

# **Chapter 1**

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## **Introduction**

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# Chapter 1

## Purpose:

A clothes store system serves several purposes:

1. Inventory Management: It helps in tracking the stock of clothes, sizes, colors, and styles available in the store.
2. Sales Management: It facilitates sales transactions, including cash, credit, and refunds.
3. Customer Management: It enables the management of customer profiles, including purchase history, preferences, and loyalty programs.
4. Analytics and Reporting: It generates reports on sales trends, popular items, and inventory turnover, aiding in decision-making and planning.
5. Order Processing: It streamlines the process of receiving and fulfilling customer orders, whether online or in-store.
6. Employee Management: It helps in managing employee schedules, commissions, and performance tracking.
7. Integration: It can integrate with other systems like accounting software, CRM systems, or e-commerce platforms for seamless operations.

## Scope:

The clothing store sells women's clothing of all kinds. There is also a special section for children's clothing. The system is concerned with facilitating sales , management and inventory operations.

## Objectives:

Adding the possibility of linking branches and working to facilitate communication between them.

### Abbreviation:

- POS: point of sale.
- B2G1: buy 2 get 1.
- FTE: full time employee.
- OOF: out of stock.
- UPT: unit per transaction.
- KPI: key performance indicator.
- WJ: winter jacket.
- SJ: summer jacket.
- WP: winter pant.
- SP: summer pant.
- WB: winter blouse.
- SB: summer blouse.
- WS: winter shoes.
- SS: summer shoes.

### Some Abbreviation about colors:

- 1: white.
- 2: black.
- 60: red.
- 64: dark red.
- 35: blue.
- 40: baby blue.

### Some abbreviation about size:

- 61: medium.
- 62: large.
- 63: X Large
- 64: 2X Large.
- 65: 3X Large.

## Terminology:

- Casual.
- Soiree.
- Sneakers.
- Hoodie.
- Jeans.
- Sweater.
- Dress.
- Pants.
- Jacket.
- Shirt.
- Shorts.
- Floor.
- Fitting room.
- Cargo.
- Short.
- Over.

## Definition:

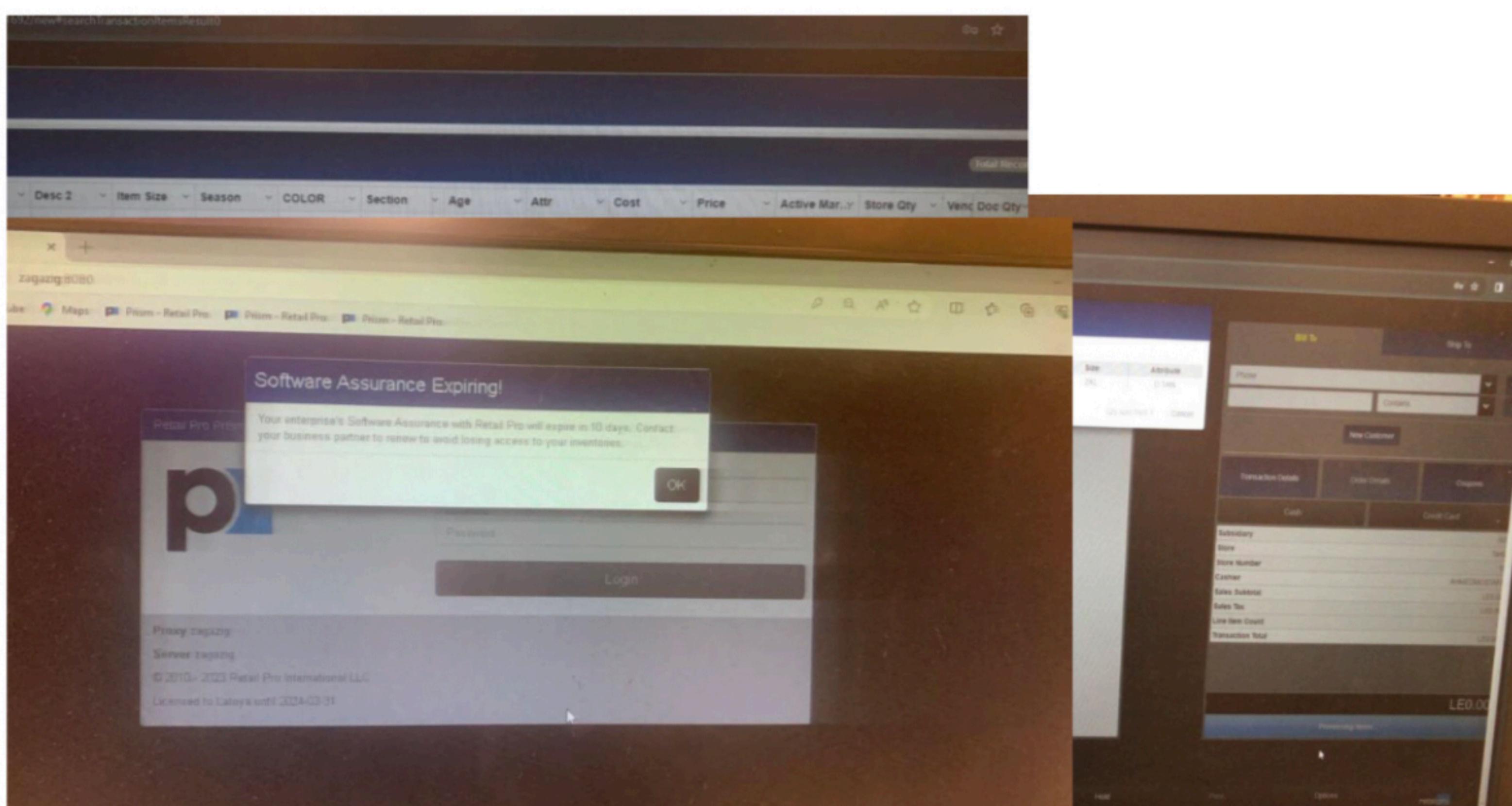
The system is concerned with facilitating sales , management and inventory operations.

- 1) **Inventory :** Counting everything that is in the branch and the store and matching it with the

system. When there is a difference in increase, then it is called over, and when there is a decrease, it is called a short.

- 2) **Turn** : It means whose role is in the work (meaning the customer goes to whom in the work team).
- 3) **Three OR Bile** : Not in the sense of 3, but in the sense of the entire model's sizes from medium to 3XLarge.
- 4) **Point of sale** : This is the step that takes us to the invoice step.
- 5) **Z Out** : end the shift and close the daily.
- 6) **New transaction** : A new process, which is opening a sales invoice, takes place in the point of sale step.
- 7) **Unit per transaction** : Number of units in the process (number of pieces in the invoice).
- 8) **Dona** : section contain best Seller items.

#### References :



Apr 4, 24 4:56 PM

# LATOYA

WOMEN'S COLLECTION

## Tanta

10  
TAN

Cashier: AHMEDMOSTAFA

Associate: 10ASHWAQ ALARABY MOHAMED

Cust\_Name: MOSTAFA

Cust\_Phone: 01146946210

Cust\_Address: tanta

Transaction # 24733

Date: Apr 4, 24 4:56 PM

### Items

Type	Qty	Ext Price
Sale	1 *LE795.00	LE795.00

1

Item Sold

Sale Subtotal: LE795.00

Total Discount: LE0.00

Receipt Total: LE795.00

### Tenders

Payment Method	Amount
Cash	LE795.00



703360360001099716

يسعد باستبدال أو استرجاع البضاعة بشرط عدم حدوث تغير في ظاهرها ذلك خلال 14 يوم من تاريخ الشراء مع احضار البون الأصلي للشراء ماعدا السواريه لا يبدل ولا يسترجع السعر شامل هدية القيمة المقطولة شكرًا زيارتك، نرحب فريراً س.ت. 8891 بـ تـ 222-89-96 9588 لـشكـوـي

# **Chapter 2**

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## **Feasibility Study**

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# Technical Feasibility

This software is feasible within the limits of current system. It is available within the given resource constraints and the available hardware. This software can easily handle all processes the staff need. It is good and practical proposition. In addition, the current technical resources are sufficient for this software system. It is easy and available to update and upgrade the software. But the staff do not have the necessary technical expertise to fix the software when failure occurs.

# Operational Feasibility

The current software provides adequate throughput and response time as well as it provides end users and managers with timely, pertinent and accurate formatted information. Services provided by this software are flexible and expandable. There are no problems faced by the staff. And of course, the software reduces time considerably.

# Economic Feasibility

Tangible cost:

- \* Staff working hours
- \* Rent the place
- \* Rent inventory
- \*Buying material
- \* Equipment of the industry
- \* Maintenance

Intangible cost:

- \* Experience
- \* Team cooperation
- \* Brand

Tangible benefits:

- \* Revenue from sales
- \* Customer traffic
- \* Increase activity speed
- \* Market expansion

Intangible benefits:

- \* Customer satisfaction
- \* Trust between customer and seller

One time cost:

- \*Store equipment
- \*Mannequin
- \*Hangers
- \* Point of sale
- \*Permits and licenses

Recurring costs:

- \*Cost of maintenance the store
- \*Cost of rent the store
- \*Cost of rent the inventory
- \* Taxes and insurance

# **Chapter 3**

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## **Proposal System analysis and design**

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# Clothe Store

## Manager Interview

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-> عرف نفسك :

. الاسم : بولا أمير عبد المسيح

. السن : ٢٢

. المسمى الوظيفي : نائب مدير فرع شركة latoya بطنطا

. الخبرة : سنتين

١- اسم المتجر ؟

- latoya

٢- هل يوجد فروع أخرى ؟

- ٨ فروع

٣- هل لديك نظام ؟

- نعم

٤- هل النظام الحالي يربط بين الفروع ؟

- لا

٥- ما هي البنية العامة للنظام ؟

- نقطة البيع ، إدارة الجرد ، البحث عن سلعة ، إنشاء تقارير ( عدد القطع المباعة ، الفواتير ، العجز ، الزيادة ) ، التحويل بين الفروع .

٦- كيف تتفاعل مكونات النظام معا ؟

- تتفاعل هذه المكونات من خلال ترابط البيانات، مما يسمح لمديري المتاجر بتحسين إدارة المخزون وتوفير خدمة عملاء ممتازة داخل المتجر وعبر الإنترنت.

- ٧- كيف للبيانات ( مثل معلومات المنتج ، والعميل ، وتقارير المبيعات ) تخزن في النظام ؟

- البيانات يتم تخزينها وإدارتها في قاعدة بيانات عن طريق تكاملها مع software application مثل نقطة البيع ، والجرد ، وال website .

- ٨- ما دور كل من المدير و الموظف و الكاشير في النظام ؟

- المدير :

استرجاع المنتجات

تحويل المنتجات من فرع لفرع

اداره الجرد

- الكاشير :

تسجيل الدخول لنظام نقطة البيع

البحث عن منتج عن طريق الباركود

- الموظف :

مساعدته العميل

- ٩- كيف يعمل نظام نقطة البيع ؟ وما هي المميزات التي يتضمنها ؟

- يعمل نظام نقاط البيع عن طريق : حساب المبلغ الإجمالي المستحق للمشتريات، ويقبل أشكال مختلفة من ميزات الدفع: مسح الباركود، و تحديد المدفوعات، واصدار الفواتير

- ١٠- هل يعمل النظام مع خدمات خارجية ( مثل website ، خدمات دفع الكتروني ) ؟

- نعم ، لدينا موقع

-> عرف نفسك :

. الاسم : احمد مصطفى

. السن : ٢٠

. المسمى الوظيفي : كاشير

. الخبرة : سنه

١- هل تستخدم نظام حالي ؟

- نعم

٢- ما هي مميزات النظام الحالى ؟

- سهل الاستخدام ، الربط بين نظم الدفع (visa)

٣- ما هي عيوب النظام الحالى ؟

- تعديل النظام يتطلب العديد من العمليات الصعبة  
- الفروع ليست مرتبطة مع بعض

٤- كيف يؤثر النظام في المبيعات ، ادارة الجرد ، وارضاء العملاء ؟  
- يسهل النظام المعاملات بشكل أسرع ويشجع على زيادة المبيعات  
- تحسين رضا العملاء عن طريق عمليات بيع سريعة

٥- ما هي متطلبات النظام ؟

- نقطه بيع  
- ادارة المنتجات  
- التعزيزات والخصومات  
- اداره الجرد  
- توافر طرق مختلفة للدفع  
- الربط بين الفروع  
- إنشاء تقارير ( عدد القطع المباعة ، الفواتير ، العجز ، الزيادة ) .

- البحث عن متنج باستخدام الباركود

٦- ما الإجراءات المتخذة لمنع الوصول الغير مصرح به ؟

- تحديد الصلاحيات ، المراقبة

٧- كيف تتم ادارة الجرد ؟

- يتبعى لجنة من ادارة المخزن مكونة من 6 افراد منهم رئيس الجرد و بيعملوا بحث للبضاعة و حد من ادارة الفرع وبعد وراثه لو العدددين متطابقين يدخلوها على شيت اكسيل و يراجعوا على العجز أو الزيادة ويعملوا عملية تسوية بين الشيت و السيسitem

٨- ما هي سياسة الاسترجاع ؟

-استرجاع خلال 14 يوم. لو فيه عيب صناعة 30 يوم. و في استثناء للعملاء المهمين

- لازم يكون بباسورد من مدير الفرع و نائب مدير الفرع لمنع السرقة

٩- هل لديك الأدوات والموارد الازمة لإتمام مهمتك بكفاءة ؟

- نعم

## Customer Interview

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-عرف نفسك:

. الاسم: جيسيكا عmad

. السن: 19

1- هل كان هناك شيء محبط أو سيء أثناء عملية التسوق؟

- نعم.

2- ما الشيء الذي تسبب بإحباطك؟

- لم أستطع استرجاع القطعة من الفرع الآخر.

3- كيف وجدت الموقع الإلكتروني؟

-لقد كان سهل في التعامل.

4- ما مدى سهولة عملية الدفع؟

- لقد كانت سهلة وسريعة.

5- ما الحافز الذي قد يدفعك للتسوق هنا مرة أخرى؟

- سهولة عمليات الدفع و توافر القطع.

6- هل تفضلين التسوق الالكتروني ام النزول الى المحل الفعلي؟

-لقد كنت معتادة على النزول بمنفسي الى المتجر، لكنني عندما جربت التسوق الالكتروني غيرت رأيي.

7- ما العامل الذي أثر على ذلك الاختيار؟

- سهولة استخدام الموقع الالكتروني.

8- هل جربتي ان تسترجعي او ان تستبدلي قطعة ما؟

-نعم.

9- كيف كانت العملية؟

- لقد كانت سهلة عندما كنت في نفس الفرع الذي قمت بالشراء منه. أولاً طلب مني الكاشير الاتصال ثم عرضه على مدير الفرع. ثم قام المدير بعمل الإجراءات بنفسه.

10- برأيك ما الذي سيجعل تجربتك أفضل؟

- إذا تم ربط جميع الفروع مع بعضها لأنتمكن من استبدال القطع من أي فرع أريده.

11- كيف كانت تجربتك مع الموظفين هناك؟

- لقد كانوا ودودين و لطفاء.

Name

1 response

بولا أمير عبد المسيح

### Did you use any software before ?

1 response

 Copy



- Yes, I did
- No,I didn't

### How would you rate the ease of using point-of-sale (POS) system?

1 response

 Copy

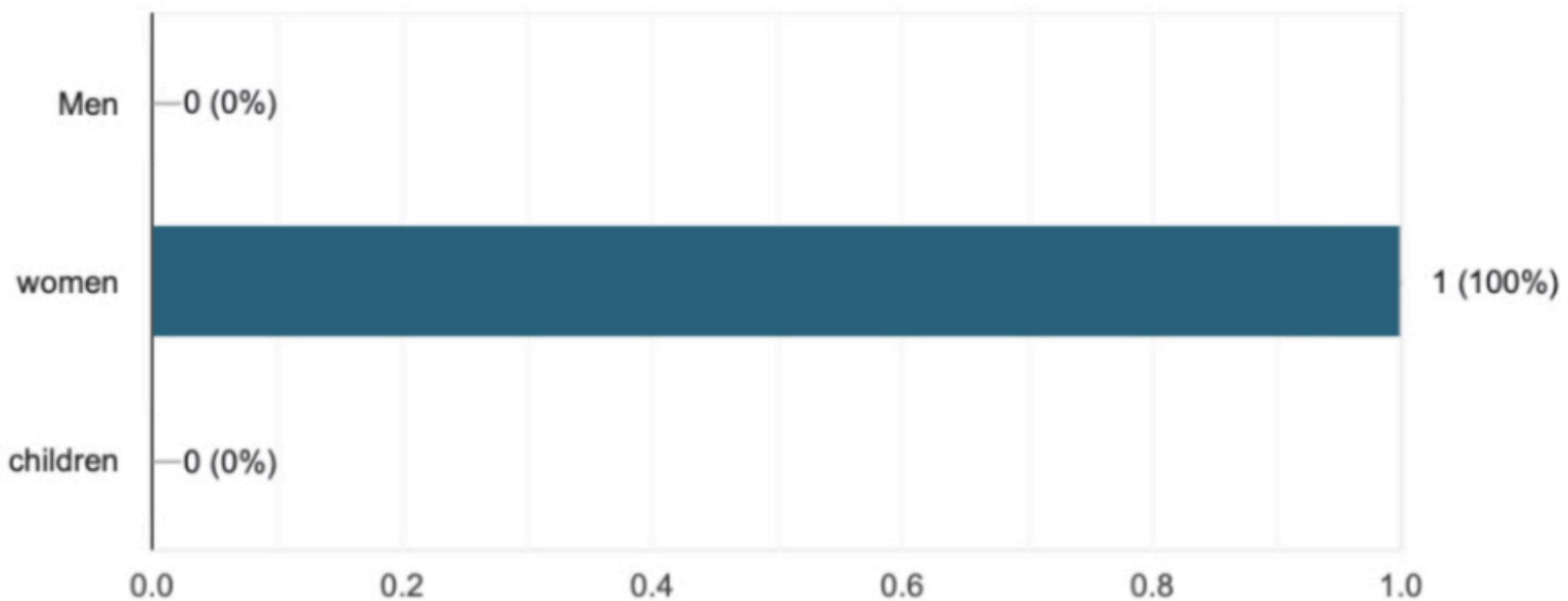


- Very easy
- Somewhat easy
- Neutral
- Somewhat difficult
- Very difficult

## What are the clothes' categories in the store ?

Copy

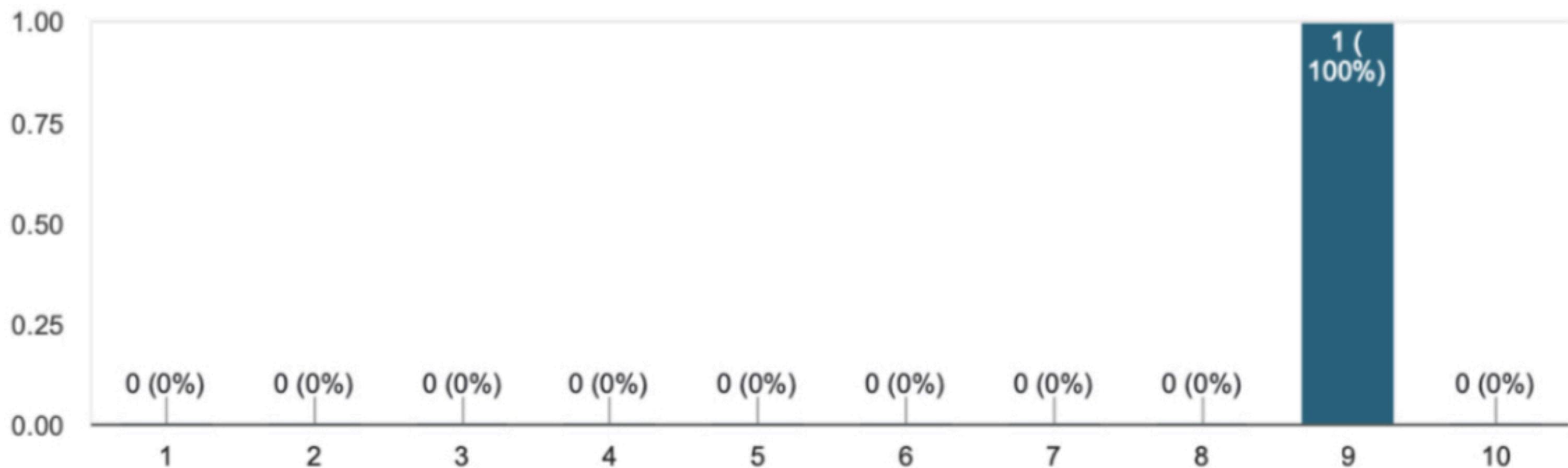
1 response



## How satisfied are you with the system's ability to handle customer inquiries?

Copy

1 response



## What do you prefer the data to be classified according to...

 Copy

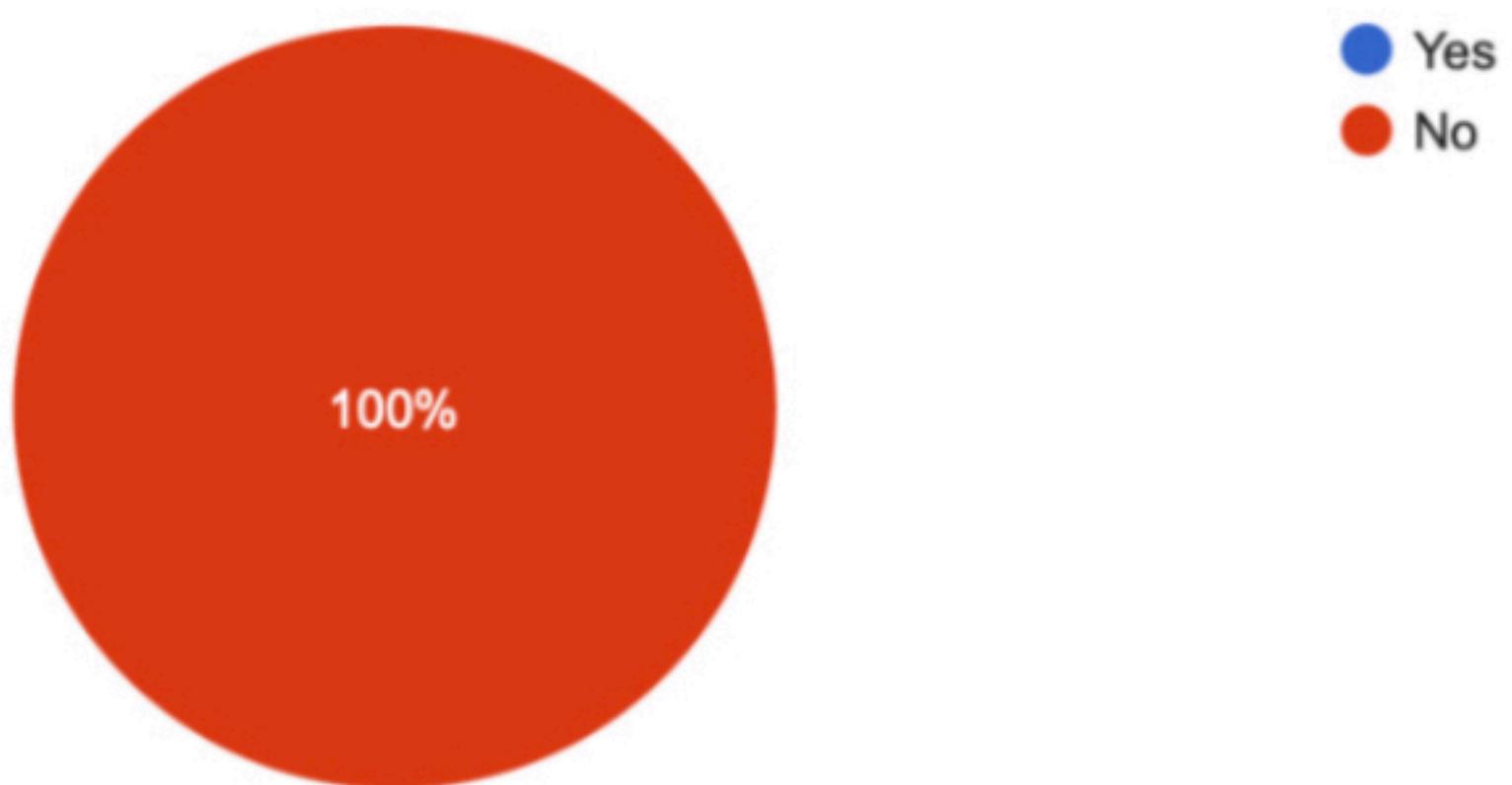
1 response



## Do you need to be alerted if a product is out of stock ...

 Copy

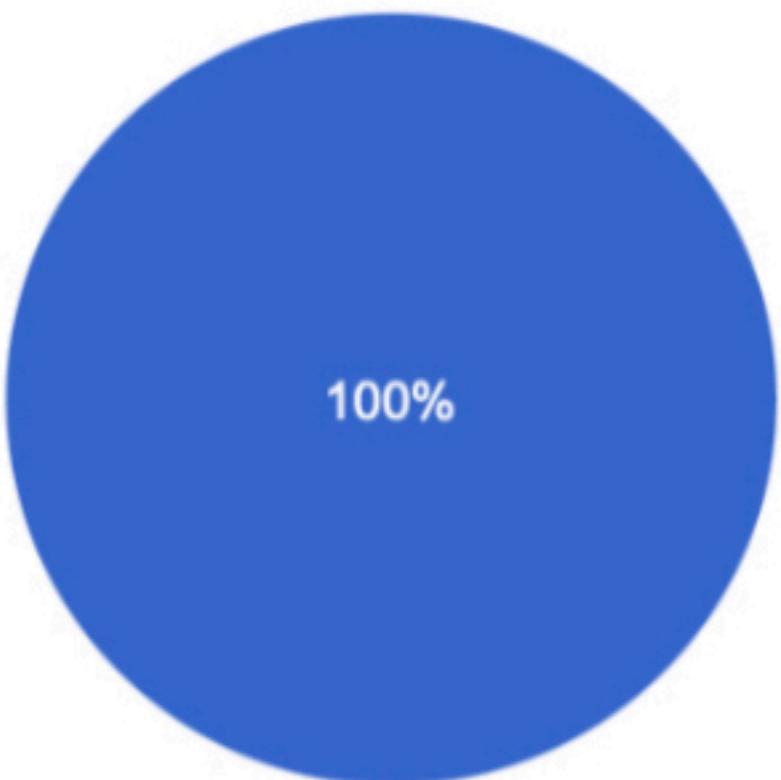
1 response



## Which feature would you find most helpful for managing inventory?

 Copy

1 response



-  Real-time stock tracking
-  Automated restocking alerts
-  Barcode scanning
-  Integration with suppliers

## Do you have the necessary tools and resources to perform your tasks effectively ?

 Copy

1 response

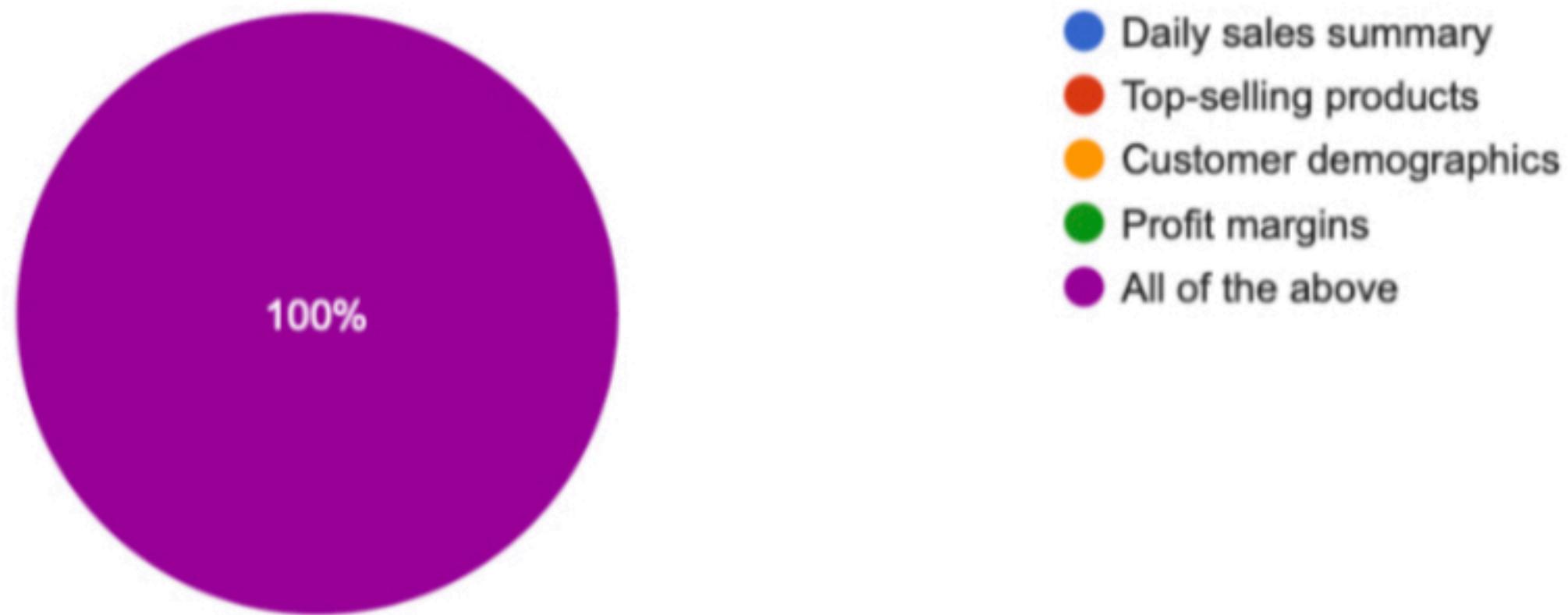


-  Yes
-  No

## What type of sales reports would be most valuable for decision-making?

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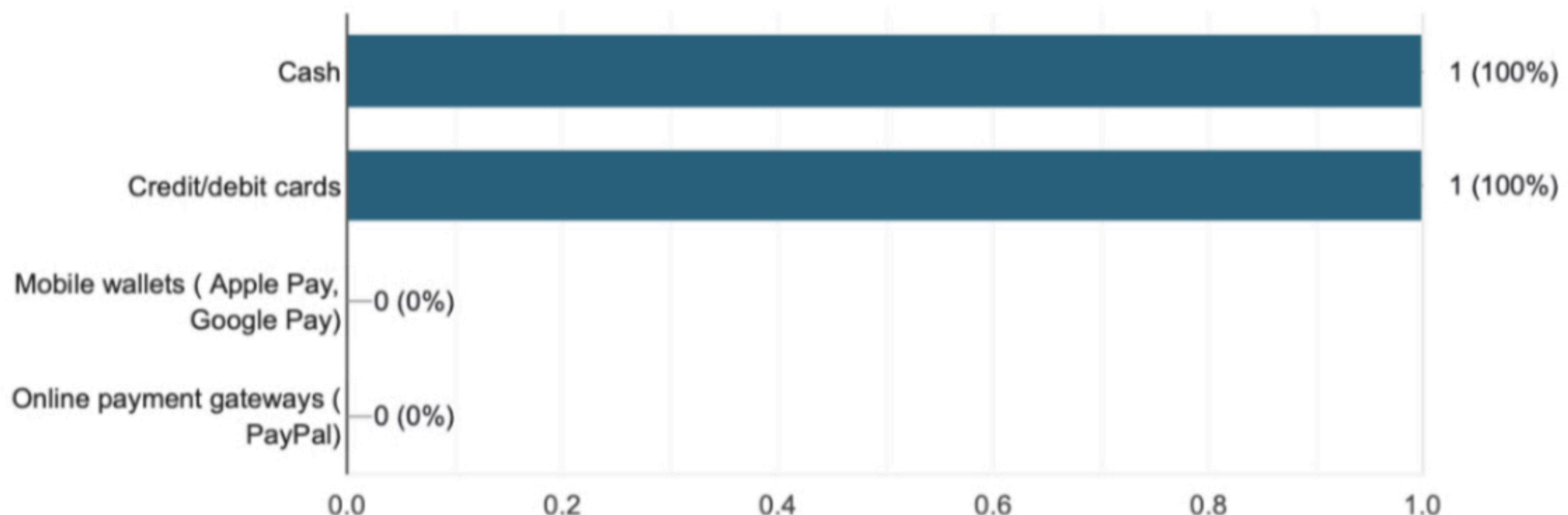
1 response



## Which payment method do you think is most convenient for customers?

 Copy

1 response



## Name

1 response

بولا أمير عبد المسيح

## What changes or enhancements would you recommend to add in our system?

1 response

I recommend that the system should provide easier maintenance and a more enhanced performance

## Which security feature is most important for the system?

1 response

The most important security feature is the data security feature, to insure that sensitive information such as customer data, stock data and transaction records are protected and maintained

## Have you encountered any issues with processing transactions or using the technology in the existing system ?

1 response

Yes, the maintenance of the system is complex which requires the assistance of IT technicians from the system company

## **How often do you encounter out-of-stock items?**

1 response

It depends on the season, but on average, we encounter out-of-stock items every week

## **Is the inventory system accurate in reflecting available stock?**

1 response

Yes, it is

## **How user-friendly is the POS system?**

1 response

The POS system is pretty user-friendly and easy to use

## **Have you generated reports or analyzed sales data using the system?**

1 response

Yes I have used it to track daily sales, determine over/short stock and manage inventory

Are there any functionalities you find particularly useful or challenging?

1 response

For me, POS is the most useful functionality in the system

# Clothe store

## Requirement Definitions

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### 1. Unspoken Requirements :

- knowing the number of pieces sold by each employee for commissions.
- The customer faces a problem in returning a product when he takes it from another branch or loses the bill.
- Repeat customers get points and discounts.
- Troubleshooting should be easy.

### 2. Stakeholders :

#### . Branch Manager :

- refund items(permission)
- transfer items
- inventory management
- manage employees

#### . Cashier :

- login to system
- search items
- Scan item
- prepare bill
- print bill
- calculate bonus for customer and employee.
- Login with fingerprint

#### . Customer :

- buy items
- refund items
- select item
- receive bonus
- receive bill

- . Online Customer :
  - Buy items
  - Select items
  - Refund items
  - Login to website
  - Receive bill by email
  - Pay for cart
- . System Administrator :
  - Troubleshoot Issues
  - Manage database.
  - Maintain a website.
- . Employee :
  - assist customers
  - receive bonus
  - Login with fingerprint

### 3. Requirement types :

- > Functional requirements :
  - Point of sale :
    - . should be user-friendly.
  - Product Catalog Management :
    - . The system should allow the store owner to add, edit, and remove products.
    - . It should support categorization .
  - Promotions and Discounts:
    - . Repeat customers get points and discounts.
    - . knowing the number of pieces sold by each employee for commissions and promotions.

. Apply discounts based on specific conditions (seasonal sales, loyalty programs).

- **Inventory Management:**
  - . Barcode tracking of available stock.
- **Payment Integration:**
  - . Integration with payment gateways (credit cards, PayPal, mobile wallets).
  - . Secure handling of payment information.
- **Connect branches:**
  - . to easily refund items from another branch.
  - . Customers can earn and redeem loyalty points at any branch.
  - . If a particular branch has excess stock, it can transfer items to other branches where demand is higher.
- **Analytics and Reporting:**
  - . Sales reports
  - . popular products
  - . customer behavior analysis
  - . inventory turnover
  - . short
  - . over
  - . Bills number
- **Search and Filtering products:**
  - . Search for an item using a barcode.
  - . Filters based on size, color, price range.

- Returns and Refunds:
  - .Clear policies for returns and refunds.

#### -> Non Functional requirements :

- Performance:
  - .The website should load quickly.
  - .ability to handle peak traffic during sales or Promotions.
- Security:
  - .Protection of customer data.
  - .refund items can only done with the manager permission .
- Scalability:
  - .Ability to handle increased traffic as the store grows.
- Legal and Compliance:
  - . Terms of service and privacy policy.
- Usability:
  - . Intuitive user interface.
  - . Troubleshooting should be easy.

# **Chapter 4**

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## **Modeling**

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## Flow of event

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# 1

**Use case :** Login to System

**Actors:** Cashier

**Description:** The cashier logs into the system by entering his username and password. Upon successful authentication, they gain access to the cashier interface, enabling him to perform his tasks

# 2

**Use case :** Scan Item

**Actors:** Cashier

**Description:** when a customer wants to buy an item he/she has to give it to the cashier to tell him/her the price and output the receipt.

# 3

**Use case :** Select item

**Actors:** Customer , Online Customer

**Description:** It is mandatory for the customer to select an item before buying it.

# 4

**Use case :** Buy item

**Actors:** Customer , Online Customer

**Description:** After selecting items the customer buys/pays them cash or credit and receives bonus.

# 5

**Use case :** Buy online

**Actors:** Online Customer

**Description:** Online customers can buy online on the website.

# 6

**Use case :** Manage refund items

**Actors:** Manager

**Description:** The store manager grants permission to the refund process, and manages refunded items by returning resalable ones to inventory and the system.

# 7

**Use case :** Assist Customer

**Actors:** Employee

**Description:** When a customer is shopping and selecting items, an employee tries to help them with searching an item for them or checking the item's price, if the customer buys the item he receives bonus.

# 8

**Use case :** Login with fingerprint

**Actors:** Employee

**Description:** when any employee starts his/her work he has to login to the system to prove his/her attendance.

# 9

**Use case:** Maintain Website

**Actors:** System Administrator

**Description:** The system administrator manages the website's database, updates product information and ensures a satisfying user experience

The system administrator manages the website's database, updates product information and ensures a satisfying user experience

# 10

**Use case:** Transform Items

**Actors:** Manager

**Description:** Only the manager is responsible for transforming items between branches.

# 11

**Use case:** Troubleshooting Issues

**Actors:** System Administrator

**Description:** The system administrator troubleshooting technical issues related to the system to resolve hardware and software issues

# 12

**Use case :** refund item

**Actors:** customer , online customer

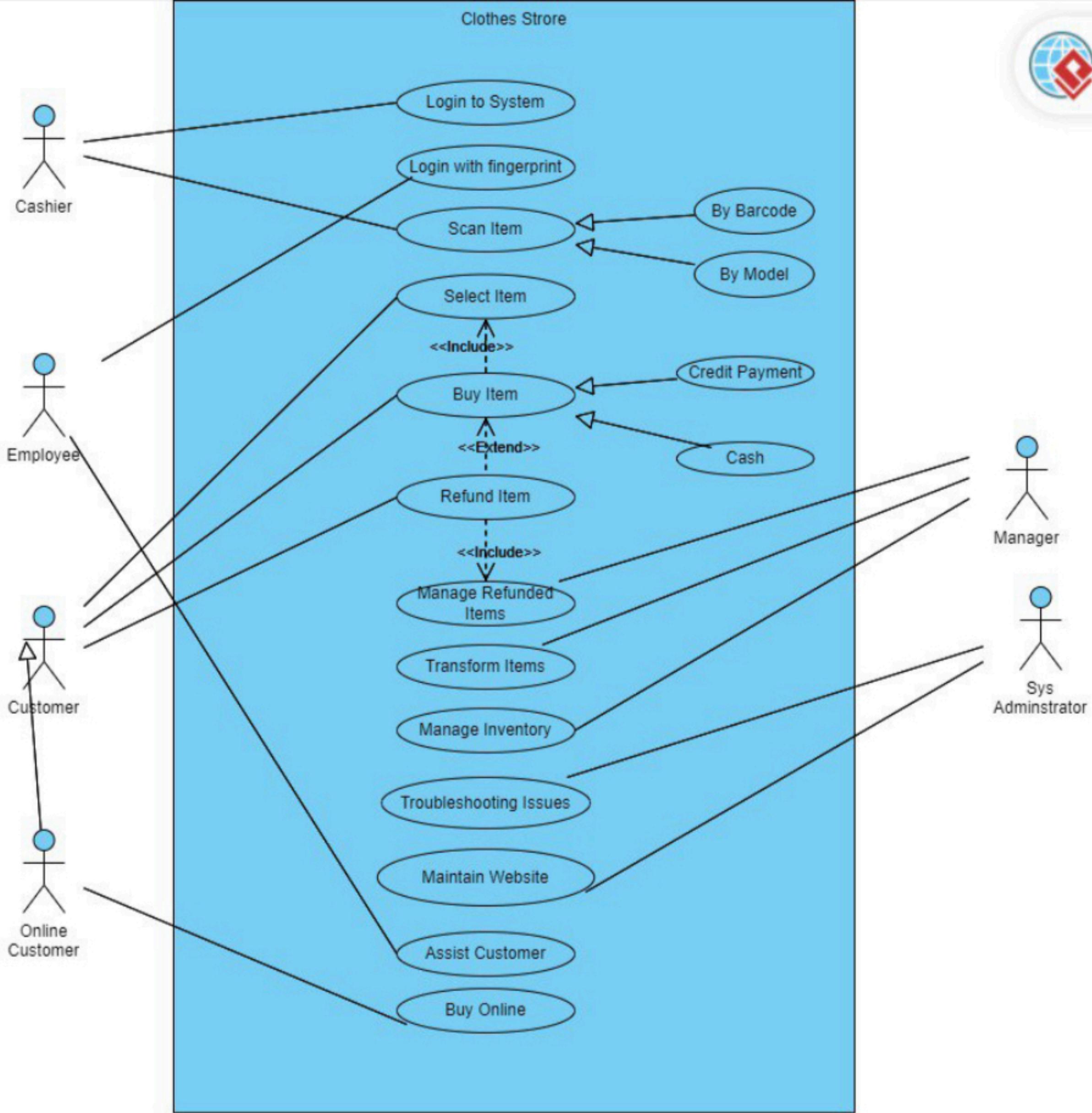
**Description:** The customer presents the item and the receipt, and the cashier verifies eligibility and ask for manager permission before starting the refund process

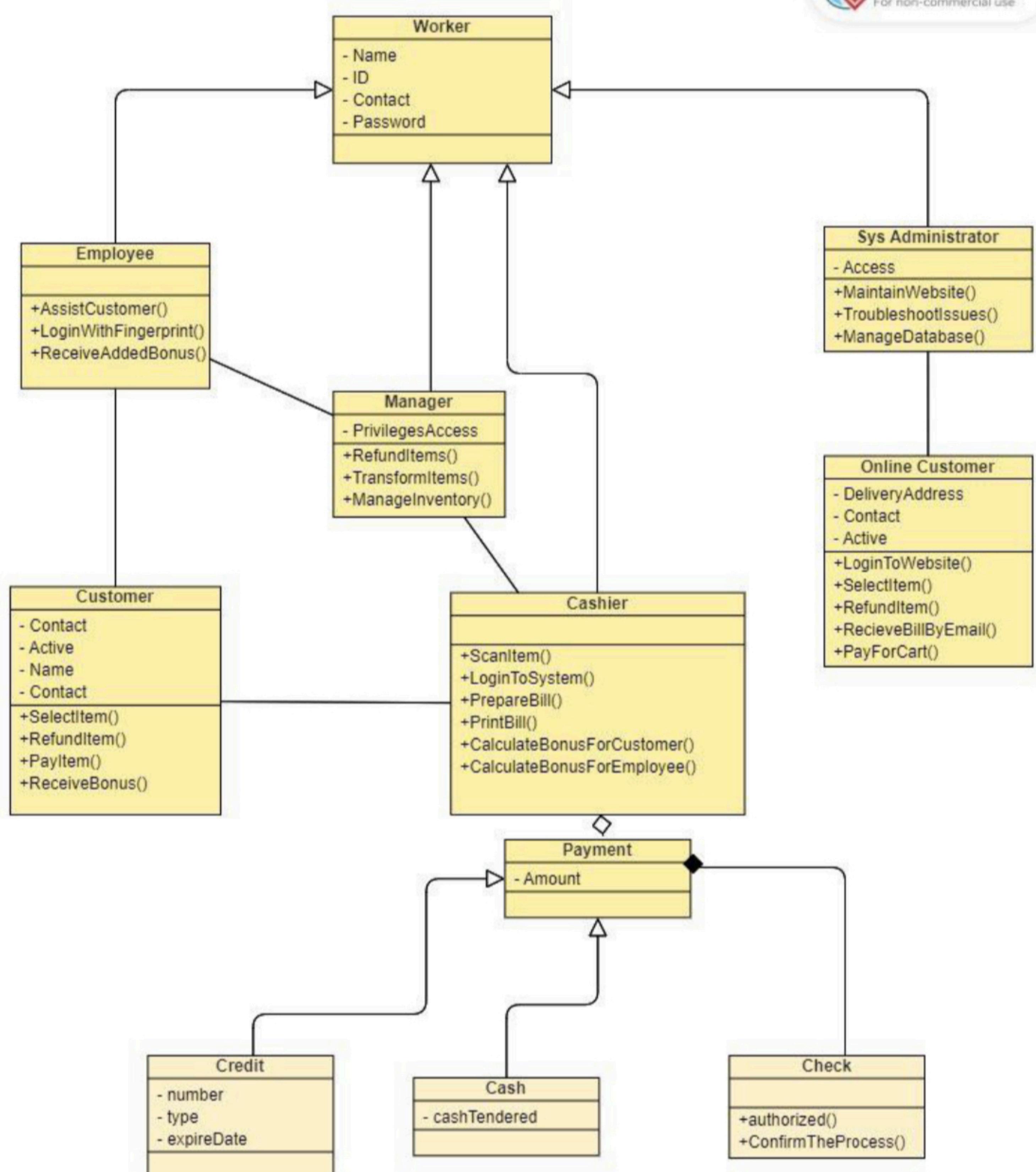
# 13

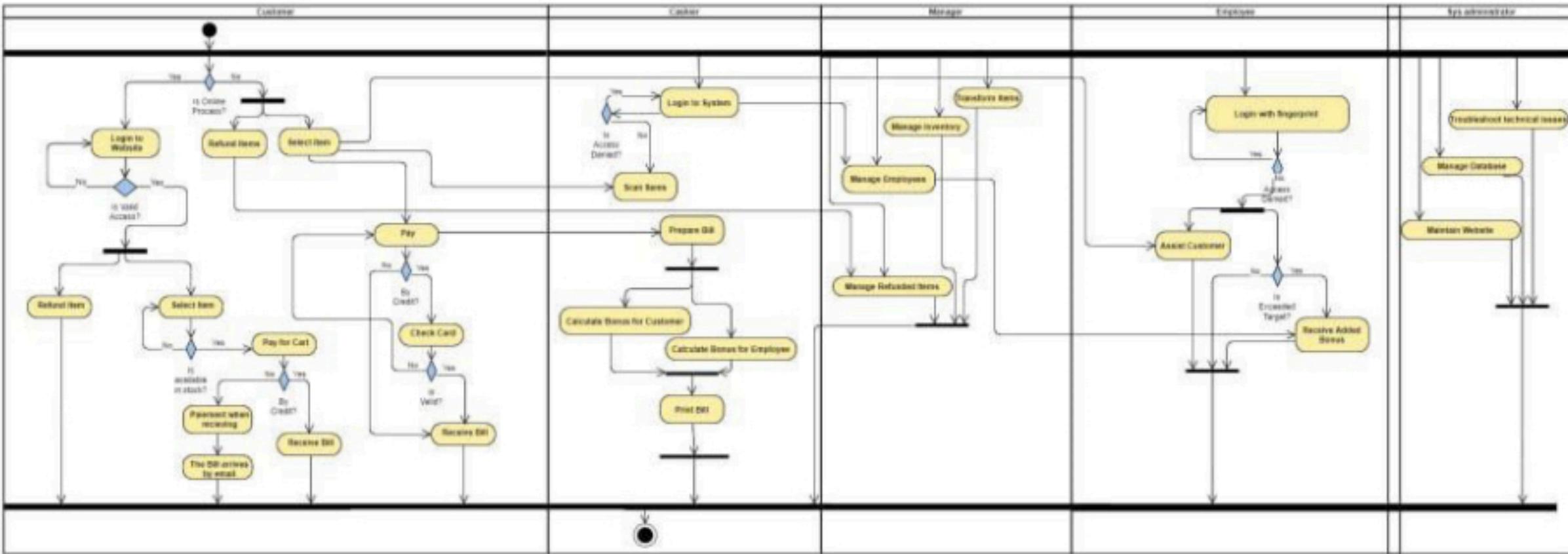
**Use case :** Manage inventory

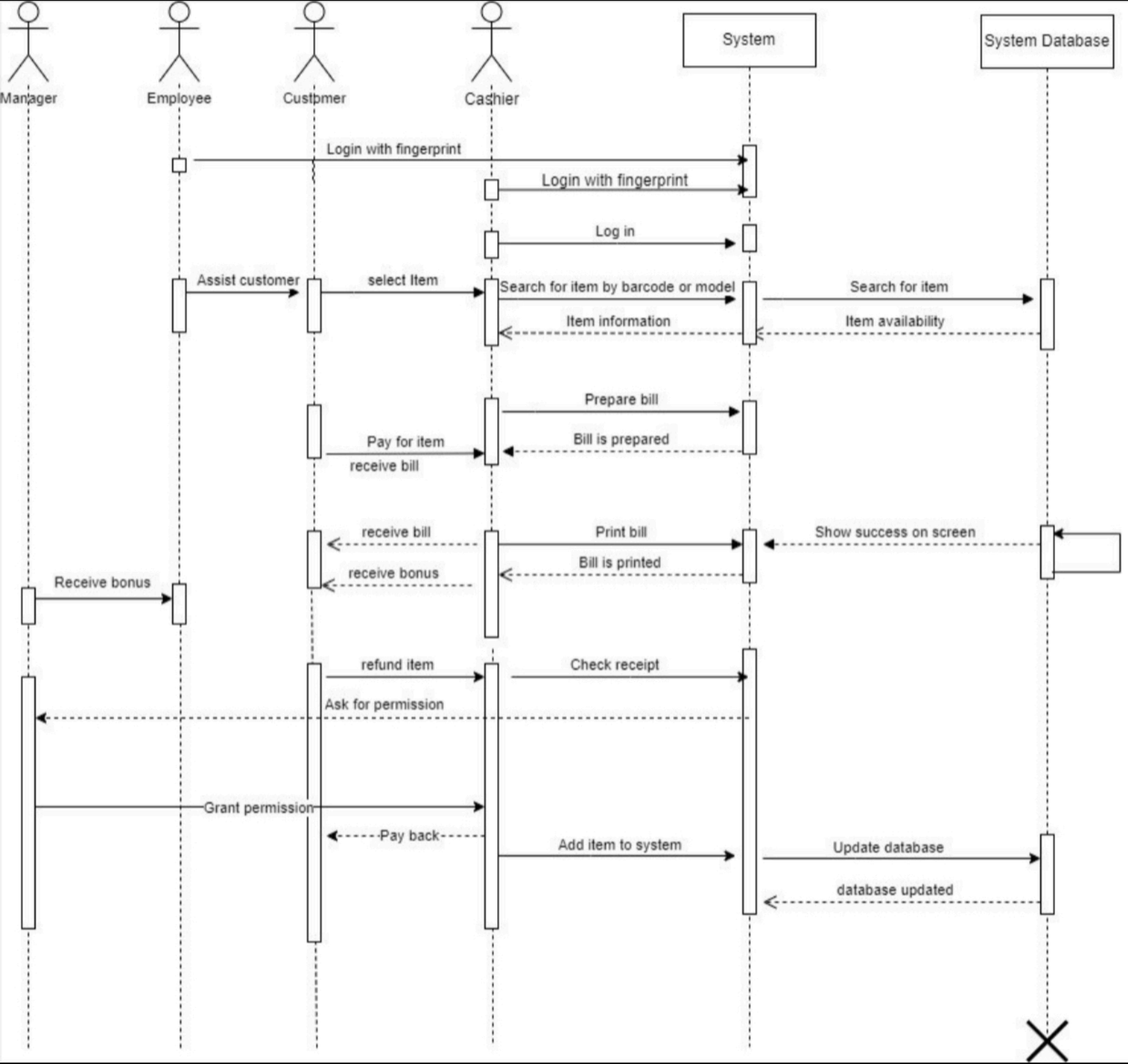
**Actors:** Manager

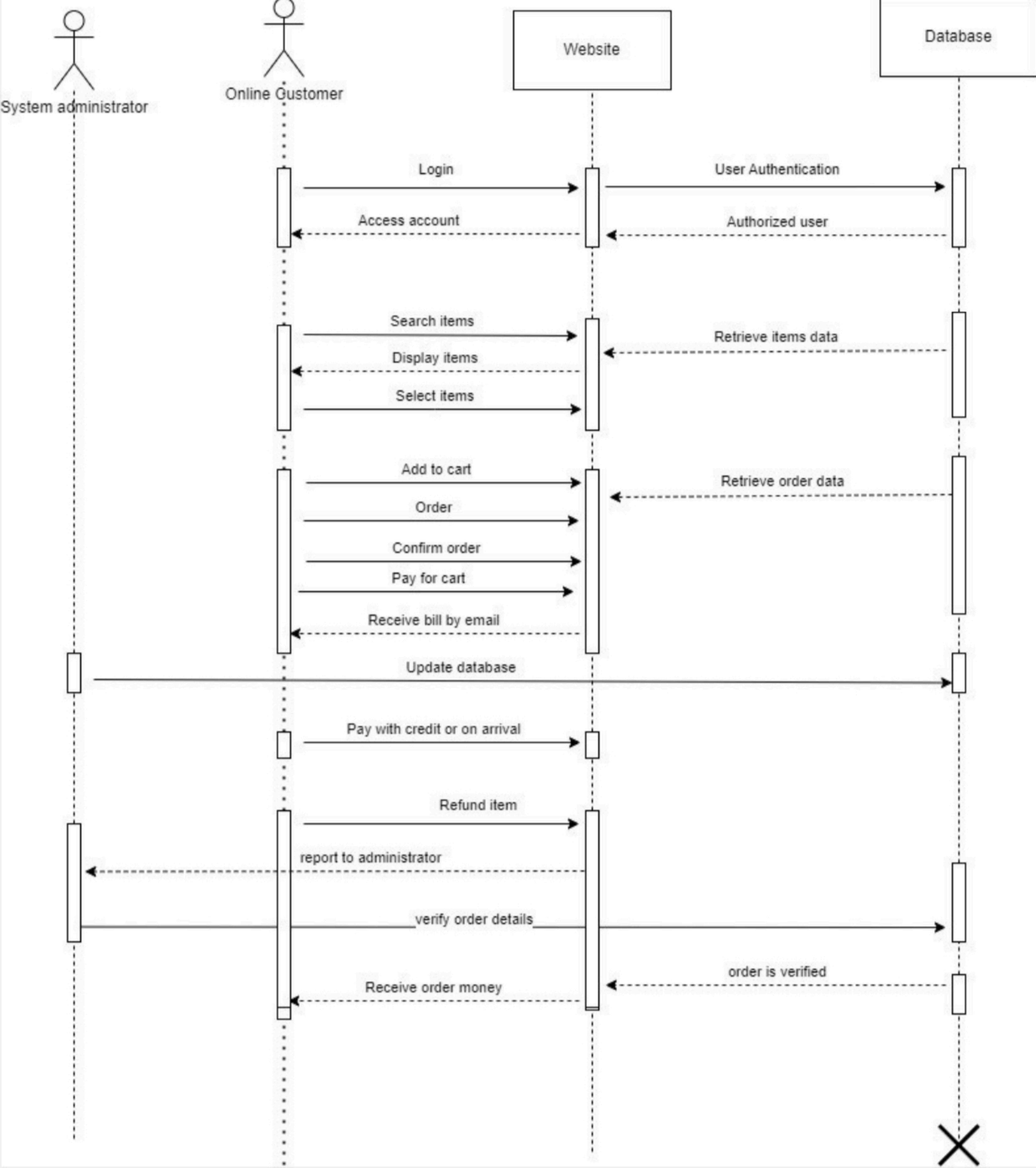
**Description:** A committee comes from the warehouse management, consisting of 6 individuals, including the head of inventory, and they conduct a search for the goods, and someone from the branch management counts and sees if the two numbers are identical. They enter them into an Excel sheet, review the deficit or excess, and carry out a reconciliation process between the sheet and the system.











# **Chapter 5**

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## **System Interface**

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SPECIAL COLLECTION

NEW ARRIVALS

BEST SELLERS



## SHOP BY CATEGORY



CASUAL



SIOREE



JEANS



SHOES



BAGS

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# LATOYA

## FOLLOW US





## SPECIAL COLLECTION

## NEW ARRIVALS

## BEST SELLERS



CASUAL



SIOREE



JEANS



SHOES



BAGS

SORT BY | RECENTLY ADDED | ▾

FILTER BY | JACKETS | ▾



CROPPED TRENCH COAT

799 EGP



BLACK PUFFER JACKET

1999 EGP



BEIGE PUFFER JACKET

1999 EGP



DENIM JACKET

1499 EGP



BLACK COAT

2999 EGP



BLACK TRENCH COAT

3499 EGP



NAVY BOMBER JACKET

999 EGP



WINDBREAKER JACKET

999 EGP



PINK BOMBER JACKET

999 EGP



BLACK LEATHER JACKET

2999 EGP

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## WINDBREAKER JACKET

999 EGP

[ADD TO CART](#)

[FAVOURITE](#)


### Available size

[S](#)
[M](#)
[L](#)
[XL](#)

### size chart

Size	Bust		Length	
	inch	cm	inch	cm
S	36.22	92	26.38	67
M	37.80	96	26.77	68
L	39.37	100	27.17	69
XL	40.94	104	27.56	70

### Product details

- Material: 100% Polyester
- Fabric thin, soft and quick dry, has no stretch
- Hooded anorak jacket featuring Zip Up Design, color block style, regaln sleeve and side pockets
- Care Instructions :Hand Wash ,Machine Washable, Do not Bleach

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BEST SELLERS

## Cart items



WINDBREAKER JACKET

Quantity

+ 1 -

999 EGP



BLACK PUFFER JACKET

Quantity

+ 1 -

1999 EGP

Shipping

99 EGP

Total

3097 EGP

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## CHECKOUT

Name

Email

Address

Phone number

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# **SDLC Model**

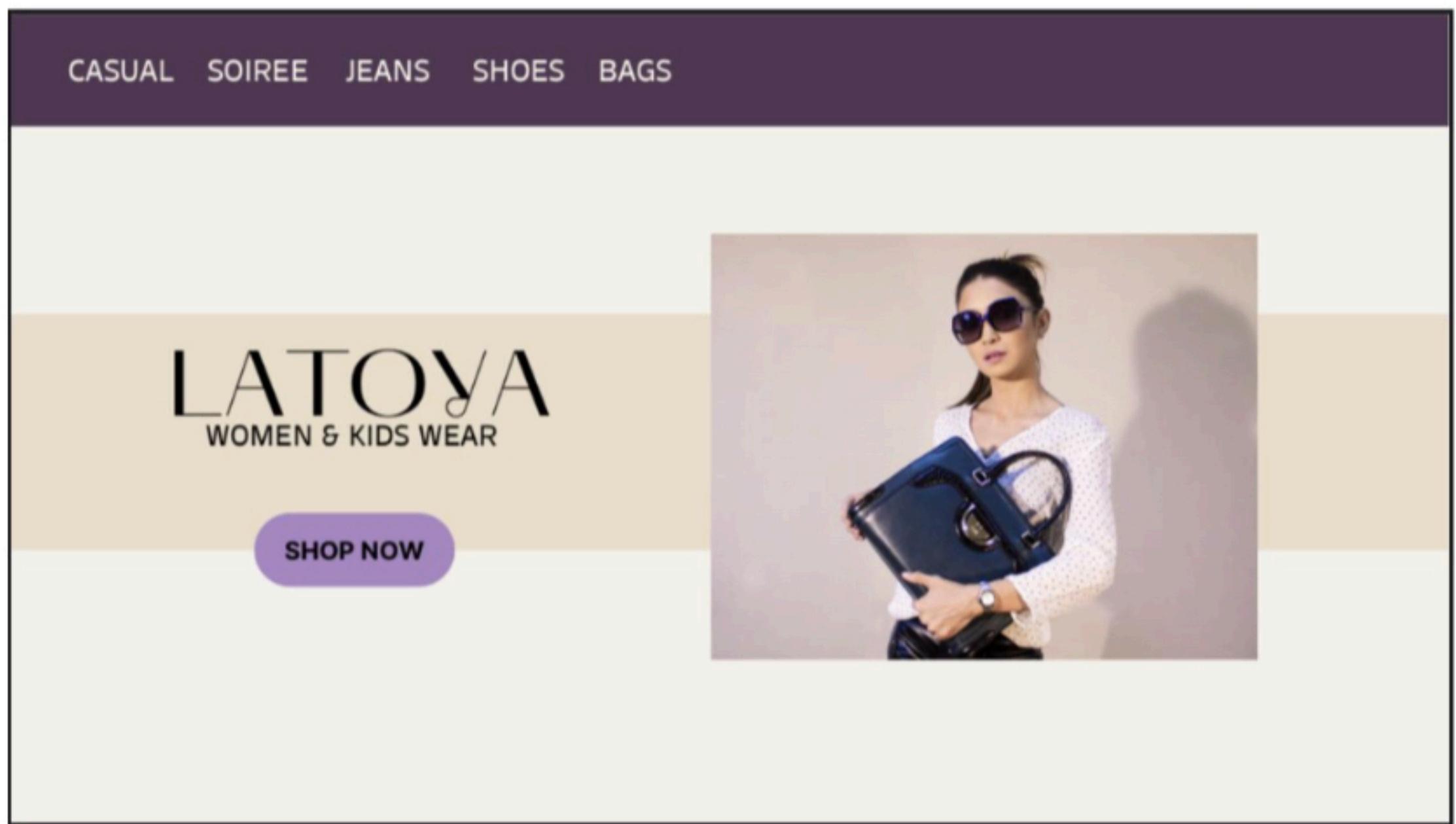
The suitable SDLC model for your system and describe why you use this model?

---

- Clothe store system follow incremental model:
  - . for me as a software engineer :
    - I am dealing with a large system that contains 8 branches, stores, and goods. If there is an error or misunderstanding of some points in the requirements gathering stage:
  - . In the waterfall model: the process of requirements analysis, system architecture design, and implementation process will take place, and the rest will be expensive.
  - . The incremental model: I will be able to catch the error earlier and improve the product in a way that suits the customer
- . for my Customer :
  - I am designing a customized product for a specific customer who will pay a lot so he should be able to give his opinion about each increment to be acceptable at the end for him unlike the waterfall model where he can't give his opinion, But this is under the terms that there is a limit to modifications to the system.

- User interface follow incremental model :

.first increment :



. Second increment :

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What are you looking for ?

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# LATOYA

WOMEN & KIDS WEAR

SHOP BY CATEGORY



CASUAL

SOIREE

JEANS

SHOES

BAGS

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f

Instagram icon

. final increment :

The image shows the homepage of the LATOYA website. At the top, there is a navigation bar with the brand name "LATOYA" in a large serif font, followed by links for "Home", "About", and "Contact". To the right of these links is a search bar containing the placeholder text "What are you looking for?". Below the search bar are icons for a magnifying glass, a user profile, a heart, and a shopping cart. A horizontal menu bar below the navigation bar includes "SPECIAL COLLECTION", "NEW ARRIVALS", and "BEST SELLERS". The main visual is a photograph of three women standing outdoors in a coastal or beach-like setting. The woman in the center is wearing a bright orange blazer over a white top. The word "LATOYA" is printed in large, white, lowercase letters across the middle of the image, with the subtitle "FOR WOMEN & KIDS WEAR" underneath it. Below this section, the text "SHOP BY CATEGORY" is displayed in a large, bold, brown font. Underneath this heading are five categories, each with a small thumbnail image and a label: "CASUAL" (a woman in a dark jacket), "SIOREE" (a woman in a blue dress), "JEANS" (a pair of jeans), "SHOES" (a woman's legs in black pants and white shoes), and "BAGS" (a pink handbag). In the bottom left corner of the page, there is a sidebar with a list of links: "► Shipping & return", "► Privacy notice", "► Conditions of use", "► About us", and "► Contact us". The word "LATOYA" is also repeated in a large, white, lowercase font in the bottom right corner of the page.

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- Privacy notice
- Conditions of use
- About us
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