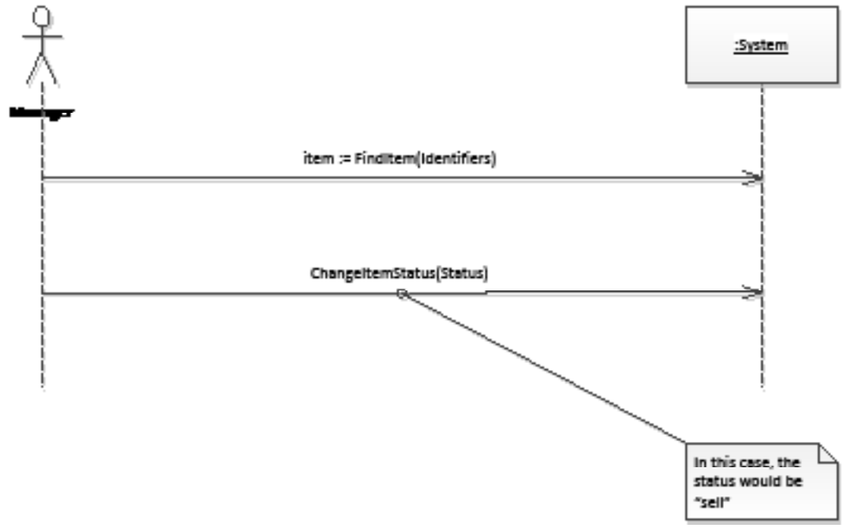
Mark Rental Item For Sale Use Case

Use Case Name	Mark Rental Item For Sale	
Scenario	Manager marks item that was previously available for rental as sale only	
Triggering event	Item has been returned and manager decides the item is in poor enough condition that it should not be rented anymore	
Brief description	The item is marked for sale instead of rental, and is no longer available to rent	
Actors	Manager marks item that was previously available for rental as sale only	
Related use cases	None	
Stakeholders	Accounting, Inventory Control, Users, Managers, Salespeople	
Preconditions	Item must not be broken or in repair. Item must not be in good enough condition to rent anymore	
Postconditions	Item is not available for sale, but not rent	
Flow of activities	**Actor**	**System**
	1. Customer returns item and manager decides to retire item from rental pool	
	2. Manager finds item in database or scans barcode to find item	2. System displays item information screen
	3. Manager changes item status from "rent/sell" to "sell"	3. System changes status of item from rent/sell to sell
Exception conditions		

Mark Rental Item For Sale Activity Diagram



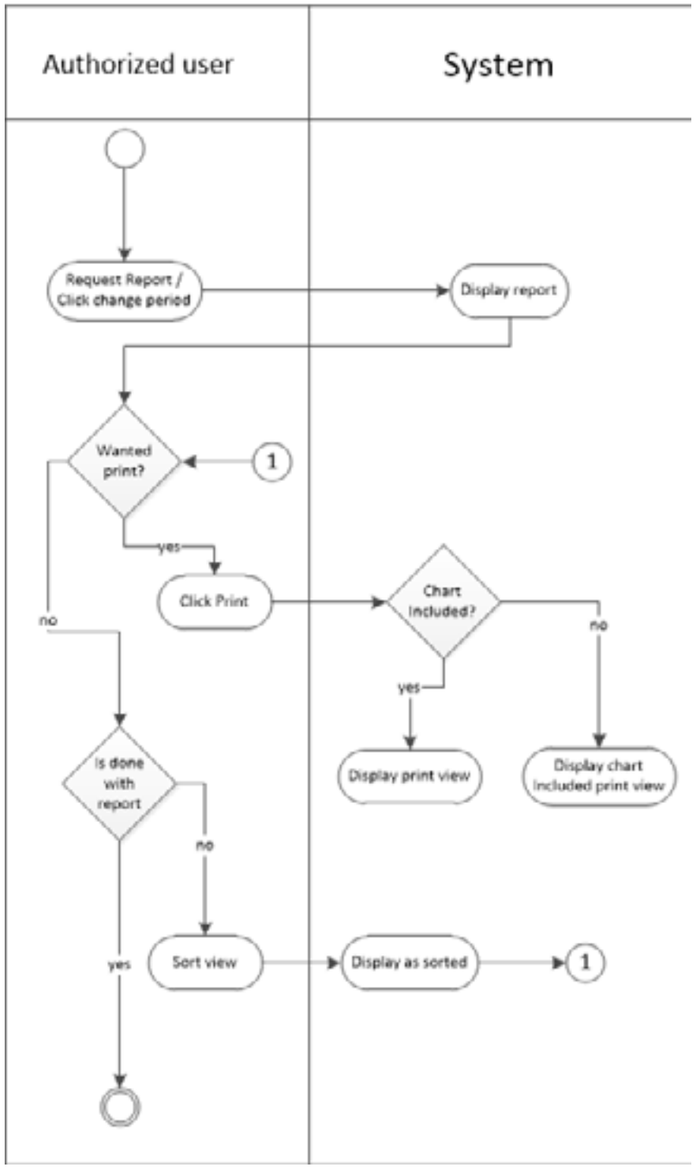
Mark Rental Item For Sale SSD

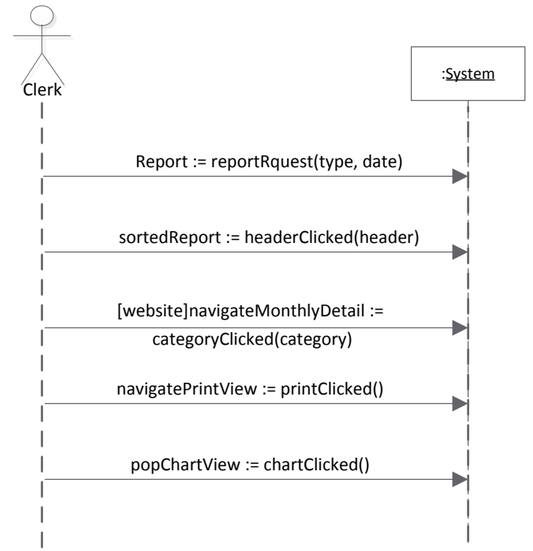


When a manager logs in to the application, they are presented with various managerial options. For the purposes of the digital marketing sector of MyStuff, we will begin at the “Edit Item” screen.

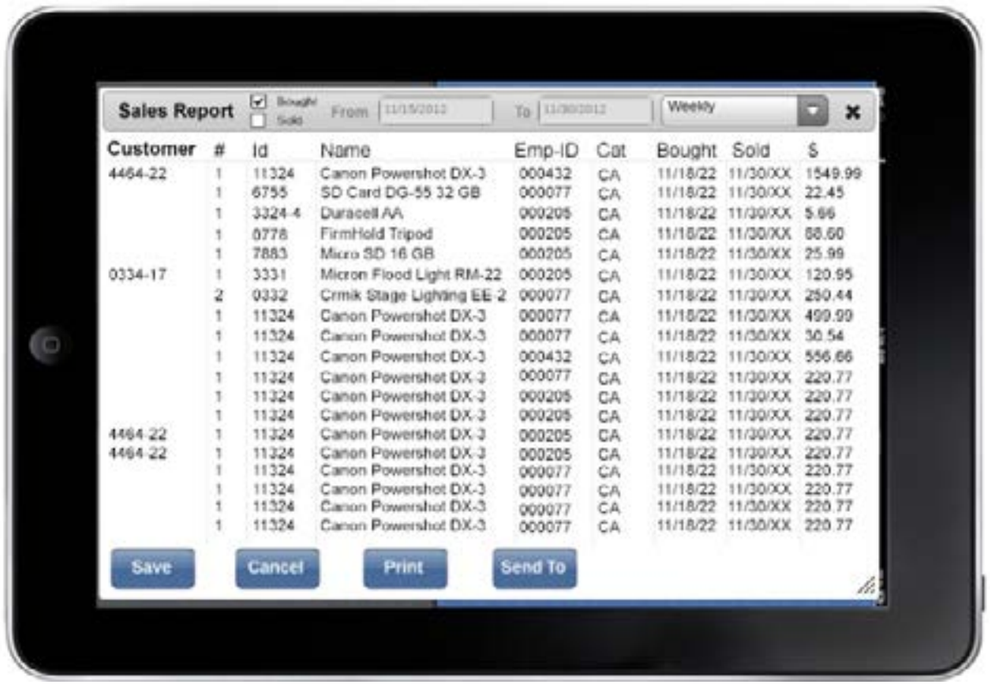
This screen allows a manager to edit an item’s status, allowing items to flow to and from the rental and sale pools allowing managers to use discretion in deciding where an item should be placed. There is also room for the item price to be changed, but a markdown reason must be present for this change to occur. This allows upper management to review all markdowns and accompanying reasons should they wish.

Use Case Name	Request Report	
Scenario	Manager or C-Level Staff needs to create a customized report	
Triggering event	Manager needs to report to upper management, check inventory levels or rentals, or c-level wants a report for a meeting or to review numbers	
Brief description	A manager or upper management employee needs to create a customized report, and goes online or onto the in-store terminal to create the report.	
Actors	Manager/Authorized Upper Management Staff	
Related use cases		
Stakeholders	Management, Clerk, acounting, customer	
Preconditions	Employee must have rights to access reporting functions.	
Postconditions	Employee has a report created to specifications	
Flow of activities	**Actor**	**System**
	1. Log into system 2. Navigate to chosen report type 3. Customize with selected options 4. View/Send/Print Report	1. Log into system 1.1 Determine if user is authorized 2. Return Initial Report Type 3. Return Customized Account
Exception conditions		


Authorized user
System
Request Report / Click change period
Display report
Wanted print?
1
yes
Click Print
Chart included?
no
yes
no
Display print view
Display chart included print view
no
Is done with report
yes
Sort view
Display as sorted
1


Clerk
:System
Report := reportRquest(type, date)
sortedReport := headerClicked(header)
[website]navigateMonthlyDetail := categoryClicked(category)
navigatePrintView := printClicked()
popChartView := chartClicked()

Upon selecting Reports, the manager is presented with three options for reports.



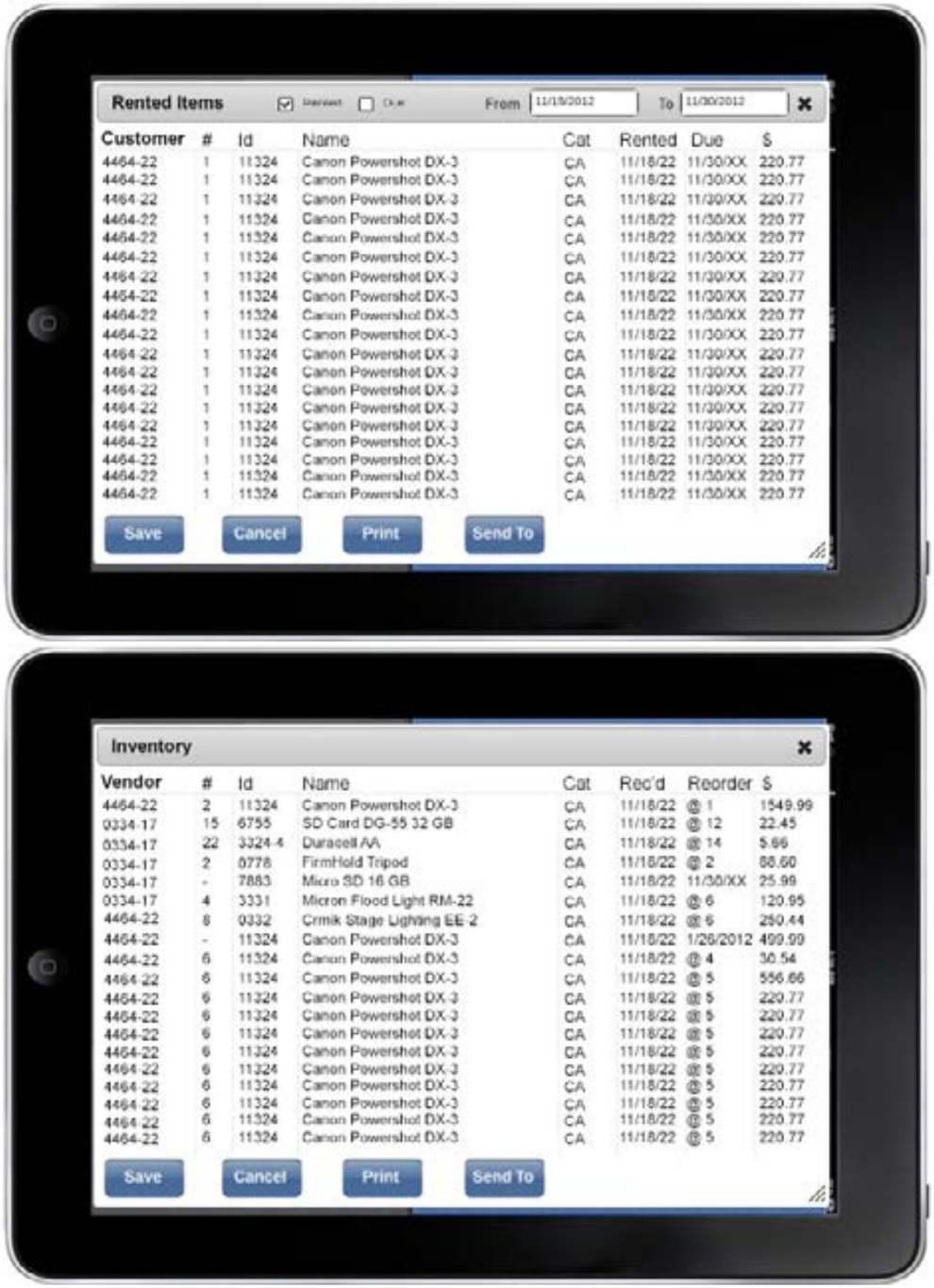
This page and the next show the different reports available to a manager. The above report details monthly sales and is sortable by clicking on the headers. It also has a range selector to select sales by week, month, quarter, month-to-date, year, year-to-date, or custom.

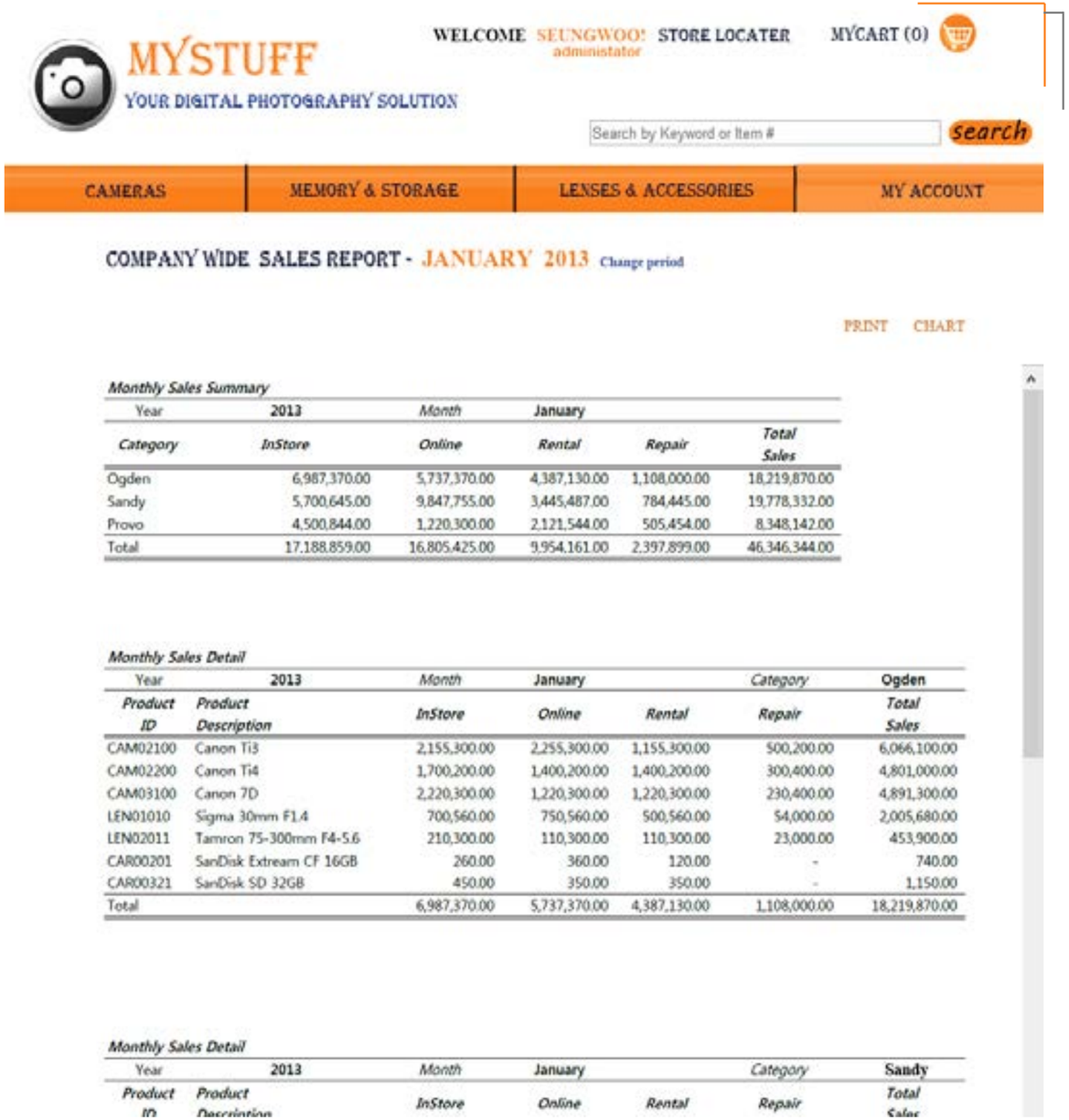
Custom range reporting enables the adjacent controls, allowing a manager to specify a from and to date for customer reporting.

At top right, there is a report for rented items, including controls to filter once again by clicking on the column. The report also filters by rental date, return date, and a custom range feature.

At bottom left, is the inventory report. This report also filters by selecting the column headings.

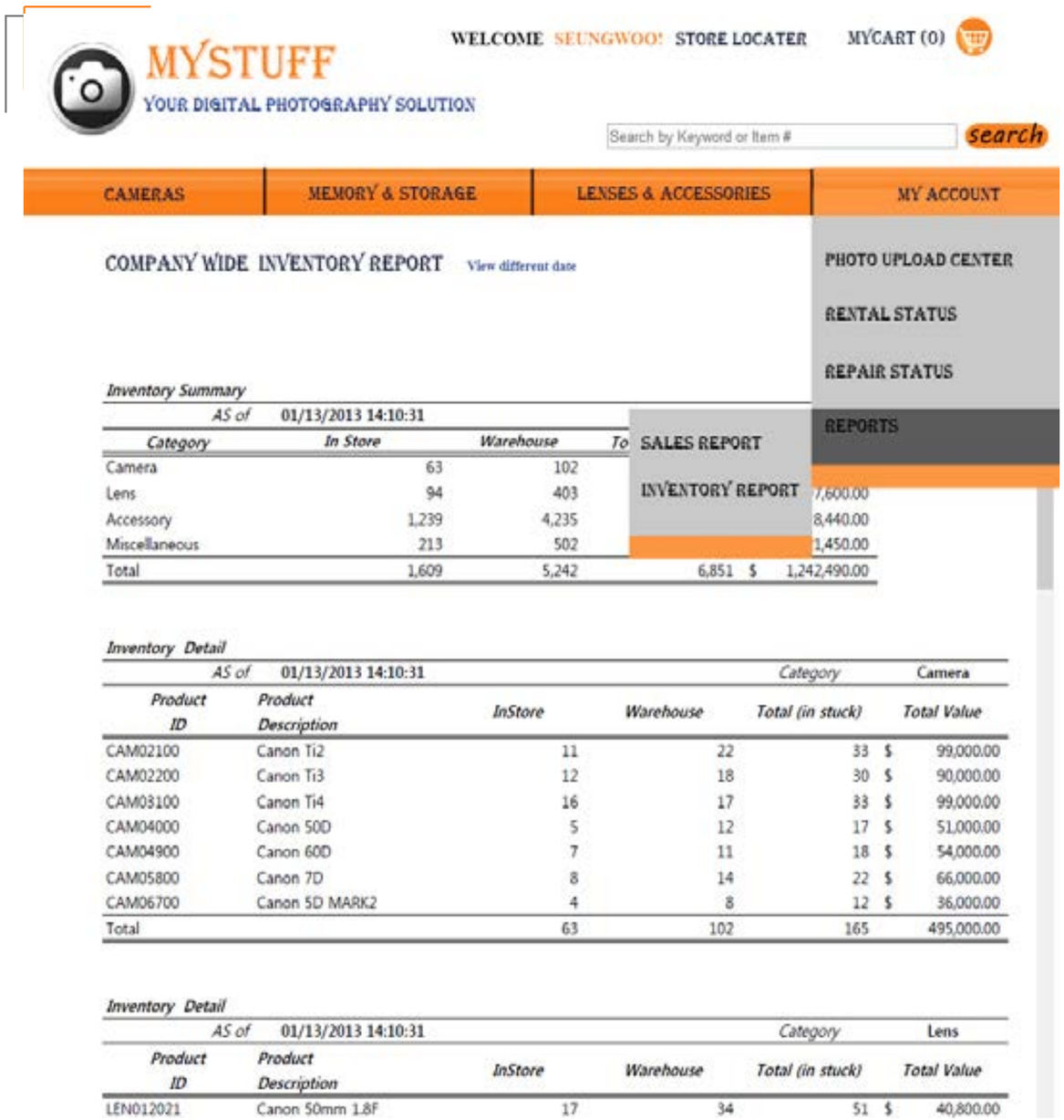
Each report features several options, including the normal save and print, as well as a send to feature which enables sending reports to other applications or over email.

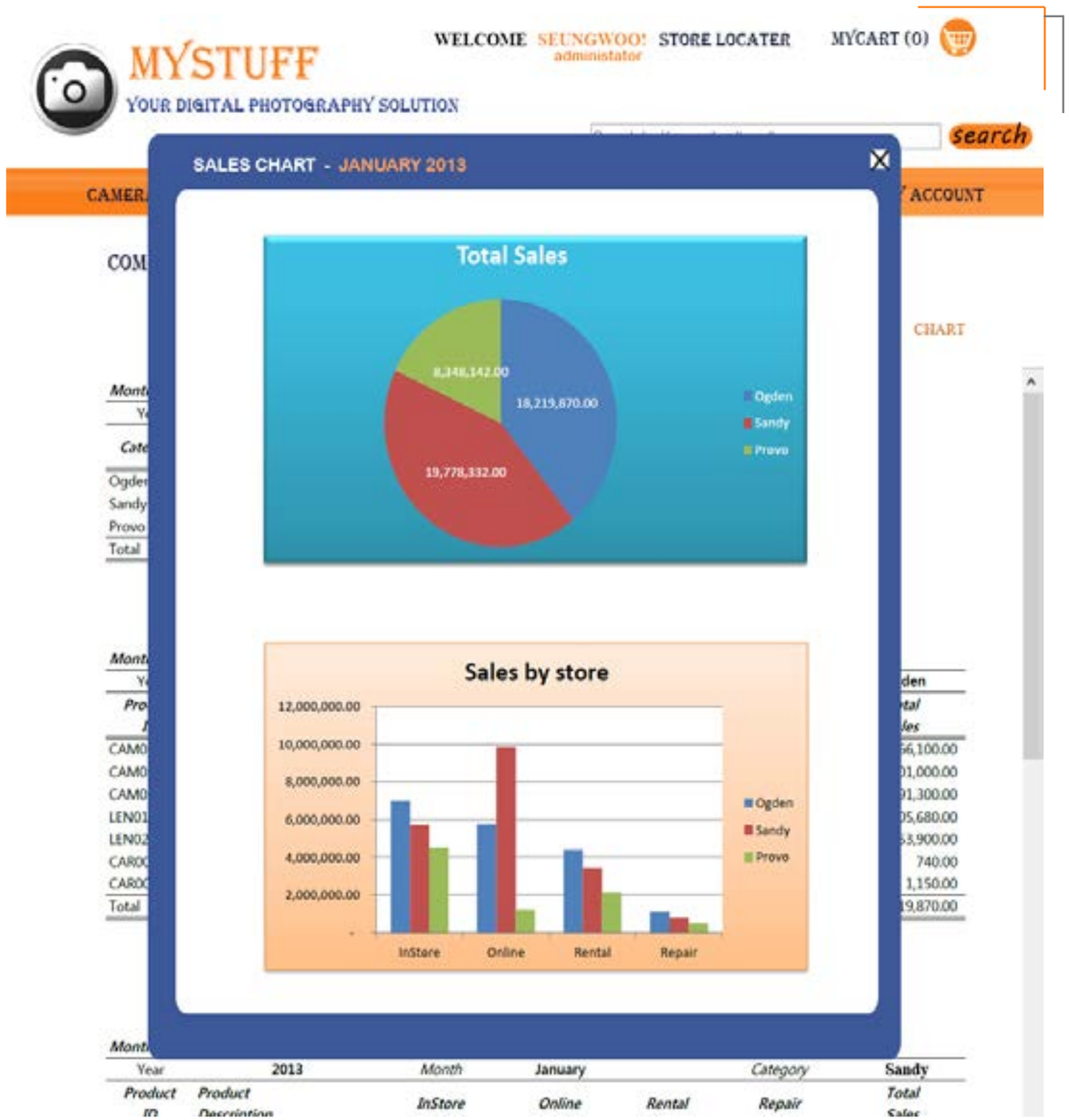




This page and the next show the different reports available to a manager on the website. The sales report is also available with detailed monthly sales. The monthly details will also be sortable by clicking the headers.

Each report features two options: print and chart.





When the user clicks on the chart option the data is summarized into the graphical format shown above.

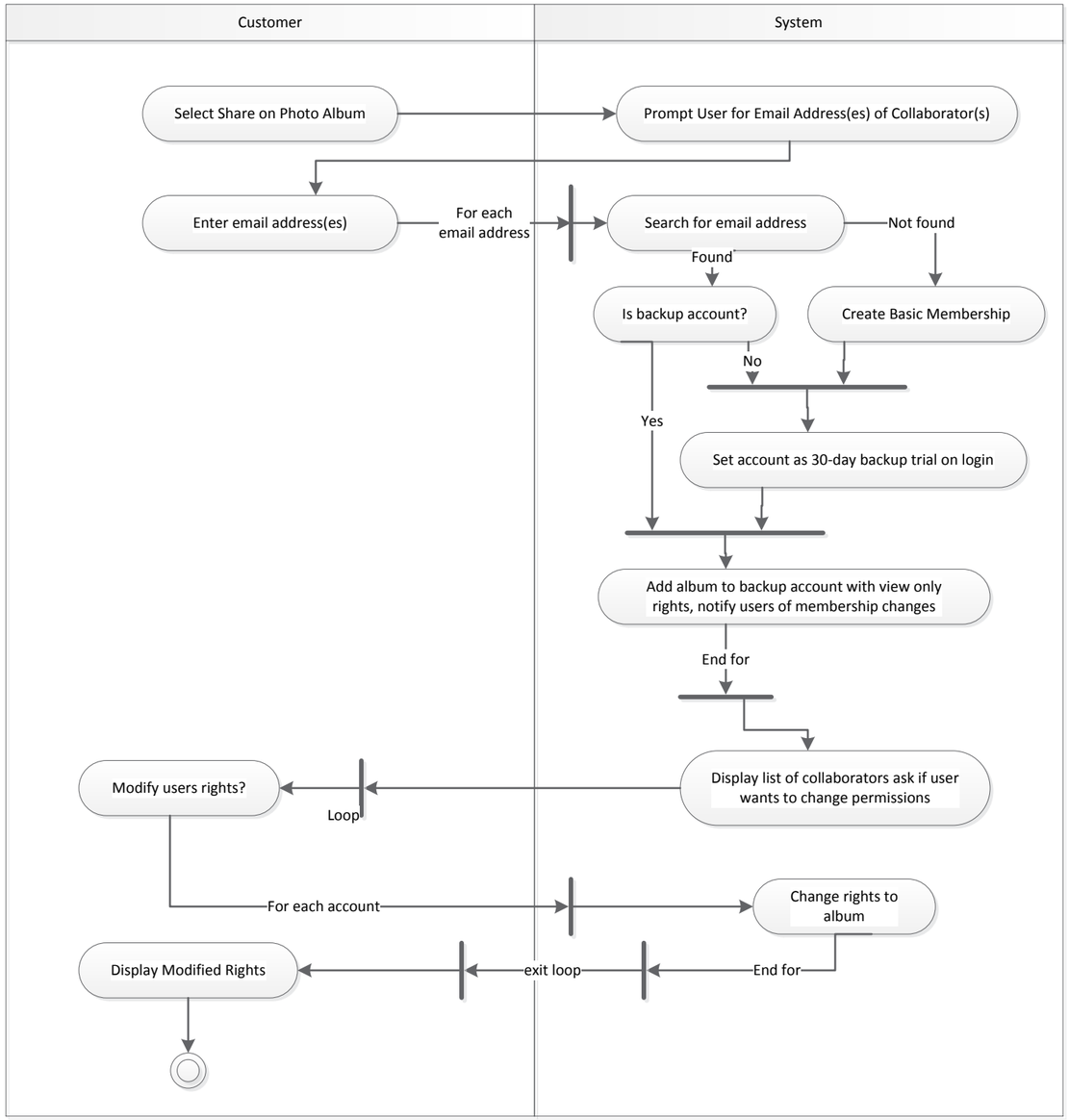
Share Online Photo Album

Share Online photo Album Use Case

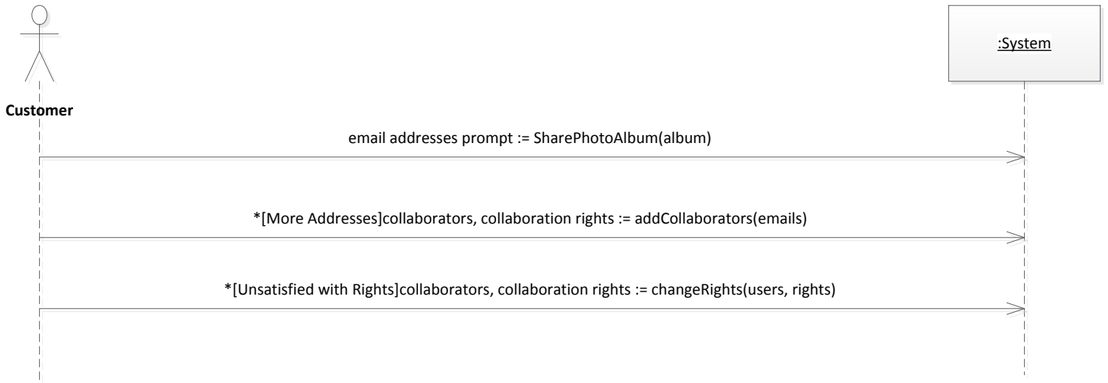
Use Case Name	Share online Photo Album	
Scenario	Share an online photo album from account	
Triggering event	Customer wants to share a photo album with another customer	
Brief description	Online customer shares a photo album with another customer by selecting the photo	
Actors	customer	
Related use cases	None	
Stakeholders	Customer, second customer, online sales department	
Preconditions	Customer must have an online account, and must have an album in the online account. Also, customer must know the email address of another person they wish to share the account with. Customer must be logged into account	
Postconditions	Photo album is now viewable by both customers, but the owning customer has the ability if needed to revoke access to the photo album from the other member.	
Flow of activities	**Actor**	**System**
	1. Customer selects share on a photo album. 2. Customer enters email address(es) of desired shared accounts	1. System prompts user for email address(es) of customer(s) with whom the user wishes to share an album 2.1 System searches for users in database, and adds them to the
Exception conditions	Email address is invalid	

Share Online photo Album Activity Diagram

Activity Diagram for Share Online Photo Album



Share Online photo Album SSD



Share Online photo Album Mockup

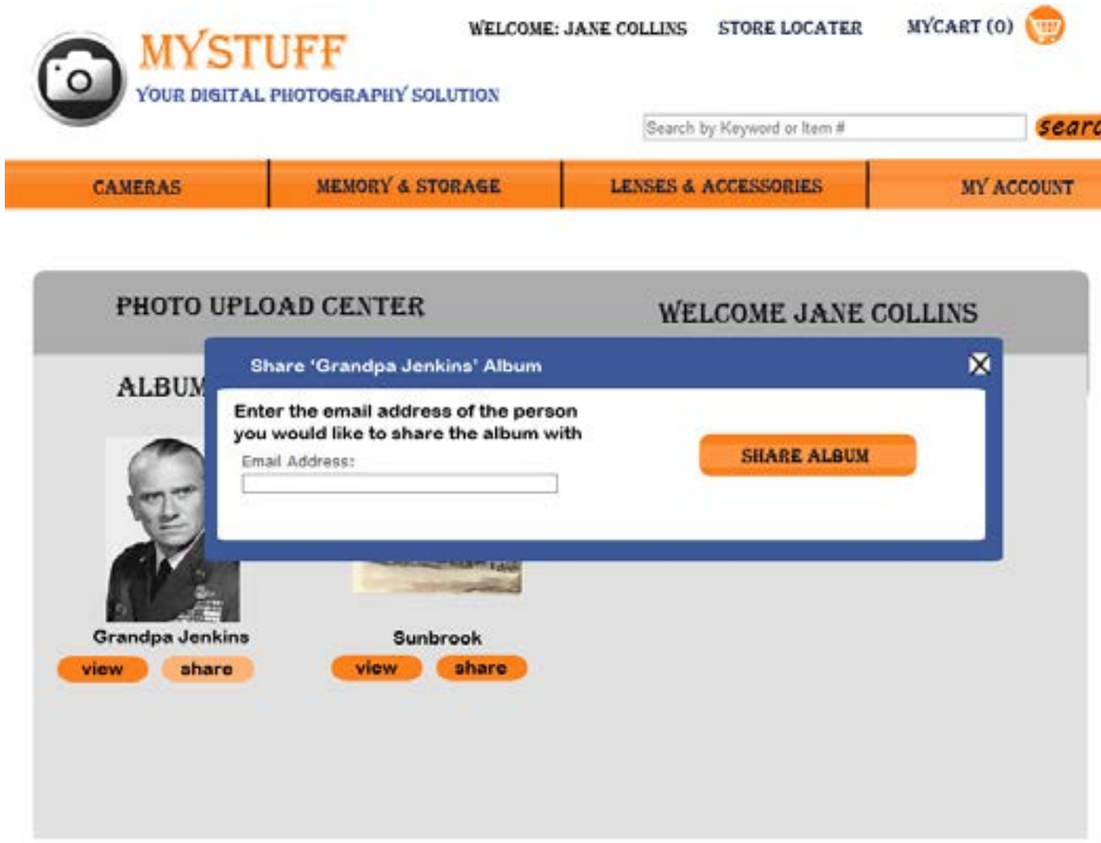
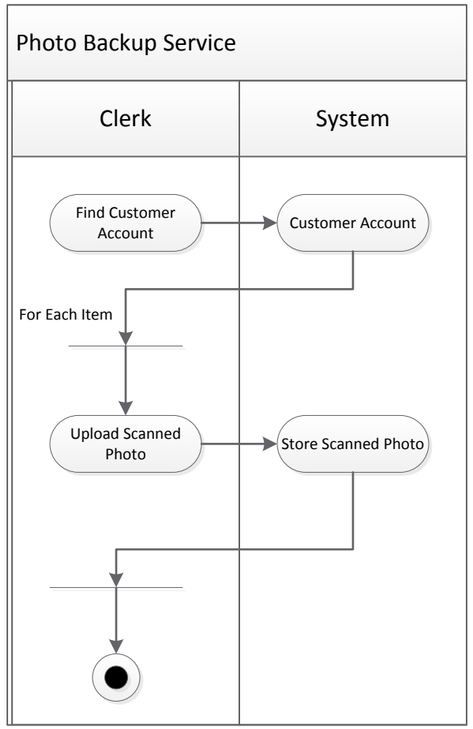


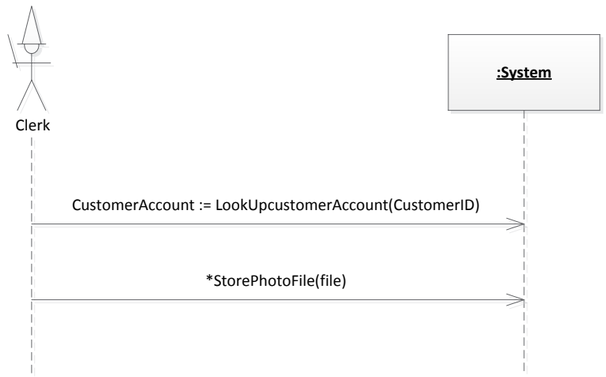
Photo Backup Service

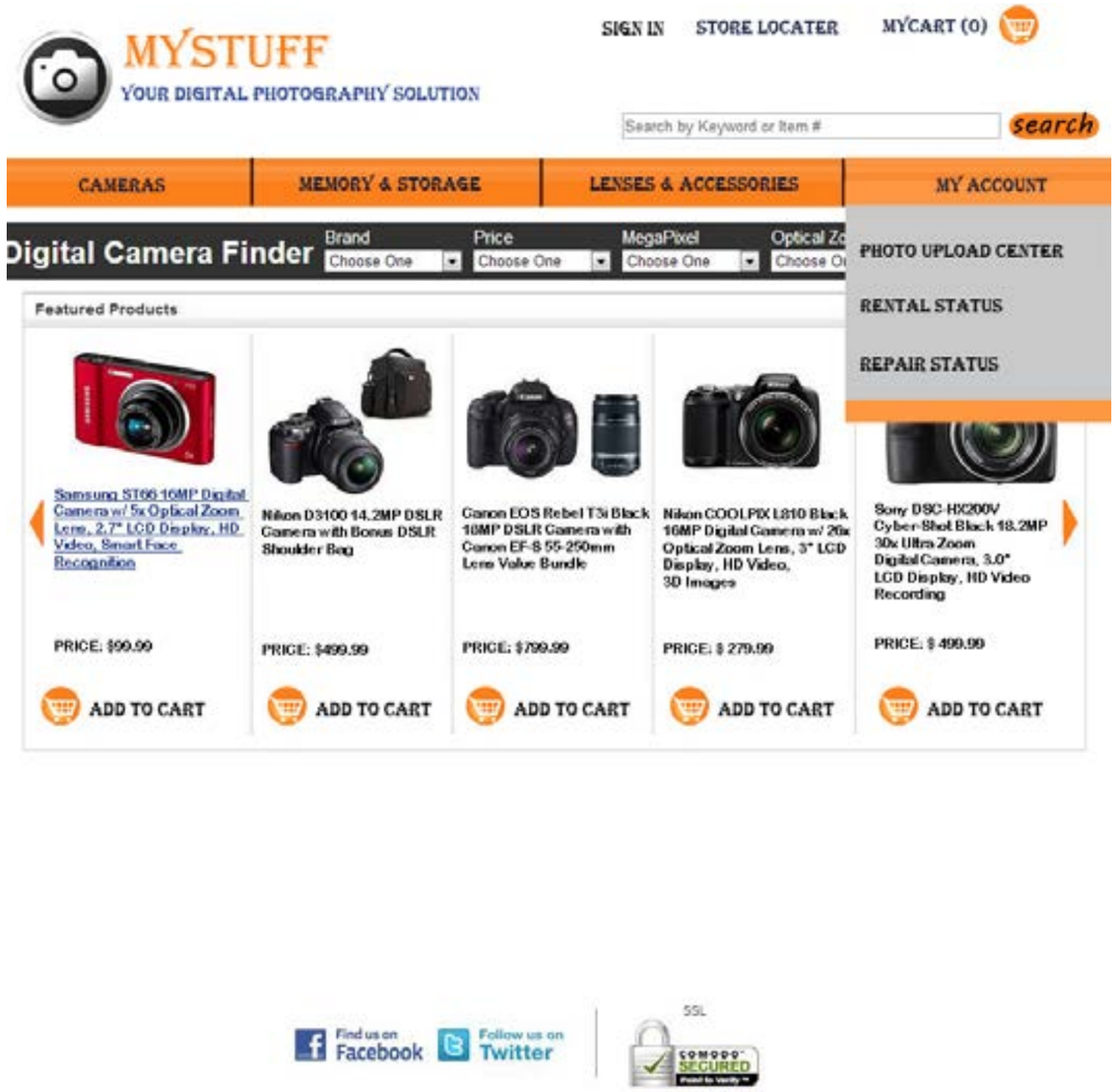
Photo Backup Service Use Case

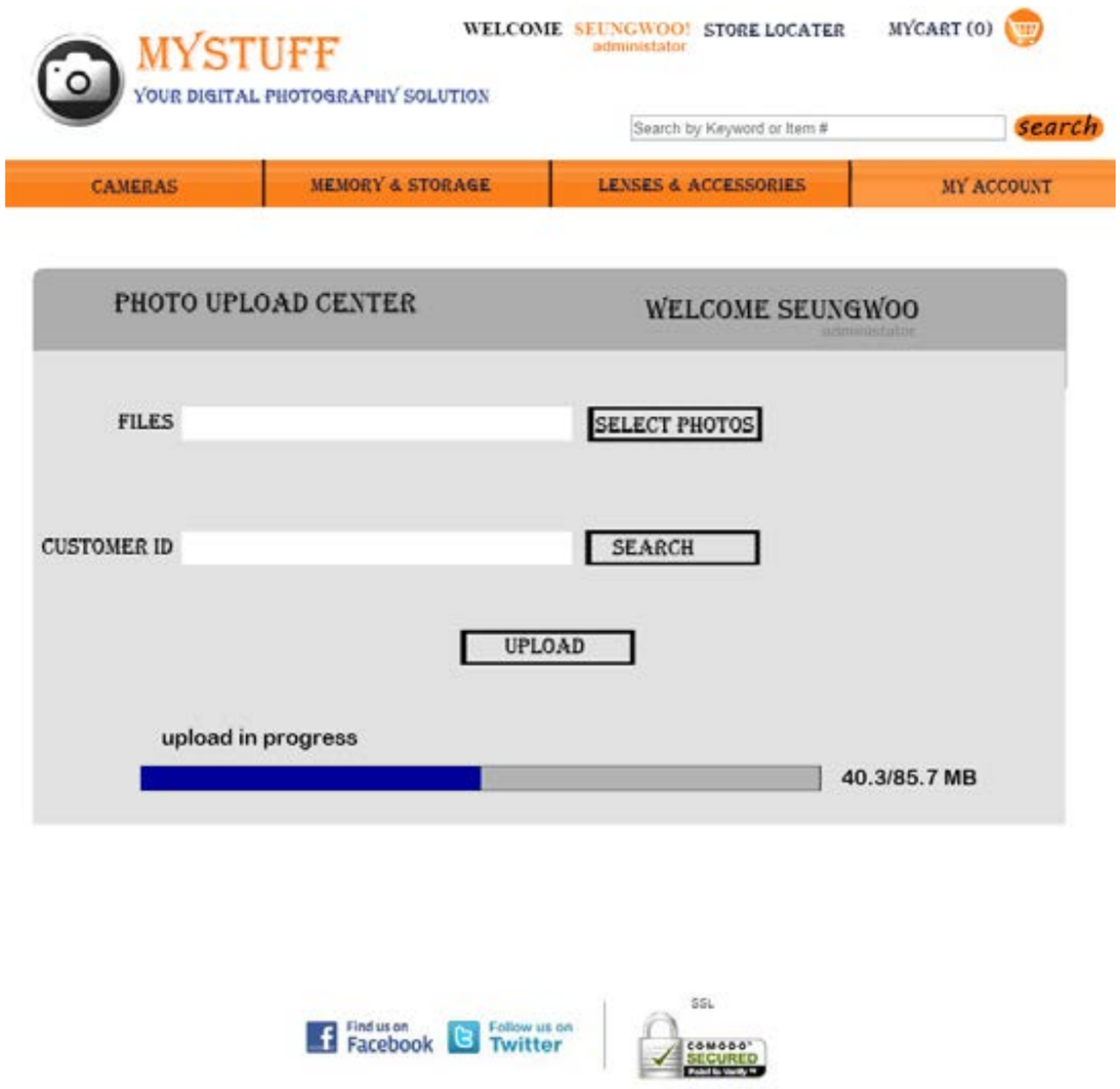
Use case name:	Photo Backup Service	
Scenario:	Backup Scanned Photos	
Triggering event:	Scanned Photos need backup by clerk	
Brief description:	A clerk has a customers scanned photos that he needs to back up.	
Actors:	Clerk	
Related use cases:	None.	
Stakeholders:	Management, Clerk, accounting, customer	
Preconditions:	Photos must be scanned and in digital format ready to be uploaded	
Postconditions:	All items must be saved into the customers Photo Backup Service account	
Flow of Activites:	Actor	System
	1. Clerk Searches for Customer ID 2. Upload Scanned Photos	1. Finds customer account 2 Store digitally scanned photo
Exceptions Conditions:		

Photo Backup Service Activity Diagram




:System
Clerk
CustomerAccount := LookUpcustomerAccount(CustomerID)
*StorePhotoFile(file)


MYSTUFF
YOUR DIGITAL PHOTOGRAPHY SOLUTION
SIGN IN
STORE LOCATER
MYCART (0)
Search by Keyword or Item #
search
CAMERAS
MEMORY & STORAGE
LENSES & ACCESSORIES
MY ACCOUNT
PHOTO UPLOAD CENTER
RENTAL STATUS
REPAIR STATUS
Digital Camera Finder
Brand
Price
MegaPixel
Choose One
Featured Products
Samsung ST66 16MP Digital Camera w/ 5x Optical Zoom Lens, 2.7" LCD Display, HD Video, Smart Face Recognition
PRICE: $99.99
ADD TO CART
Nikon D3100 14.2MP DSLR Camera with Bonus DSLR Shoulder Bag
PRICE: $499.99
ADD TO CART
Canon EOS Rebel T3i Black 18MP DSLR Camera with Canon EF-S 55-250mm Lens Value Bundle
PRICE: $799.99
ADD TO CART
Nikon COOLPIX L810 Black 16MP Digital Camera w/ 26x Optical Zoom Lens, 3" LCD Display, HD Video, 3D Images
PRICE: $ 279.99
ADD TO CART
Sony DSC-HX200V Cyber-Shot Black 18.2MP 30x Ultra Zoom Digital Camera, 3.0" LCD Display, HD Video Recording
PRICE: $ 499.99
ADD TO CART
Find us on Facebook
Follow us on Twitter
SSL
COMODO SECURED



The store clerk chooses the files that they need to upload for a customer that they have converted. They then type in the customer ID and search the database to choose the customer account to upload the files to. They then press upload to upload the selected files.

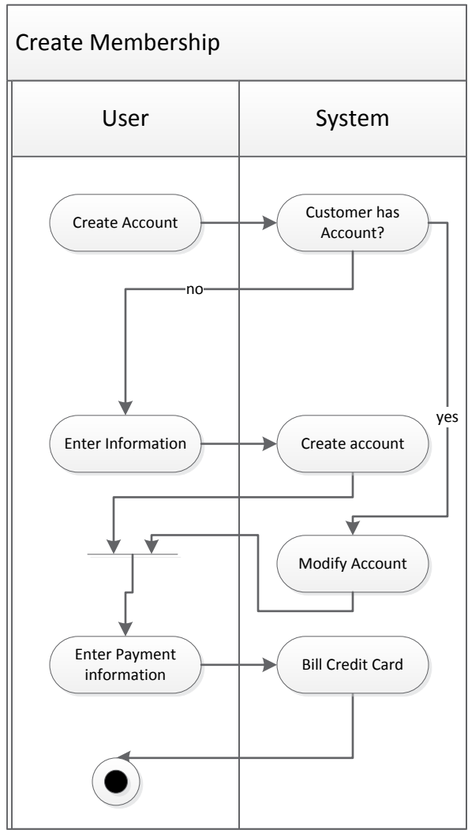
The customer selects the files they wish to upload to their account. They then select the album to upload them to, or they may type a new album name and press new to create a new album. They then press upload to upload the selected files.

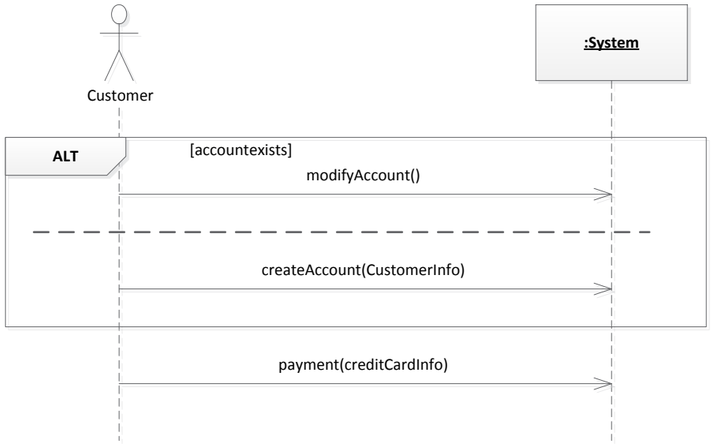
Create Membership

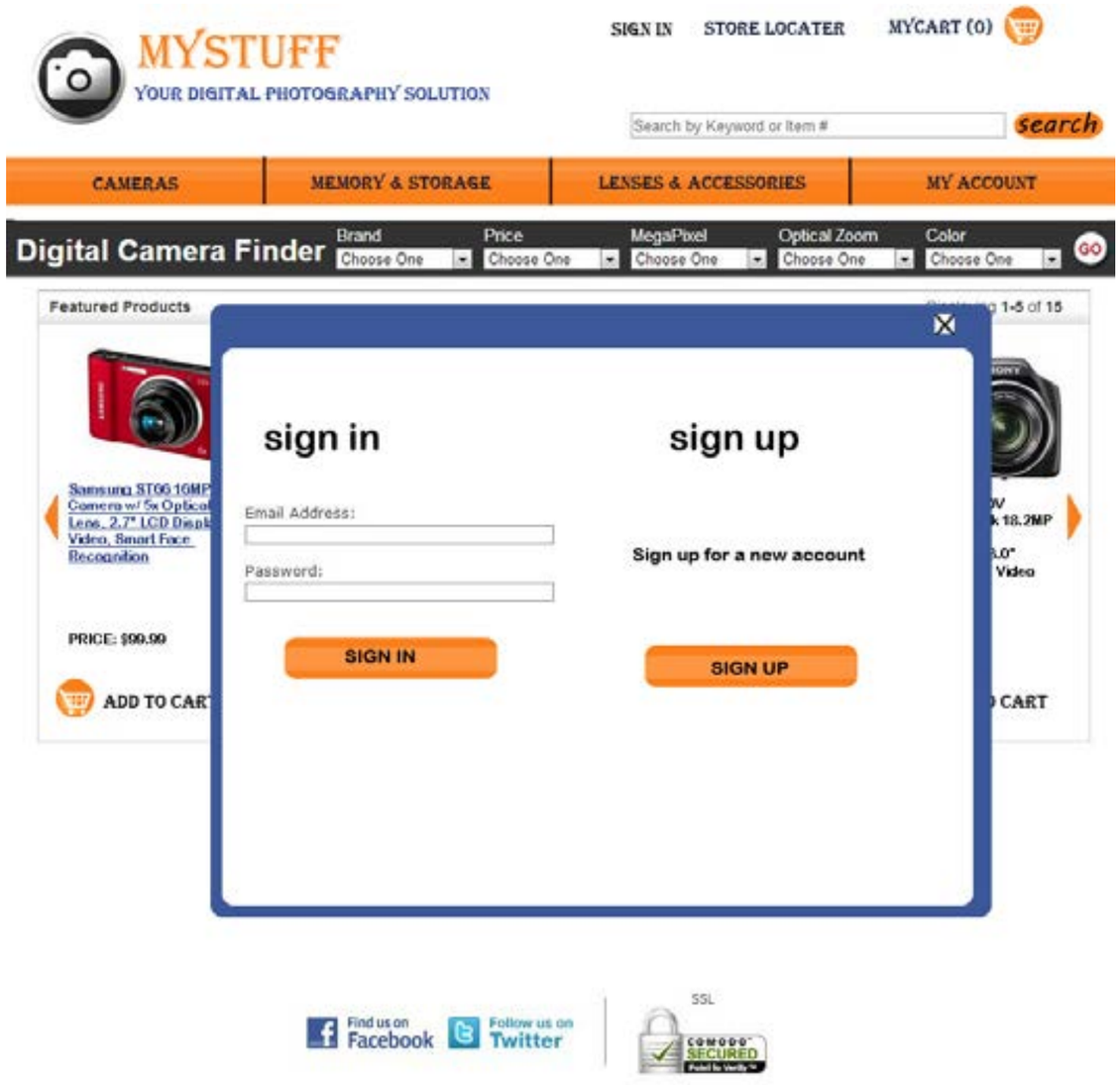
Create Membership Use Case

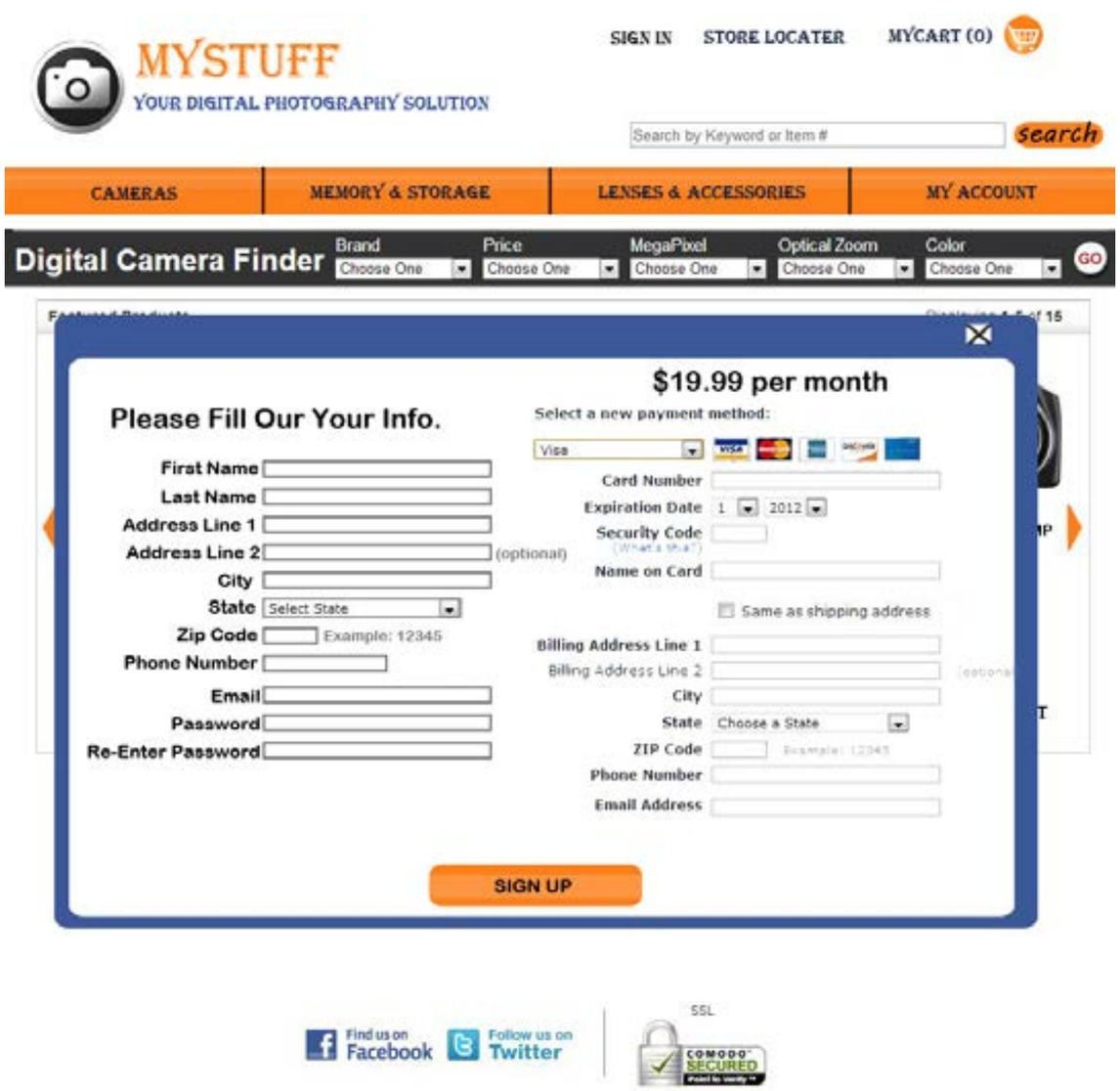
Use Case Name	Create Membership	
Scenario	System needs to create a membership to support the functions of a system process	
Triggering event	Customer shares photo album with nonexistent member, Clerk creates membership	
Brief description	System creates a membership for the customer complete with membership type and	
Actors		
Related use cases	Customer, Sales Representative, Store sales representative	
Stakeholders	Customer, Sales Rep, Online Sales Division	
Preconditions	Customer must not already have a membership. Information for creating a membership must be provided by the user	
Postconditions	Customer has a membership, and can perform whatever rights are assigned to that membership	
Flow of activities	**Actor**	**System**
	1. Customer/Sales Rep/Store sales rep initiates action through another use case, specifying all attributes	1. System creates the membership using the supplied attributes, gives feedback to appropriate party that membership has been created
Exception conditions	Email address or other attribute data is not valid. Customer already has an account in the system	

Create Membership Activity Diagram




:System
Customer
ALT
[accountexists]
modifyAccount()
createAccount(CustomerInfo)
payment(creditCardInfo)


MYSTUFF
YOUR DIGITAL PHOTOGRAPHY SOLUTION
SIGN IN
STORE LOCATER
MYCART (0)
Search by Keyword or Item #
search
CAMERAS
MEMORY & STORAGE
LENSES & ACCESSORIES
MY ACCOUNT
Digital Camera Finder
Brand
Price
MegaPixel
Optical Zoom
Color
Choose One
GO
Featured Products
sign in
sign up
Email Address:
Password:
Sign up for a new account
SIGN IN
SIGN UP
PRICE: $99.99
ADD TO CART
Find us on Facebook
Follow us on Twitter
SSL
COMODO SECURED



These two views compliment the website account signup process in the store. This allows the clerk to lookup a customer account or register a new customer. The two screens on the adjacent page allow a customer to select the account type. This is also where customers who would like the Digital Conversion Service would sign up and pay for the service, either at sign up time, or by selecting Digital Services from the Member Card view.

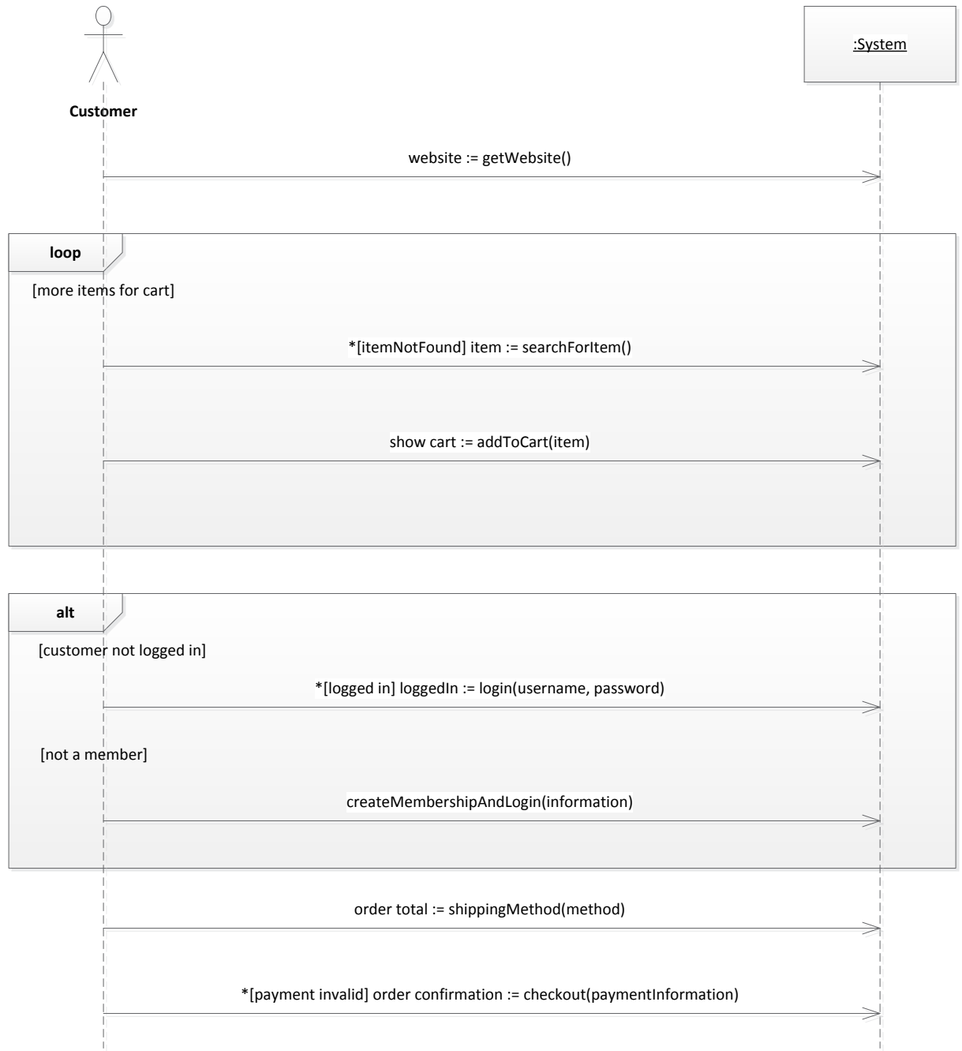
After completing the bottom screen customers are sent to the checkout process (page 26).

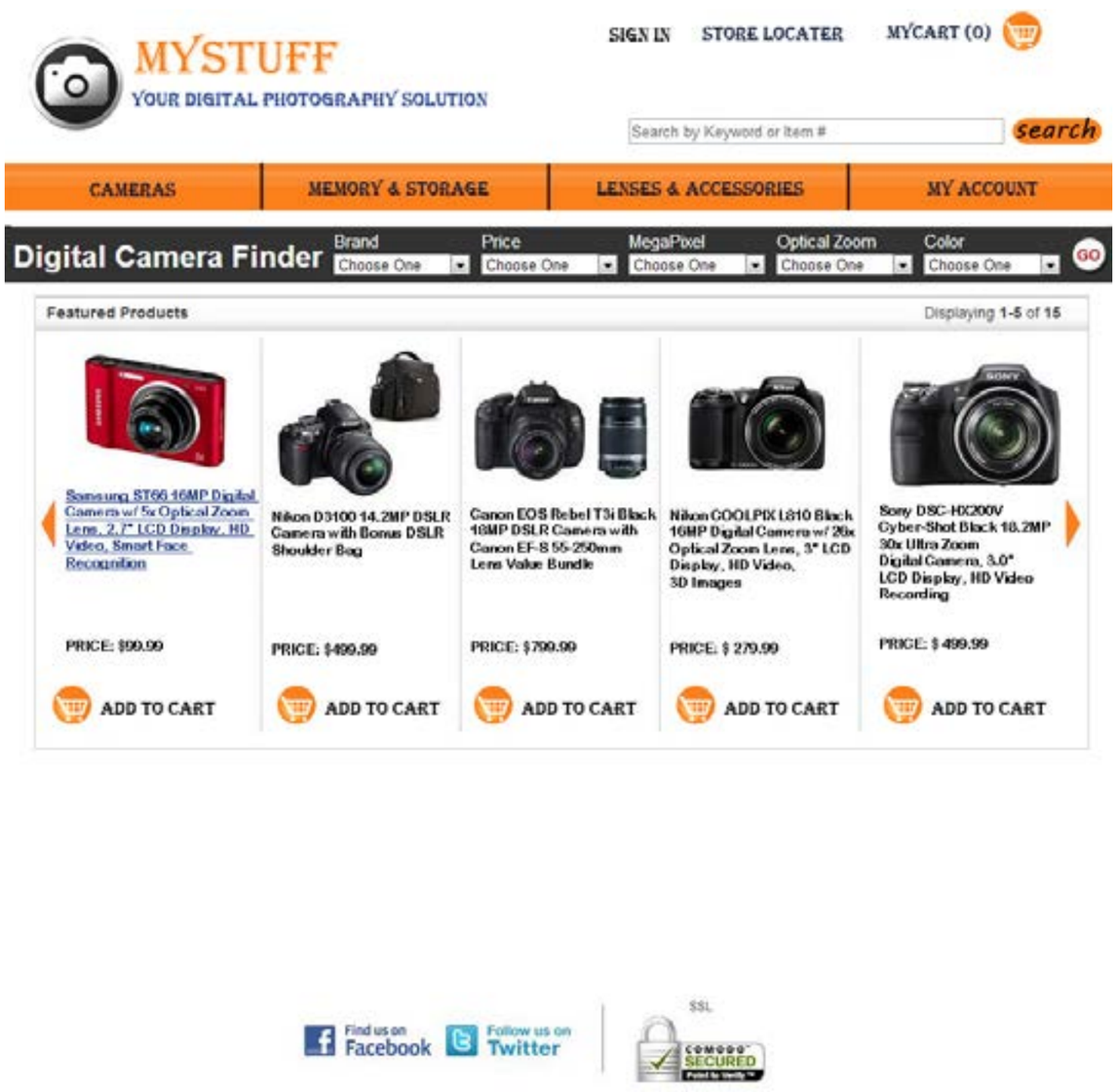
Purchase Online

Purchase Online Use Case

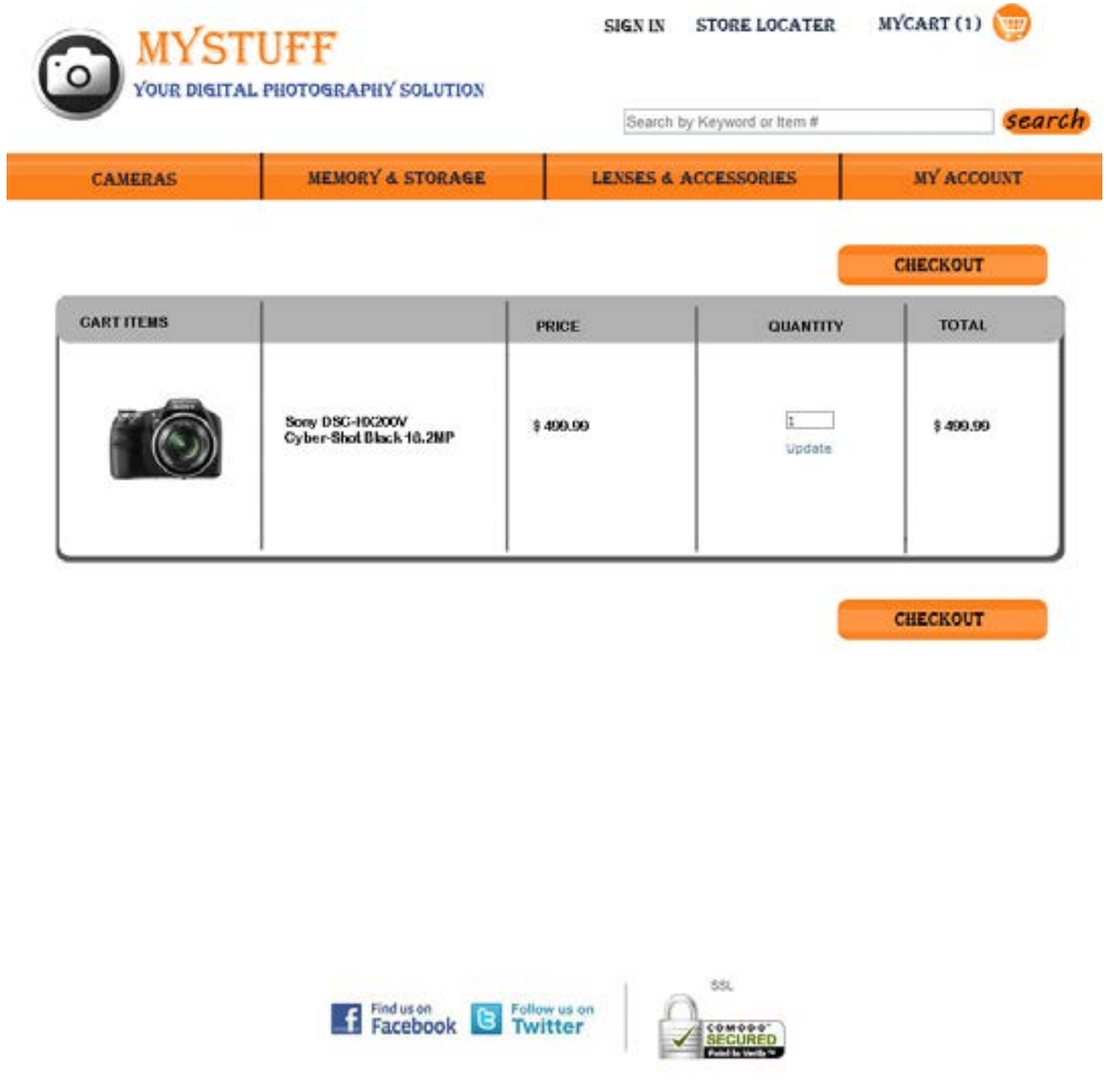
Use Case Name	Buy items from store	
Scenario	Buy an item from store	
Triggering event	Customer wants to buy an item from store	
Brief description	Customer make a transaction that buying (an) item(s) from store. An employee takes care of the transaction.	
Actors	Customer, Sales Rep	
Related use cases	Customer, Sales Representative, Store sales representative	
Stakeholders	Customer, store employees	
Preconditions	Store is opened and has item that wanted to be sold. Customer is able to pay for the item.	
Postconditions	Customer paid the item. Transaction finished.	
Flow of activities	**Actor**	**System**
	1. Customer pick items to buy. 2. Sales Rep. create a transaction 4. Customer select payment method 5. Sales Rep. apply the payment method 7. Sales Rep. give or discards the receipt as the customer wish.	2. Lookup the item 3. Show the price 5. System accept the payment method 6. Print receipt
Exception conditions	The payment method is invalid. Item is not in the inventory	

Customer
System
Delivery man
Visit web site
Show item catalog
Select item
Lookup/show customer membership
Show item status / price
See Customer membership diagram
Sign in
Place order
no
Is item in stock
yes
Select delivery method
Apply customer payment method
Customer select payment method
Payment method is valid
no
yes
Confirm the order
Accept payment method
Pickup in store
no
Receive order
yes
Create deliver order
Pickup item
Assign delivery

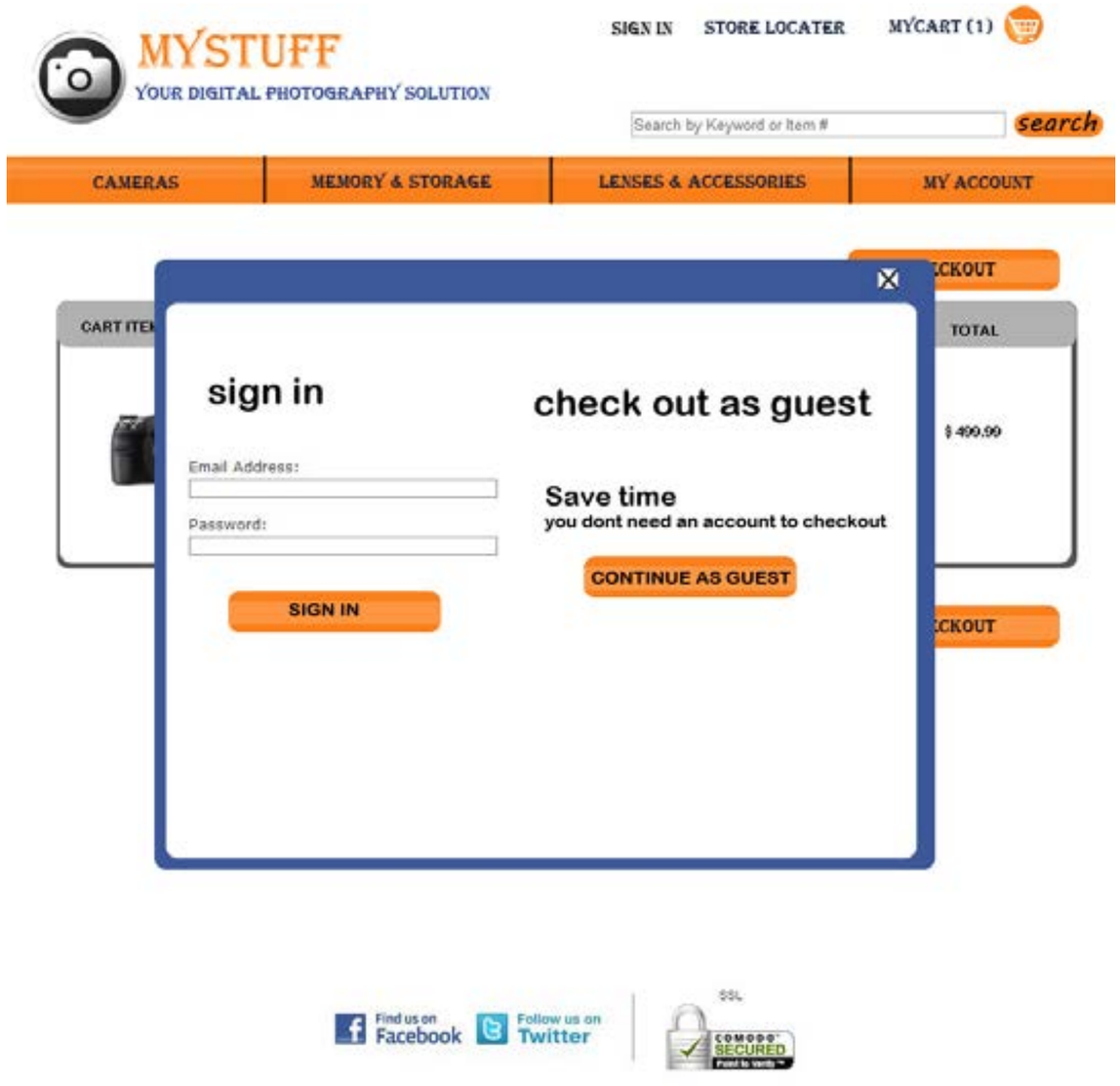

Customer
:System
website := getWebsite()
loop
[more items for cart]
*[itemNotFound] item := searchForItem()
show cart := addToCart(item)
alt
[customer not logged in]
*[logged in] loggedIn := login(username, password)
[not a member]
createMembershipAndLogin(information)
order total := shippingMethod(method)
*[payment invalid] order confirmation := checkout(paymentInformation)



The customer has many options of browsing through items.

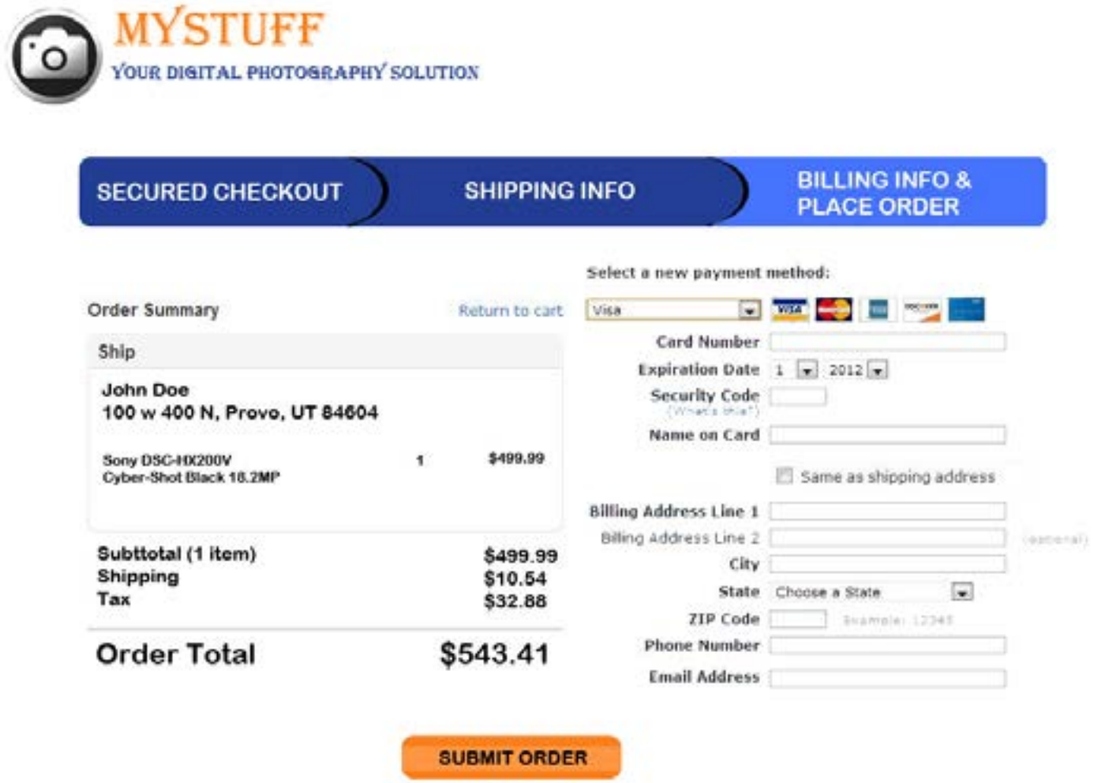


The customer selects an item to add it to cart and the item is added to the cart.



The customer presses checkout which brings them to this screen. They can select to sign in, or check out as guest, where their information isn't saved.

If either sing in or guest was selected they come to this screen next. If they are signed in, this information is automatically filled out for them.



The final purchasing step, billing. If they are signed in this information is already filled in for them.

Appendix A: Database Models

Relational Model

Size(Size_ID, unit price)

Picture(Picture_ID)

Print(Size_ID, Picture ID, quantity, development_ID)
FK: Size_ID ref Size, Picture_ID ref picture, development_ID ref Development

Development(Development_ID, price)
FK: Development_ID ref Revenue Source

Media Conversion(Media Conversion ID, quantity, backup_ID, conversion_service_ID)
FK: Media Conversion ID ref Revenue Source, backup_ID ref Backup, Conversion_service_ID ref Revenue Source

Conversion Service(Conversion_Service_ID)

Type(TypeID, conversion_service_ID, price)
FK: Conversion_Service_ID ref Conversion Service

Discount(DiscountID, quantity, percent, conversion_service_ID)
FK: conversion_service_ID ref Conversion Service

Backup(Backup_ID, size, begin_date, end_date, price, backupaccountID)
FK: Backup_ID ref Revenue Source, BackupAccountID ref Backup Account

Backup Account(BackupAccountID,customerID)
FK: customerID ref Customer

Share(backupacctID, backupacctID)
FK: backupacctID ref backup account

Sale(SaleID, quantity, productID)
FK: SaleID ref Revenue Source, ProductID ref Product

In Store(Instore ID)
FK: Instore_ID ref Sale

On-Line(Online_ID, backup (b))
FK:Online_ID ref Sale

Product(Product_ID, price)

Relational Model (continued)

Physical(Physical_ID, Serial Num, Shelf Location, Date Purchased, Cost, Date Sold, store_ID, conc_ID)
FK: Physical ID ref Product, Store ID ref Store, conc_ID ref Conceptual

For Rent(ForRentID, times rented)
FK: ForRentID ref Physical

For Sale(ForSaleID, new/used(b))
FK: ForSaleID ref Physical

Conceptual(Conceptual_ID, product name, product code, description, manufacturer, average cost, vendor_ID, category_ID)
FK: Conceptual ID ref Product, vendor_ID ref Vendor, category ID ref category

Category(Category_ID)

Vendor(Vendor_ID, name, address, phone, contact)

Conceptual Rental(Conc_Rental_ID, price per day, replacement price)
FK: Conc_Rental_ID ref Conceptual

Store(Store_ID, location, manager, address, phone)

Store Product(Store_ID, Conc_ID, quantity on hand, shelf location)
FK: Store ID ref Store, Conc ID ref Conceptual ID

Employee(EmployeeID, name, hire date, phone, salary, positionID, storeID)
FK: positionID ref Position, storeID ref Store

Position(PositionID, title, artID)
FK: ArtID ref Article

Article(ArtID, title)

Service(ServiceID, date started, date completed, description, labor hours, employee, date picked up, amount)
FK: ServiceID ref Revenue Source

Rental(RentalID, date out, date in, date due, CC cleared(b), forRentID, membershipID, priceID)
FK: RentalID ref Revenue Source, forRentID ref For Rent, membershipID ref Membership, priceID ref Price

Price(PriceID)

Membership(MembershipID, credit card, start date, expire date, trial (b), customerID)
FK: customerID ref Customer

Fee(FeeID, amount, waived (b), empID)FK: FeeID ref Revenue Source, empID ref employee

Late(LateID, days late)
FK: LateID ref Fee

Damage(DamageID, description)
FK: DamageID ref Fee

Coupon(CouponID, amount, RevSourceID)
FK: RevSourceID ref Revenue Source

Revenue Source(RevenueSourceID)

Transaction Line(TransactionLineID, revSourceID, TransactionID)
FK: revSourceID ref Revenue Source, TransactionID ref Transaction

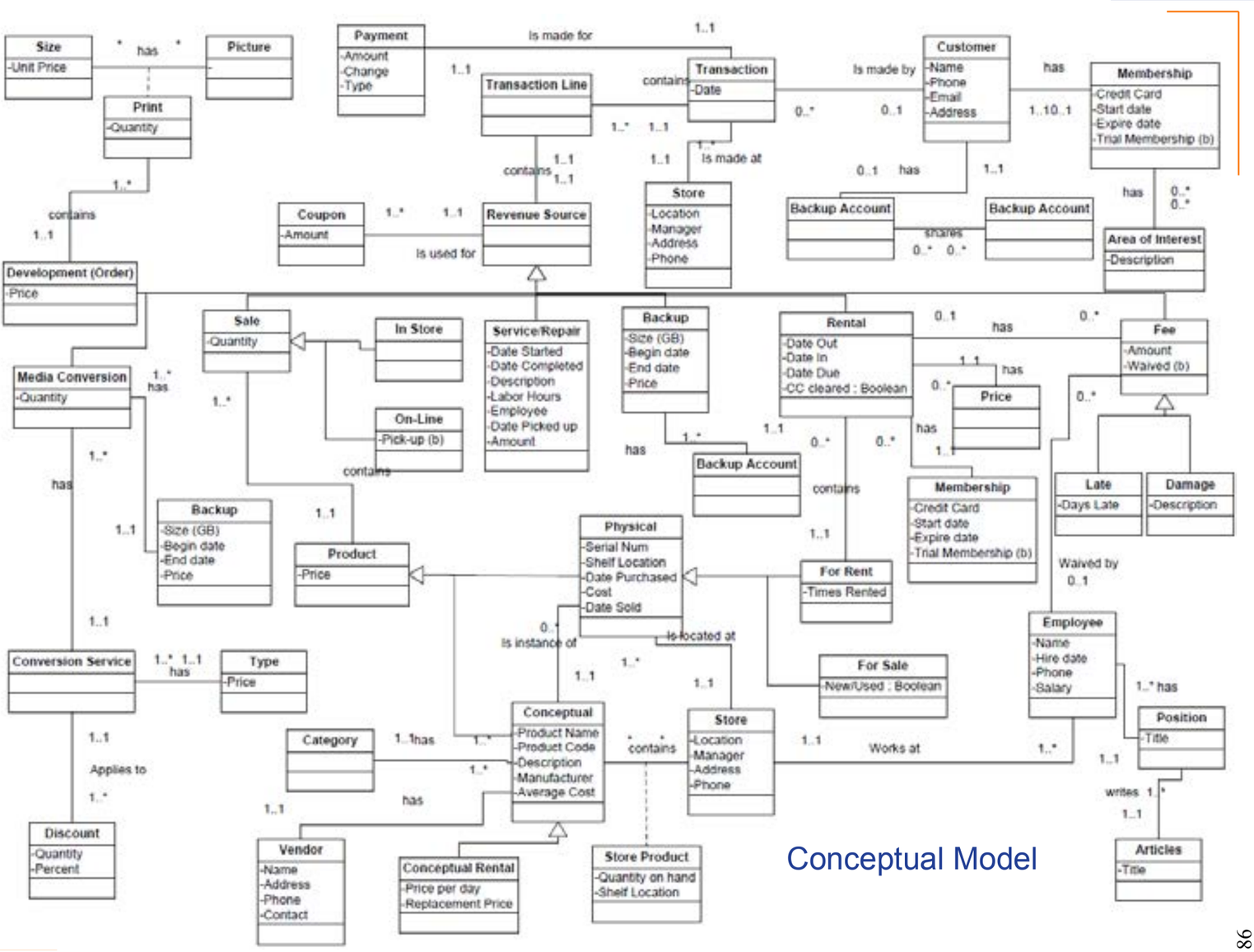
Transaction(TransactionID, date, paymentID, storeID, customerID)
FK: paymentID ref Payment, storeID ref Store, customerID ref Customer

Payment(PaymentID, amount, charge, type)

Customer(CustomerID, name, phone, email, address)

Area of Interest (areaID, description)

MembershipHasInterest(membershipID, areaID)
FK: membershipID ref Membership, areaID ref Area of Interest



Conceptual Model