Version 4

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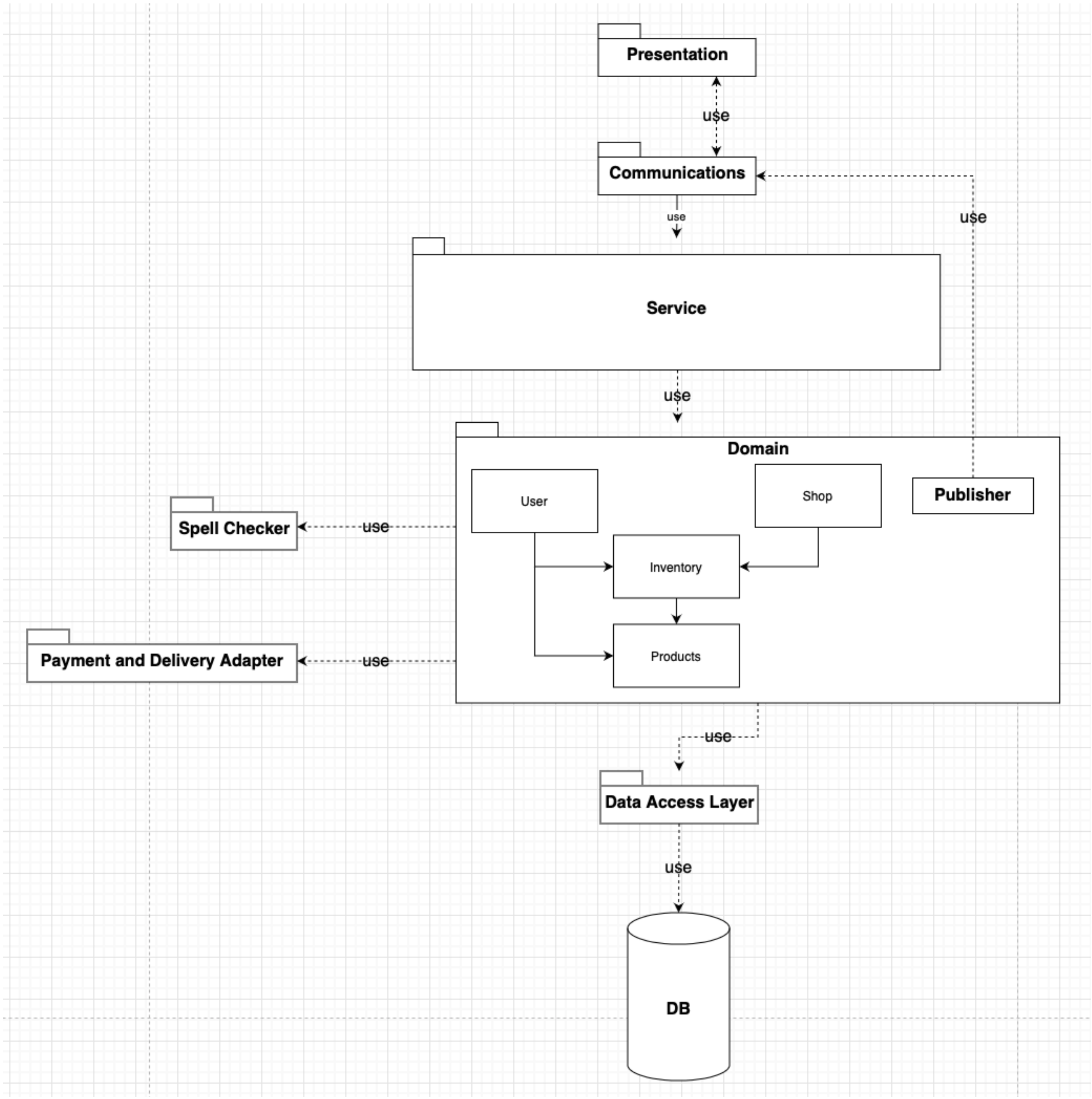
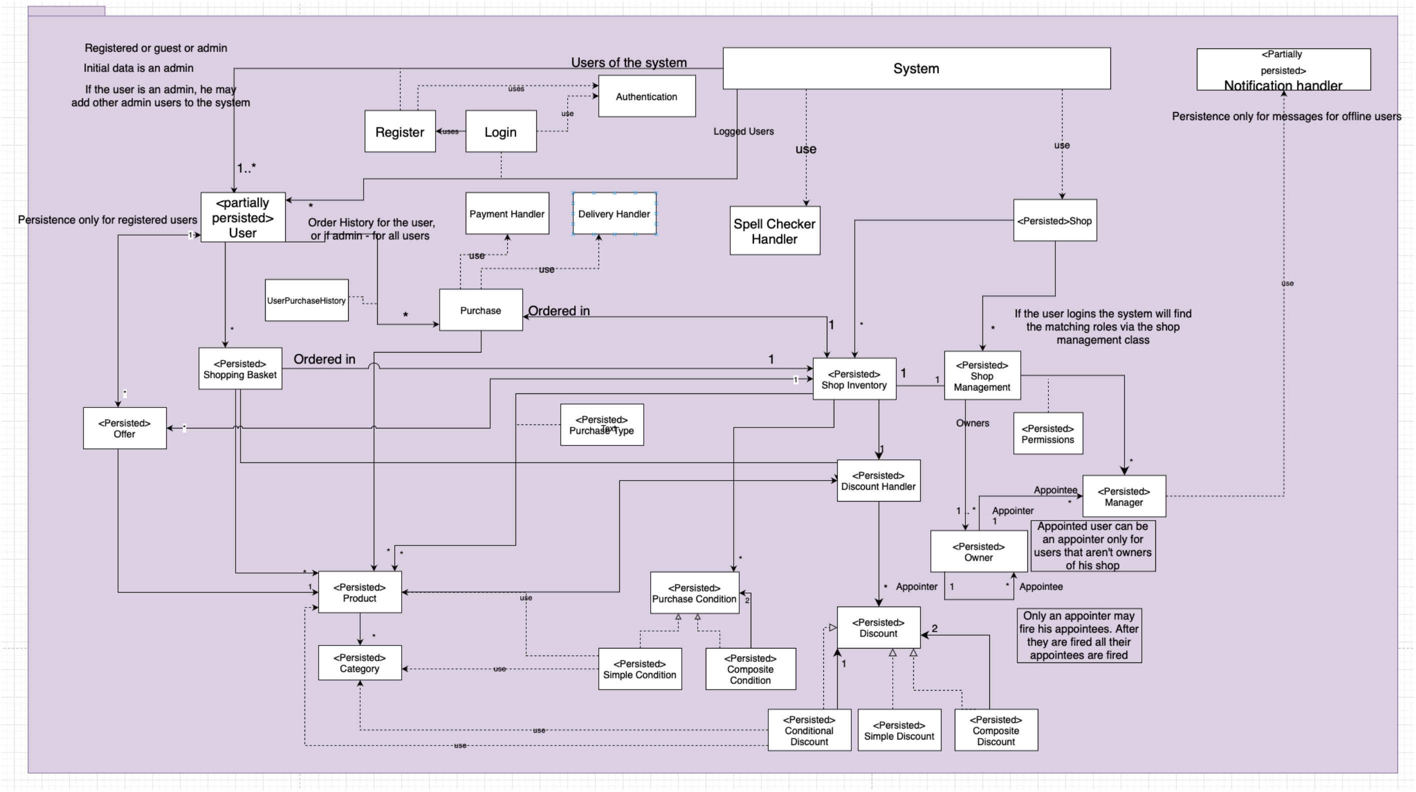
Architecture diagram

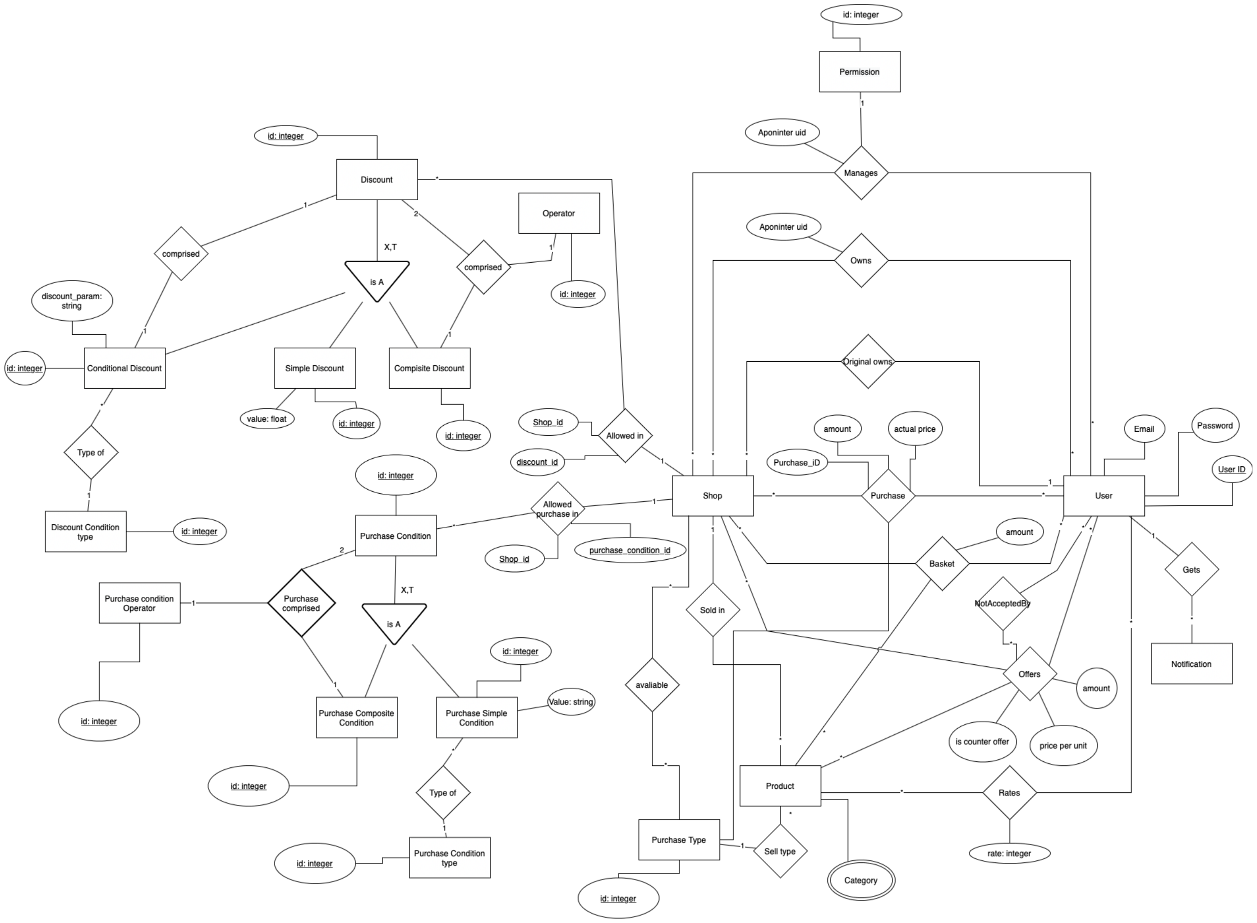


White Class Diagram


Registered or guest or admin
Initial data is an admin
If the user is an admin, he may add other admin users to the system
Users of the system
System
<Partially persisted> Notification handler
Persistence only for messages for offline users
uses
Authentication
use
Register
uses
Login
Logged Users
use
use
1..*
<partially persisted> User
*
Persistence only for registered users
1
Order History for the user, or if admin - for all users
Payment Handler
Delivery Handler
Spell Checker Handler
<Persisted>Shop
use
use
use
UserPurchaseHistory
*
Purchase
Ordered in
1
*
If the user logins the system will find the matching roles via the shop management class
*
*
<Persisted> Shopping Basket
Ordered in
1
1
<Persisted> Shop Inventory
1
1
<Persisted> Shop Management
*
<Persisted> Offer
*
<Persisted> Purchase Type
Text
Owners
<Persisted> Permissions
1
<Persisted> Discount Handler
*
Appointee
<Persisted> Manager
*
1..*
Appointer
1
Appointed user can be an appointer only for users that aren't owners of his shop
<Persisted> Owner
*
*
*
*
1
<Persisted> Product
use
*
<Persisted> Purchase Condition
2
* Appointer
1
*
Appointee
<Persisted> Discount
2
Only an appointer may fire his appointees. After they are fired all their appointees are fired
*
<Persisted> Category
use
<Persisted> Simple Condition
<Persisted> Composite Condition
1
use
use
<Persisted> Conditional Discount
<Persisted> Simple Discount
<Persisted> Composite Discount

Click here for a full-sized version

ERD



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Restrictions

טיפול בדרישות רמת שירות:

פרטיות:

1. המערכת שרצה על מכשיר הלקוח תצפין את הסיסמא שמוזנת ע"י המשתמש באמצעות פונקציית Hash חד כיוונית, אשר המחלקה Password Handler תעשה שימוש כדי לבדוק את התאמתה אל המשתמש. כנגזרת לכך, הסיסמאות יישמרו כתוצאות פונקציית ה-Hash ולא כסיסמא.

חיוות משתמש:

b.3. המערכת תציג שגיאה כאשר היא נכשלת בביצוע המטלה המבוקשת. המערכת תכיל עמוד ובו פירוט אודות הפונקציות במערכת ואופן השימוש בהן, בהתאם להרשאות המשתמש. בתפריט הפונקציות תהיה דוגמא קצרה המפרטת כיצד ניתן להשתמש בכל פונקציה.

טיפול באילוצי נכונות:

1. כל משתמש ייוצג ע"י כתובת דוא"ל ייחודית אשר נכונותה תיבדק בעת ההרשמה.
2. מנהל המערכת הראשון במערכת יקודד בעת בניית המערכת. כל מנהל מערכת אחר יוכל להירשם כמנוי.
3. המערכת מאפשרת מינוי בעל חנות ו/או מנהל חנות רק מתוך מאגר המשתמשים הקיים במערכת.
4. דרישה זו מתקיים ע"פ יחס הריבוי בין המחלקה Shop Management לבין Owner.
5.
   a. סוגי הקניה מאושרים עבור כל מוצר נשמרים במחלקת אסוציאציה בשם Purchase Type, אשר מגדירה את אופן הקנייה המאושר עבור כל מוצר. בנוסף, עבור כל מוצר, מחלקת ה-Discount Policies מגדירה את ההנחה שמוגדרת לו. לדוגמא, הנחות על פריט מסויים יוגדרו כ"הנחה עבור פריטים בעלי מס' מוצר השווה ל...".
   b. החנות (Shop Warehouse) מחזיקה במחלקה Discount Policies אשר מקבלת פרטים אודות הקנייה, ומחזירה את ההנחה הרלוונטית עבורה, במידה וקיימת. סוגי הרכישה נשמרים במחלקה Purchase Policy Handler, אשר מתפקדת כ"שומר" (Guard) עבור רכישות לפי תנאי סף מוגדרים מראש.
6. עגלת הקניות של המשתמש מיוצגת כאוסף כל סלי הקניות של המשתמש עבור כלל החנויות במערכת. יש לציין כי סוג הקנייה "קנייה מיידית" (Regular) הינו סוג הקנייה היחיד שנשמר ב-Shopping Basket.
7. שכבת ה-Domain תמנע הפעלה של פעולות הקשורות לעגלת הקניות של המשתמש אם המשתמש המבצע אינו המשתמש אליו עגלת הקניות שייכת.
8.
   a. דרישה זו תיאכף ע"י תרחיש קבלה - עבור כל רכישה, סכום החיוב הינו שווה לסכום המוצרים בסלי הקניות שנרכשו, בהתאם למדיניות ההנחות והרכישה.
   b. מערכת ה-Payment Handler תתריע למערכת אודות הצלחת חיוב ו/או כישלון, ובכך המערכת תעודכן בנוגע להצלחת תהליך הרכישה.
   c. מערכת התשלומים החיצונית תעביר את התשלום אל המוכר אם ורק אם התשלום התבצע בהצלחה.
   d. המערכת לא תאפשר הוספת הרשאה הנוגדת את כללי ההרשאות באמצעות המחלקה Permissions.
9.
   a. דרישה זו נאכפת באמצעות המחלקה Payment Handler.
   b. דרישה זו נאכפת באמצעות המחלקה Delivery Handler.

Stress tests

<u>עבור התרחיש הראשון, ביצענו את הפעולות הבאות:</u>

- התחברות כאורח
- הרשמה
- התחברות כמשתמש רשום
- הוספת מוצר לסל הקניות של המוצר

דרך JMETER הבאנו ל 100 תרדים לבצע את הפעולה הנ"ל, את דו"ח ניתן למצוא בקובץ המתאים.
התרחיש נועד לבדוק האם המערכת יכולה להתמודד עם המון פעולות שקורות במקביל על ידי כמות גדולה של משתמשים.
בחרנו לסמלץ תרחיש שגרתי במערכת. אנו ביצענו הרשמה,התחברות, והוספה לסל.
100 בקשות התחברות כאורח, 100 הרשמה, 100 התחברות, 100 הוספה לסל על ידי 100 משתמשים שונים.
תוצאות:
כמות הבקשות שזמן התגובה שלהם היה יותר משניה 1: 22
כמות הבקשות סה"כ 400
ממוצע הצלחה: 95%

<u>עבור התרחיש השני:</u>

- התחברות כאורח
- הרשמה
- התחברות
- הוספת 100 חנויות.
- הוספת 100 מוצרים לכל חנות
- רכישה של 100 מוצרים

דרך JMETER הבאנו ל 1000 תרדים לבצע את הפעולה הנ"ל, את דו"ח ניתן למצוא בקובץ המתאים.
התרחיש נועד לבדוק האם המערכת יכולה להתמודד עם המון פעולות שקורות במקביל על ידי כמות גדולה של משתמשים, להעמיס על בקשות ל DB ויצירת עומס ותעבורה גדולה במערכת.
הטסט גם מוסיף חנויות, גם מוסיף מוצרים וגם מסמלץ קניות שמתעסקות עם מערכות חיצוניות.
ניתן לראות שכל בקשות ההתחברות התרחשו בהצלחה, התרחיש נועד לבדוק שהמערכת יכולה להתמודד עם כמות מחוברים גדולה במקביל ללא הפרעה.
שהסרבר לא קרס תחת עומס הבקשות ושה DB לא קרס.
תוצאות:
הסרבר לא קרס
הטסט לקח שעה ארבעים, התמונה מצורפת בקובץ המתאים

<u>עבור התרחיש השלישי, ביצענו את הפעולות הבאות:</u>

- התחברות כאורח

דרך ה JMETER הבאנו ל 1000 תרדים לבצע את פעולת התחברות כאורח חדש במערכת (והשארות במערכת), את הדו"ח ניתן למצוא בקובץ המתאים.
ניתן לראות שכל בקשות ההתחברות התרחשו בהצלחה, התרחיש נועד לבדוק שהמערכת יכולה להתמודד עם כמות מחוברים גדולה במקביל ללא הפרעה.

Glossary

Term	Category	Definition
Active discount	Store data	A discount whose end time is later than the current time.
Add product permissions	Permission	The ability to add a product to a store
Admin	User type	A user who is responsible for the management of the system, and can perform inter-store actions.
Admin menu	Menu	The menu in which the admin performs administrative operations in the system.
Auction	Purchase type	A purchase type in which customers place a bid on the item. When the auction end time has passed, the customer with the highest bid is charged and is granted the product.
Auction end time	Auction term	The time at which an auction ends.
Bid	Auction term	A monetary value placed by a customer on an item which is sold in an auction. At the time of placing, it has the highest value out of all the bids, and has to be larger than the minimum bid price which was set by the store.
Category	Item data	A data field which indicates the type of product
Client session	System	The time interval when client interacts with the system
Composite discount	Discount type	A discount that is a composition of two other discounts. The composition types are Logic composition discounts and Numeric composition discounts
Conditioned discount	Discount type	A discount which is applied if the a set of conditions is met. Conditions are checked against a shop, category or specific product.
Current winning bid	Auction term	The bid with the highest value.
Customer	User type	A guest or a registered user
Default permissions	Store data	Store management information permission
Description	Item data	A text indicating the nature of the product.
Discount	Store data	A reduction in the price of the product. Applied according to the store's discount policies. It has a discount value and an end time. It is only applied if the discount is an active discount.
Discount policy	Policies	The limitations on the use of discount types at the store.
Discount type	Store data	The method used to reduce an item's price by the customer. Includes visible, conditioned and hidden discounts.

Edit or remove product permissions	Permission	The ability to edit or remove products from the store
Filter	Search data	A condition which items have to match in order to be displayed
Goal price	Lottery term	The value required to reach by the total submissions for a lottery item. After reaching the goal price, the lottery is performed.
Guest	User type	A non registered user
Hidden discount	Discount type	A discount which is applied if the customer applies coupon which a manager/owner set for the discount.
Item search result menu	Menu	A menu which is displayed to customers after they perform a search. It displays all and only the items which match the search term.
Leading bidder	Auction term	The customer who placed the current highest value winning bid.
Logic composition discounts	Discount type	A discount which can apply two discounts via the following operators: XOR, AND, OR
Login	System	The transition of a guest to an existing registered user by authenticating using user email and password
Login page	Menu	The menu in which a guest attempts to login
Logout	System	The transition of a customer from a registered user to a guest.
Lottery end time	Lottery term	The time at which a lottery ends.
Lottery participants	Lottery term	All the users who paid to participate in a lottery purchase of an item.
Lottery purchase	Purchase type	A purchase type in which customers place a submission price in order to purchase the item. Upon submission, the customer is charged the submission price. When the total submissions reaches the goal price, the lottery ends and the product is granted to a random customer, each having a chance equal to their submission price percentage of the goal price.
Manager	User type	A user who was promoted by an owner to manage a store. A manager has a set of permissions, according to which he is allowed to act.
Minimum bid price	Auction term	The minimum value which has to be surpassed by all bids on the item.
Numeric composition discounts	Discount type	A discount which can apple two discounts via the following operators: MAX, SUM. SUM cannot bring the discount to make the shop pay the customer for it.
Offer purchase	Purchase type	A purchase type in which customers place a monetary offer for the item. The offer is then presented to the store's management, who may accept or decline it. An accepted offer is an offer which was accepted by all the shop’s management. This results in the customer being charged for the value of the offer, and grants him the product.
Original owner	User type	The customer who first opened the store

Password	Data field	A 4 characters or longer string of text
Payment system	System	The external system which charges a customer for its basket and transfers the revenue to the shop owner
Policity modification permissions	Permission	The ability to add or remove purchase and discount policies
Product	Store data	The data fields representing a product in the system. Includes a product name, price, description, categories
Product name	Item data	The name given to the product by the owner/manager
Product page	Menu	A menu which displays information regarding the product. The information includes all the information the product holds (see *product*), as well as the its purchase type and applicable discount.
Promoter	Store data	For a promotee, it is the owner who promoted him. Only the original owner doesn't have a promoter.
Purchase	System	The acquisition of a basket's items by the user
Purchase condition	Policies	A condition comprised of other purchase conditions or a limitation on a purchase. If it is comprised of multiple limitations, they are composed by And and Xor between them.
Purchase history	User items	A collection of all the user's purchased baskets and purchased items. It hold the information true to the time of purchase.
Purchase menu	Menu	The menu which is displayed to customers after opening the system
Purchase policy	Policies	The limitations on the use of purchase policies at the store. These limitations are called purchase conditions. If one of them is not met, the user may not purchase the item.
Purchase type	Item data	The method used to purchase an item. It includes auctions, lotteries, regular and offers.
Registered user	User type	A user who performed a registration and whose details are saved in the system
Registration page	Menu	The page in which a guest attempts to become a registered user
Regular purchase	Purchase type	A purchase in which the customer purchases and is charged immediately. The purchase is complete after a successful charge.
Role	User type	Any of the user types
Role selection menu	Menu	The menu in which a registered user who performed a successful login chooses his role according to the roles assigned to him
Search keyword	Search data	A word to be matched with the following fields: product name, description, category, creation date, store name
Shopping basket	User items	A collection of all of the user's saved items from a selected store. This represents the collection of items the user intends to purchase.
Shopping cart	User items	A collection of all of the user's shopping baskets

Shopping cart menu	Menu	The menu in which the system displays all the baskets in the user's shopping cart. For each basket, it displays the products, their amount and their price after discount.
Store creation menu	Menu	The menu in which a registered user creates a new store. Upon creation, the user is set as the original owner
Store information	Store data	The data fields representing the store's information. This includes the store's name, original owner, categories of items sold by the store, and store ranking
Store management data	Store data	The information regarding the store's managers, owners and their respective permissions
Store management information permission	Permission	The ability to view management information regarding the store.
Store management menu	Menu	The menu in which store owners and managers perform actions and view information regarding the store.
Store purchase history permissions	Permission	The ability to view information regarding all the purchases made by users at the store.
Store ranking	Store data	The average rank given to the store by customers who purchased items from it.
Store Warehouse	Store data	The products available for purchase at the respective store.
Submission price	Lottery term	The value charged from the user for the chance to receive the product.
Total submissions	Lottery term	The sum of all the submission prices placed on a lottery item.
User	User type	A Customer or a manager or a shop owner or an admin
User email	Data field	A text matching a legal email address, and is unique in the system
Visible discount	Discount type	A discount which is immediately applied to applicable items.

User Interface Specification

SLO = מטרה
SLI = מדד

מטרה:

ממשק צבעוני וברור

מדד:

המערכת תעשה שימוש בצבעים שונים כדי להדגיש רכיבים נפרדים. לדוגמא, עמודות וכפתורים יופרדו באמצעות קווי הפרדה בצבע בולט. צבעי המערכת יהיה אחידים, תוך שימוש בפלטת צבעים שלא מכילה יותר מחמישה צבעים.

מטרה:

טקסט קריא

מדד:

המערכת תעשה שימוש בגופנים שגודלם לא קטן מ-12. פונט זה נמצא כאופטימלי לאחר מבחן סובייקטיבי של מספר נבדקים.

מטרה:

חלוקת מסך נוחה

מדד:

כל דף יחולק בצורה שמבליטה את הרכיבים, אין חפיפה בין שני רכיבים, ומיקומם מוגדר מראש על המסך, כאשר ישנו רכיב תפריט עקבי שנמצא בכל הדפים המאפשר מעבר נוח למשתמש.

מטרה:

מסך יעודיים לפונקציונליות מרכזיות

מדד:

על מנת לא להעמיס מידע על דף יחיד, יהיו דפים שמייצגים באופן ברור פונקציונליות יעודית של המערכת (מסך הרשמה, מסך התחברות, מסך תשלום) על מנת לאפשר למשתמש נוחות בעת מילוי פרטים שהם קרייטים.

מטרה:

כפתורים ברורים

מדד:

כפתורים ייוצגו בצורה שונה מסביבתם (צבע המסגרת או צבע תוכנם יהיה שונה מסביבתם) כך שיוקל למשתמש להבחין במיקום הכפתור והבחנתו מסביבתו. תוכן הכפתורים יהיה מיוצג ע"י סמל מקובל בתעשייה או ע"י טקסט קצר שמסביר את מטרת הכפרות.

מטרה:
שדות מילוי שמטרתם מובנת
מדד:
בתוך כל שדה מילוי יהיה הסבר אודות התוכן אותו המשתמש מתבקש למלא, או דוגמא לתוכן תקין.

מטרה:
צנזור תוכן רגיש
מדד:
שדות המכילים בתוכם תוכן רגיש, כגון סיסמאות, אמצעי תשלום וכו' יוחלפו בתוכן מצונזר על מנת לאפשר למשתמש פרטיות בעת השימוש.

מטרה:
התראות בולטות ולא מפריעות למשתמש
מדד:
אוסף ההתראות שיש למשתמש תמיד יהיו נגישות דרך כפתור יעודי ברכיב הניווט הראשי, וכל התראה חדשה תיוצג באמצעות אינדקטור בולט על רכיב הניווט הראשי.

מטרה:
המערכת תגיב לפעולות משתמש
מדד:
המערכת תציג הודעות שגיאה או הודעות הצלחה מתאימות לפעולות משתמש, למשל הצגת הודעה מתאימה להזדהות שנכשלה או הצגת הודעה של הצלחה בעת תשלום.

מטרה:
הרכיבים יגיבו לפעולות משתמש
מדד:
רכיבים אינטראקטיביים של המערכת יציגו פעולה בולטת כגון הגדלה, שינוי צבע וכו כאשר המשתמש מבצע איתם אינטרקציה. אינטרקציה זו באה לידי ביטוי בצורת הזזת סמן העכבר עליהם, או לחיצה עליהם.

מטרה:
כפתורים לא חופפים
מדד:
הכפתורים יסודרו בצורה שאינה מאפשרת חפיפה ויש הפרדה ברורה בין כל כפתור לכפתור עם רווח וגודל מתאים ואחיד.

מטרה:
מסכים יעודיים לפעולות
מדד:

מסכים יעודיים שנועדו לפעולות כגון הרשמה,רישום ללא תוכן שאינו קשור למסך, מאפשר למשתמש להתמקד בפעולה שהוא עושה שלרוב יותר רגישה, כגון הרשמה.

מטרה:
אפקטים ידידותיים למשתמש
מדד:
האפקטים יהיו פשוטים וייועדו רק על מנת לשפר את חווית המשתמש, לא יהיו אפקטים שייאמצו את המשתמש להתרכז בנעשה או יהיו בלתי צפויים.

מטרה:
תפריטים יעודיים
מדד:
תפריט בחירת תפקיד יאפשר למשתמש להבין באיזה נעליים הוא כרגע "מחובר" למערכת ויאפשרו מעבר נוח במקום יחיד לפונקציונליות שקיימת.

מטרה:
תפריט ניווט ראשי
מדד:
יאפשר גישה נוחה למשתמש לפעולות שמתאפשרות עם ההרשאות שלו, מעבר נוח מעמוד לעמוד והאופציה לחזור אחורה.

מטרה:
סגירה ופתיחה של חלונות
מדד:
חלונות שנפתחים בדרישה של המשתמש, לדוגמא כפתור תשלום יפתח תפריט מתאים. למשתמש תמיד תהיה אפשרות לסגור תפריטים אלו באמצעות כפתור ייעדו,תפריטים שהם POPUP.

Use cases

** Note - all use cases also refer to the System class.*

Requirement number:	Requirement 2.1
Use case:	New user visit
Relevant Classes:	User
Actor:	A customer
Precondition:	No user is logged in the current session
Parameter:	None
Main Scenario:	1. The system presents the customer the purchase menu and an option to enter the login or register menu. 2.1(Main scenario) If the customer doesn’t login, and chooses to continue to the purchase menu the system treats him as a guest. 2.2(Alternative scenario) Else, it chooses to enter the login/register menu.
Post Conditions:	The system presents the customer the purchase menu and an option to enter the login or register menu
Alternative Scenarios:	The server of the system is not available, then the system will present a message for the user that the service is unavailable

Relevant Classes:	Requirement 2.2
case:	Program exit
Relevant Classes:	None
Actor:	A customer
Precondition:	None
Parameter:	None
Action:	1. The system will present the customer with an option to exit the program at the purchase menu or the admin menu. 2. If the customer chooses to exit, its client session will terminate.

Post Condition: The system will presents the customer with an option to exit the program at the purchase menu or the admin menu

Requirement number:	Requirement 2.3
Use case:	Customer registration
Relevant Classes:	User, Registration, Password handler
Actor:	A customer
Precondition:	The customer is a guest and he is on the registration page
Parameter:	user email, password
Action:	1. The system asks the user to enter an email and a password 2. The user types an email and a password. 3.1(Main scenario) If the user email doesn’t belong to an existing registered user. Then, a new account for the user will be created, whose email and password will match the parameters. 3.2.1(Alternative scenario) Else, the system will present an error which indicates that the email is taken. 3.2.2 Repeat step 1. 4. The system redirected the newly registered user to the purchase menu.
Post Condition:	A new registered user will be created in the system. The system redirected the newly registered user to the purchase menu

Requirement number:	Requirement 2.4
Use case:	User, Login, Password handler
Relevant Classes:	2.4
Actor:	A guest
Precondition:	A guest in the login page.
Parameter:	user email, password
Action:	1. The system asks the user to enter an email and a password. 2. The user types an email and a password. 3.1.1(Main scenario) If the email belongs to an existing account, and the typed password matches that account’s password, the session will belong to that user. 3.1.2 The user is redirected to the role selection menu. 3.2(Alternative scenario) Else, the system will present an error which

indicates the credentials are wrong.

Post Condition: The system will treat the user as a logged user and not as a guest

Requirement number: Requirement 2.5

Use case: Shop warehouse browsing

Relevant Classes: Shop inventory, Product

Actor: A customer

Precondition: The customer is in the purchase menu

Parameter: Shop name (optional)

Action:
1. The purchase menu will contain an option to view all the shops, or to search a shop by name.
2. If the customer chooses a shop from the shop list, jump to 4.
3. The customer enters a shop name
3.1 The system searches and presents to the customer the list of shops that matches that shop name
3.2 The customer chooses a shop from the search result
4. The system will present the user with the following:
4.1 Product search in the shop's warehouse.
4.2 Shop information.
4.3 Products list from the shop's warehouse.

Post Condition: For the chosen shop, The system will present the user with the following:
1. Product search in the shop's warehouse.
2. Shop information.
3. Products list from the shop's warehouse

Requirement number: Requirement 2.6

Use case: Item search

Relevant Classes: Shop inventory, Product, Spell checker handler

Actor: A customer

Precondition: The customer is in the purchase menu

Parameter: One of the following: Item name, category, search keyword.

Action:
1. The purchase menu will contain an option to search products by one of the following search terms:
Item name
category
keyword
2. The user enters a search term and is transitioned to an item search result menu, which contains all the items which fit the search term.
3. The system will present the user with optional filters.
3.1 The user chooses filters
3.2 The system presents to the user the list of products that match the chosen filters.
4.1 The user may choose a product.
4.1.1 The system presents the user the product page.
4.2 The user exits from the item search result menu.

Post Condition: For chosen item name or category or keyword, the system presents the user the product page that best matches the search and the chosen filters.

Requirement number: Requirement 2.7

Use case: Add item to basket

Relevant Classes: User, Product, Shopping Basket

Actor: A customer

Precondition: The customer is in the product page of an item which is sold as a regular purchase.

Parameter: Product to add (the current product the customer watches), amount of that product to add.

Action:
1. The system will present the user with an option to save the item to the user's basket in the shop where the product is sold.
2.1(Main scenario) If the user chooses to add, the system will ask the user to choose an amount
2.1.1 if the shop to which the item belongs to has an equal or larger amount of the item in the inventory, the item will be added to the user's basket in the shop and will be presented with an appropriate message.
2.2(Alternative scenario) Else the system will present the user an error which indicates that the shop doesn't have enough of the item in the inventory.

Post Condition: The item and it's quantity are added successfully to the user's basket

Requirement number: Requirement 2.8

Use case: Shopping cart information and edit

Relevant Classes: User, Shopping Basket

Actor: A customer

Precondition: A customer is in the purchase menu

Parameter: None

Action:

1. The purchase menu will contain an option to navigate to the shopping cart menu.
2. When the user navigates to that menu, they will be presented with their shopping cart, divided by baskets.
3. The user chooses one of his baskets.
4. The system presents the contents of the chosen basket to the customer.

5 . For each item presented, the customer may choose to modify the amount of the product, or to remove the item from the basket

5.1(Main scenario) If the user chose to remove the item, the system will remove the item from the basket and the user will not see it in the basket.

5.2 If the user edits the amount:

5.2.1 If the user chooses an amount larger than the current shop's inventory amount of the product, the system will produce an appropriate response and change the amount to the original value.

5.2.2(Alternative scenario) Else the amount will be updated according to the customer input.

Post Condition: For the chosen basket, the system will remember all changes made to that basket.

Requirement number: Requirement 2.9.1

Use case: Product purchase of regular purchase items

Relevant Product, User, Shop Inventory, Purchase policy

Classes:

Actor: A customer

Precondition: A customer in the shopping cart menu.

Parameter: None

Action:

1. If the cart doesn’t have any shopping baskets the system presents to the customer appropriate message
2. For each basket in the cart, the system will present the user an option to purchase all the items in the basket.
3. The user chooses a basket.
4. The system will check that the basket and the user meet the purchase policy. They don’t, then the system will show an appropriate message and the use-case terminates.

5.1(Main scenario) If all the amounts of items in the basket are below or equal to the shop’s inventory for each item, the system will reduce the amount for each, and the user will move to the external payment system.
5.2(Alternative scenario) Else, the customer will be presented with a message which indicates which item is below the shop’s inventory amount, and will transition to use case no. 8.
6.1. If the payment system indicates that a successful purchase was made, the system will save the current basket in the user’s purchase history and will remove it from the user’s cart.
6.2 Else, the user will be presented with an appropriate error message and the inventory amount for each item will revert back to its original value.

Post Conditions: The user is charged for the sum of products’ price, the shop receives that sum of money. The system will save the current basket in the user’s purchase history and will remove it from the user’s cart

Requirement number: Requirement 2.9.2

Use case: Product bid of items sold in auctions

Relevant Classes: Product, User, Shop Inventory, Purchase policy

Actor: A registered customer

Precondition: A customer in the product page of an auction item whose auction end time is later than the current time. The purchase meets the shop’s purchase policy.

Parameter: Bid price

Action:

1. The product page will display an option to bid an amount on the item
2.1 If the user enters an amount and the amount is not higher than the highest current bid.
2.2 The system checks if the amount is larger than the minimum bid price and the current winning bid, if not the system presents an appropriate error message to the user. Go to step 1 again.
2.3 The system will check if he bid before on the item. If he did, the system will use his previous payment method, and if he didn’t he will be asked to enter them.
2.4 The user will become the leading bidder and his offer will become the current winning bid.
2.4.1 The system will notify the last leading bidder that his bid was outbid.
2.5 If the user is not the leading bidder (caused by parallel bids) then display an appropriate message and move to step 1.
2.6 Move to use case no. 11

Post conditions: If the bid price is higher than the current leading bid price, then the system will save this bid as a leading bid and the user as a leading bidder.

Requirement number: Requirement 2.9.3

Use case: Product purchase of items sold in auctions

Relevant Classes: Product, User, Shop Inventory, Purchase policy, Payment handler, Delivery handler

Actor: A registered customer

Precondition: The current time is equal or larger than the auction end time. The purchase meets the shop’s purchase policy.

Parameter: Product , payment information.

Action:
1. The system will charge the payment method of the leading bidder.
2. Notify the customer and add the purchase to the user’s purchase history.

Post Condition: The system will charge the winner user for his highest bid amount, the shop will receive that amount of money. The system will save this item in the user’s purchase history.

Requirement number: Requirement 2.9.4

Use case: Product offer purchase

Relevant Classes: Product, User, Shop Inventory, Purchase policy, Payment handler, Delivery handler

Actor: A registered customer

Precondition: The user is in the product page of a product sold in a purchase offer. The purchase meets the shop’s purchase policy.

Parameter: Product

Action:

1. The system will display an option to send an offer to purchase the item.
2. If the user attempts to offer, he will be asked to enter an amount and price per unit.
3. All the managers at the shop will receive a notification regarding the offer. It will state the item, and the offer amount.

4.1 If all the manager accepts the offer, the user’s payment method will be charged.
4.1.1 The user will receive a notification and the purchase will be saved in his purchase history.
4.2 If the manager declines the offer the user will receive a denial notification.
4.3 If the manager wants to suggest a counter offer, all the management will have to reaccept it. The user will then receive a notification with the product name and the requested counter offer price.
4.3.1(MAin scenario) If the user accepts the counter offer he will be charged with his payment info and the item will be added to his purchase history.
4.3.2(Alternative scenario) Else the manager will be notified that his counter offer was rejected by the user.

Post Condition: If the offer or counter offer was accepted, then the system will charge the user for the item’s price. Also, the shop will receive this amount of money. And the system will save this item in the users purchase history.

Requirement number: Requirement 2.9.5

Use case: Product lottery purchase

Relevant Classes: Product, User, Shop Inventory, Purchase policy, Payment handler

Actor: A registered customer

Precondition: The user is in the product page of a product sold in a lottery, which hadn't reached its goal price. The purchase meets the shop’s purchase policy.

Parameter: Submission price

Action:
1. The system will display an option to pay a submission price for an item.
2.1(Main scenario) If the user enters a submission price which matches [submission price <= goal price - total submissions], then he will be asked to enter his payment method and will be charged accordingly , and the total submission will accumulate his submission.
2.1.1 Jump to use case 14
2.2(Atlernative scenario) Else, the system will display an appropriate message that the submission price is invalid.

Post Condition: The system will remember how much the user invested in the lottery.

Requirement number: Requirement 2.9.6

Use case: Lottery winning

Relevant Classes: Product, User, Shop Inventory, Purchase policy, Payment handler, Delivery handler

Actor: A registered customer

Precondition: A product sold in a lottery reaches its goal price or the lottery end time has elapsed. The purchase meets the shop’s purchase policy.

Parameter: None

Action: 1.(Main scenario) If the lottery end time is reached without achieving the desired goal price.
1.1 The system will notify all the lottery participants that the lottery did not reach its goal within the end time limit.
2.(Alternative scenario) Else The system will choose randomly a winner. The winner will be picked with a chance equal to the percentage of the goal price he paid for.
3. All the lottery participants will receive a notification regarding the lottery with a notification which indicates whether they won the lottery or not.
4. If the user won the lottery the product will be put in his purchase history.

Requirement number: Requirement 2.9.7

Use case: Price calculation

Relevant Classes: Product, User, Shop Inventory, Purchase policy, Discount policy, Discount type

Actor: A registered customer

Precondition: The customer is in a product menu of a product which has a discount

Post conditions: The system shows the updated price with the relevant discount of the product

Parameter: None

Action: 1. If the product has a valid discount for the product and the shop’s discount policy allows the discount to be applied to the user, the product and the amount purchased:
A) If the discount is a hidden discount, the system will show the product’s original price, and will show the price after discount if the user enters a matching coupon. If the user enters a coupon which doesn’t match the discount’s coupon, the system will show an appropriate message and will not apply the discount.
B) If the discount is visible, the system will show the product’s price as the price after the discount.
C) If the discount is conditioned, the discount will be applied iff the provided condition is met and the system will show the product’s price as the price after discount.

Requirement number:	Requirement 3.1
Use case:	Logout
Relevant Classes:	User
Actor:	A customer
Precondition:	A logged user in the purchase menu.
Post Conditions:	The user has changed to guest
Parameter:	None
Action:	1. The system will present an option to logout from the purchase menu. 2. If the customer chooses to logout he will be redirected to use-case 1.

Requirement number:	Requirement 3.2
Use case:	Shop opening
Relevant Classes:	User, Shop, Shop inventory, Shop management, Owner, Purchase policy, Discount policy
Actor:	A customer
Precondition:	A logged user in the purchase menu.
Post conditions:	The new shop has been added to the system
Parameter:	shop name, discount policy, purchase policy, bank account, payment information.
Action:	1. The system will present an option to open a new shop. 2. If the user chooses to open a new shop, the system will ask the customer to choose: Shop name. Discount policies.

Purchase policies.
Bank account.
Payment information.

4. The system will assign the customer as the shop original owner.
5. The system will save the new shop.
6. The system will redirect the customer to the shop management menu.

Requirement number:	Requirement 3.7
Use case:	Purchase history
Relevant Classes:	User, Order, Product
Actor:	A customer
Precondition:	A logged user in the shopping cart menu.
Post conditions:	The system displays the purchase history of the user
Parameter:	None
Action:	1. The system will present an option to view the customer's purchase history. 2. If the customer chooses to view his history the system will display the purchase history.

Requirement number:	Requirement 4.1.1
Use case:	Add a product to a shop.
Relevant Classes:	Shop, Shop management, Permissions, Manager, Owner, Product, Category, Discount type, Purchase type
Actor:	A manager/owner.
Precondition:	An owner or a manager who has permissions to add products.
Post conditions:	The given product has been added to the shop

Parameter: Product name, purchase type, amount, price, category, description, Shop id

Action:

1. The system will present an option to add a new item to the shop.
2. If the option to add an item is chosen, the actor will need to provide the following parameters:

Product name (not empty)
Purchase type.
Amount (more than 0).
Price (more than 0)
Categories
Description
Shop id

2.1(Main scenario) If the parameters are valid and the purchase type exists in the shop's purchase types and the purchase policy allows the item to be sold, by the system a new product will be added to the shop.
2.2(Alternative scenario) Else the system will display an appropriate error message, and return to step 1.

Requirement number: Requirement 4.1.2

Use case: Edit/Remove a product.

Relevant Classes: Shop, Shop management, Permissions, Manager, Owner, Product, Category, Discount type, Purchase type

Actor: A manager/owner.

Precondition: Manager with edit or remove product permissions or an owner.

Post conditions: The given product has been edited\removed from the given shop

Parameter: Shop id, product id, One of the following: amount, price, category, description.

Action:

1. The system will present an option to edit/remove an item from the shop.
2. If the option to remove an item is chosen, the actor will need to provide the product ID(not empty)

3. If the option to edit an item is chosen, the actor will need to provide the following parameters:
Product ID(not empty)
Amount(Optional)

Price(Optional)
Categories(Optional)
Description(Optional)

2.1(Main scenario) If the parameters are valid by the system the edited information will be updated. Valid information is:
Product ID exists in the system for the shop id, the product ID belongs to an item sold in a regular purchase, the amount is non-negative or the price is non-negative.
2.2(Alternative scenario) Else the system will display an appropriate error message.

Requirement number: Requirement 4.2.1

Notes: *This Use case is not complete as the shop policies are yet to be set*

Use case: Edit/add/display a shop purchase policy.

Relevant Classes: Shop Inventory, Purchase policy, Purchase type, Shop management, Owner, Manager, Permissions

Actor: A manager/owner.

Precondition: A manager with policy modification permissions or an owner. The actor is within the shop management-menu.

Post conditions: The purchase policy has added\edited\displayed by the system to the given shop

Parameter: Shop policy(Optional), shop id

Action: 1. The system will display the shop management-menu to the actor with the following options:
A) Add B) Edit C) Display.
2. A: The user will provide details of a new shop policy.
3. B: The user will provide new values to an existing shop policy.
4. C: The system will display all the shop policies to the user.

Requirement number: Requirement 4.2.2

Notes: *This Use case is not complete as the discount policies are yet to be set*

Use case: Edit/add/display a discount policy.

Relevant Classes: Shop Inventory, Discount policy, Discount type, Shop management, Owner, Manager, Permissions

Actor: A manager/owner.

Precondition: A manager with policy modification permissions or an owner. The actor is within the shop management-menu.

Post conditions: The discount policy has added\edited\displayed by the system to the given shop

Parameter: Discount policy(Optional), shop id

Action:
1. The system will display the shop management-menu menu to the actor with the following options:
A) Add B) Edit C) Display.
2. A: The user will provide details of a new discount policy.
3. B: The user will provide new values to an existing discount policy.
4. C: The system will display all the discount policies to the user.

Requirement number: Requirement 4.2.3

Use case: Remove/add/display a shop's purchase type

Relevant Classes: Shop Inventory, Purchase policy, Purchase type, Shop management, Owner, Manager, Permissions

Actor: A manager/owner.

Precondition: A manager with policy modification permissions or an owner. The actor is within the shop management-menu.

Post conditions: The purchase type has added\removed\displayed by the system to the given shop

Parameter: Purchase type, shop id

Action:
1. The system will display the option menu to the actor with the following option:
A) Add B) Remove C) Display.
2. A: The user will enter the new purchase type. The purchase type will be added to the shop's allowed purchase types.
3. B: The user will provide the purchase type he wants to remove from the shop. If the purchase type is allowed by the shop, it will become

disallowed. Any current item’s which are offered by the shop with the selected purchase type will still be sold in this method.
4. C: The system will display all the purchase type’s available in the shop.

Requirement number: Requirement 4.2.4

Use case: Remove/add/display a shop’s discount type

Relevant Classes: Shop Inventory, Discount policy, Discount type, Shop management, Owner, Manager, Permissions

Actor: A manager/owner.

Precondition: A manager with policy modification permissions or an owner. The actor is within the shop management-menu.

Post conditions: The discount has added\removed\displayed by the system to the given shop

Parameter: shop id, (all optional) - Discount type, Product Id, End time, discount amount, condition, coupon code

Action: 1. The system will display the option menu to the actor with the following option:
A) Add B) Remove C) Display.
2. A: The user will enter the new discount type and a product Id. If the product is sold in a purchase type other than regular purchase, the system will display an appropriate message and return to step 1.
2.1 If the discount type is visible, the actor will provide the discount percentage, and the end time.
2.2 If the discount type is a conditioned discount the actor will provide the discount percentage and the discount condition and the end time.
2.3 If the discount type is a hidden discount, the actor will provide the discount percentage, the coupon code and the end time.
3. B: The user will enter the product id and the discount id. The system will remove the discount from its item, if the product id exists and it contains a discount with the given discount id.
4. C: The system will display all the active discounts in the shop.

Requirement number: Requirement 4.3

Use case: Promote a registered user to ownership of shop

Relevant Classes: User, Shop, Shop management, Owner

Actor: An owner.

Precondition: The promotee is not already an owner of that shop, the owner is in the shop management menu

Post conditions: The user is the appointer ,the given user is the appointee and the owner of the shop

Parameter: Shop, User (Promotee)

Action:
1. The owner gives to the system the user id
2. The system assigns this user as an owner of that shop, and assigns the owner as the appointer of the new appointee.

Requirement number: Requirement 4.5

Use case: Promote a registered user to management the shop

Relevant Classes: User, Shop, Shop management, Owner, Permission, Manager

Actor: An owner.

Precondition: The promotee is not already an owner or a manager of that shop, the owner is in the shop management menu

Post conditions: The user is appointer ,the given user is appointee and the manager of the shop

Parameter: Shop ID, User ID (Promotee)

Action:
1. The owner gives to the system the user id
2. The system assigns this user as an manager of that shop, and assigns the owner as the appointer of the new appointee.
3. The system assigns the default permissions to the promotee.

Requirement number: Requirement 4.6

Use case: Manager permission management

Relevant Classes: Shop, Shop management, Owner, Permission, Manager

Actor: An owner.

Precondition: The owner is in the shop management menu.

Post conditions: The given user has the updated permissions

Parameter: User ID, permissions.

Action:

1. The system displays the available permission in the system.
2. The owner enters the User ID of the manager whose permissions he wants to edit and selects the permissions he wants the manager to have.
3. The system checks if the User ID belongs to a manager of the shop and the Owner is the promoter of the mentioned manager.
4.(Main scenario) The system updates the permissions in case of valid input.
5.(Alternative scenario) Else the system displays an appropriate error message.

Requirement number: Requirement 4.7

Use case: Remove the manager of a selected shop.

Relevant Classes: Shop, Shop management, Owner, Permission, Manager

Actor: An owner.

Precondition: The owner is in the shop management menu.

Post conditions: The given user is no longer a manager of the shop.

Parameter: User ID.

Action:
1. The system asks the owner to enter a user id which he wants to remove from the shop.
2. The owner enters an ID.
3.(Main scenario) If the provided User ID belongs to a manager of the current shop and the promoter of the manager is the current actor the system will remove the User ID from the shop management. In addition, The system will end any session the manager had in the system.
4.(Alternative scenario) Else the system will display an appropriate error message.

Requirement number: Requirement 4.9

Use case: Display information about the shop managers.

Relevant Classes: Shop, Shop management, Owner, Permission, Manager

Actor: A manager/owner.

Precondition: Manager with shop management information permission or an owner.
The actor is in the shop management menu.

Post conditions: The system displays all the Owners and managers of the current shop and their permissions

Parameter: None

Action:
1. The system displays the option to display shop management data.
2. The actor chooses to see the shop management data.
3. The system displays all the Owners and managers of the current shop and their permissions.

Requirement number:	Requirement 4.11
Use case:	Display the current shop order history.
Relevant Classes:	Shop, Shop Inventory, Owner, Manager, Permission, Order, Product
Actor:	An owner/Manager.
Precondition:	Manager with display shop purchase history permissions or an owner. The actor is in the shop management menu.
Post conditions:	The system displays all the past orders of the current shop
Parameter:	Shop ID.
Action:	1. The system displays the option to display shop purchase history data. 2. The actor chooses to see the shop purchase history. 3. The system displays all the past orders of the current shop.

Requirement number:	Requirement 6.4.1
Use case:	See a user’s purchase history - admin view
Relevant Classes:	User, Order, Product
Actor:	System admin
Precondition:	The admin is in the admin-menu
Post conditions:	The system displays the user purchase history
Parameter:	User id

Action:

1. The system will present the actor with an option to view a user’s purchase history.
2. The admin will enter the User id. If the id belongs to an existing user, it will display the user’s purchase history.
3. If the id doesn’t belong to an existing user, the system will display an appropriate message.

Requirement number: Requirement 6.4.2

Use case: See a shop’s purchase history - admin view

Relevant Classes: User, Order, Product, Shop Inventory, Shop

Actor: System admin

Precondition: The admin is in the admin-menu

Post conditions: The system displays the shop purchase history

Parameter: Shop ID

Action:

1. The system will present the admin with an option to view a shop’s purchase history.
2. The admin will enter the shop id. If the id belongs to an existing shop, it will display the shop’s purchase history.
3. If the id doesn’t belong to an existing shop, the system will display an appropriate message.

Acceptance tests

Acceptance test for requirement 2.1			
Scenario	Action	Data	Expected Result
Good	User starts new session with the system	None	The system presents the customer the purchase menu and an option to enter the login or register menu
Sad	the User enters an input which doesn’t match an entry in the current menu	User input	The system presents an appropriate error, reprints the menu and prompts for an input
Bad	User starts new session with the system, the server crashes	None	The system will present an appropriate message to the user and meanwhile it tries to reconnect.

Acceptance test for requirement 2.2			
Scenario	Action	Data	Expected Result
Good	The user asks to exit the program	None	whatThe program gracefully terminates the client’s session. If the user is a guest, the program will delete its data. If the user is a registered user, it will save its data
Sad	The user terminates the program ungracefully	None	If the user is a guest, the program will delete its data. If the user is a registered user, it will save its data
Bad	The system is terminated	None	The system will recover without any data loss.

Acceptance test for requirement 2.3			
Scenario	Action	Data	Expected Result

Good	The user is in the registration menu and enters an email and a password.	UserID ,Valid email, Valid password	A new user is added to the system with the provided email and password and the system is redirected to the purchase menu.
Sad	The user is in the registration menu and enters an email and a password.	UserID, Already in use email, Valid password.	The system alerts the user that the email he entered is already in use.
Bad	The user is in the registration menu and enters an empty email address and an empty password.	UserID, Empty password,Empty email	The system alerts the user of invalid parameters by a prompt and redirects him to the registration menu again.

Acceptance test for requirement 2.4

Scenario	Action	Data	Expected Result
Good	The user is in the login page and enters an email and a password.	UserID, Valid email and matching password.	The system validates the data and redirects the user to the role selection menu.
Sad	The user is in the login page and enters an email and a password.	UserID, Valid email and a non matching password of that email address.	The system prompts an error indicating that the credentials are wrong.
Bad	The user is in the login page and enters the maximum number of characters for any system input request.	UserID, Max char email, Max char password.	The system prompts an error indicating that the credentials are wrong.

Acceptance test for requirement 2.5

Scenario	Action	Data	Expected Result

Good	The user asks to view all the shops.	None	The system will display all the shops that exist in the system.
Sad	The user asks to search a specific shop by name and display the shop information.	Shop ID, None existing shop name.	The system will prompt an error message indicating that the shop which the user selected does not exist.
Bad	The user asks to search a specific shop by name and enters an empty field in the product search.	Shop ID, Valid shop name, invalid name of product.	The system will prompt an error message indicating that the user input is invalid.

Acceptance test for requirement 2.6

Scenario	Action	Data	Expected Result
Good	The user chooses to search an item by name and enters it in the search bar, then chooses to filter them by price.	Product name	The system displays all the shops that sell the requested product in the specified price.
Sad	The user chooses to search a category	Ivalid category name.	The system prompts an error indicating that the searched category doesn't exist.
Bad	The user chooses to search an item by name and filter the result by all existing filters.	Sensitive product Name (e.x : drop tables)	The system prompts an error indicating that data is invalid.

Acceptance test for requirement 2.7

Scenario	Action	Data	Expected Result
Good	The user chooses to add the selected product to its user basket, and enters an amount.	Product ID, Product Name,Amount	The system will add the desired product to the user's shop basket with its specified amount.
Sad	The user chooses to add	Product ID, Product	The system will prompt an error indicating the chosen

	the selected product to its user basket and enters an amount.	Name, amount that exceeds the amount specified in the shop inventory.	amount exceeds the amount of the shop.
Bad	The user chooses to add the selected product to its user basket and enters an amount.	Product ID, Product Name,a negative product amount.	The system will prompt an error message indicating the data provided is invalid.

Acceptance test for requirement 2.8

Scenario	Action	Data	Expected Result
Good	The user decides to view his shopping cart and chooses one of its baskets to view.	Basket name	The system displays the chosen basket information with all its products.
Sad	The user decides to view his shopping cart and chooses a basket.	Wrong basket name	The system prompts an error message indicating the data is invalid.
Bad	The user decides to view his shopping cart and chooses a basket and decides to edit one of the items in the basket, and enters an amount.	Basket name, product name, negative amount	The system will prompt an error message indicating the edit of the item contains invalid data.

Acceptance test for requirement 2.9.1

Scenario	Action	Data	Expected Result
Good	The user is shown all its baskets and chooses to buy a specific basket and pays for the basket	Basket name, correct payment info	The system will scan the products of the basket and reduce the amount from the shop warehouse, then it will redirect the user to an external payment system, after a successful payment the basket will be removed

			from the user’s shopping cart and will be in its purchase history.
Sad	The user is shown all its baskets and chooses to buy a specific basket.	Invalid basket name	The system will prompt an error message indicating that the provided data is invalid.
Bad	The user is shown all its baskets and chooses to buy a specific basket and when asked to pay for the basket he exits the current session.	Basket name, correct payment info	The system will close and revert all the changes to the amount of products in the shop’s warehouse.

Acceptance test for requirement 2.9.2

Scenario	Action	Data	Expected Result
Good	The user is registered and enters an amount to bid on the item and enters his payment info.	Product ID,Amount, Payment info	The system will ask the user to enter his payment method if it is his first bidding and change the leading bidder to user and alert the previous leading bidder that his bid was outbid.
Sad	The user is registered and enters an amount to bid on the item.	Product ID,Amount which is less than the current highest bid.	The system will prompt an error indicating the bidding amount is less than the current highest bid.
Bad	The user is registered and enters an amount to bid on the item and exits the session instead of paying.	Product ID,Amount	The system will not consider the user’s bid and maintain its previous state.

Acceptance test for requirement 2.9.3

Scenario	Action	Data	Expected Result
Good	An auction end time has elapsed	Product (Product ID), Customer Payment information	The system will notify the user for winning the auction. Also, the system will charge the customer’s Credit Card for the price of the item and will notify the user for making the charge. After that, the system will add the product to the user purchase history.

Sad	An auction end time has elapsed, but the user entered not the correct bank account details.	Product (Product ID), Customer Payment information	The system will try and fail to charge the user's Credit Card. Then it will notify the user for unsuccessful charge attempt
Bad	An auction end time has elapsed, and meanwhile the system was unavailable	Product (Product ID), Customer Payment information	The system when the system will be available, it will check if the auction time has elapsed. In such a case, it will check if the payment for the auction was charged, if not it will charge it and behave as in the “Good case”.

Acceptance test for requirement 2.9.4

Scenario	Action	Data	Expected Result
Good	The customer places an offer on a product and the manager receives the notification and accepts the offer.	Shop ID, Product ID, payment information, price.	The system notifies the manager that an offer was placed on an item, the manager views the offer and accepts. The system charges the user with its payment information, notifies the user of a successful trade and places the item in his purchase history.
Sad	The customer places an offer on a product and the manager receives the notification and declines the offer.	Shop ID, Product ID, payment information, price.	The system notifies the manager that an offer was placed on an item, the manager views the offer and declines, the user is notified of the unsuccessful trade
Bad	The customer places an offer on a product and the owner of the shop remove the product from sale	Shop ID, Product ID, payment information, price	The system notifies the customer that the product is no longer available

Acceptance test for requirement 2.9.5

Scenario	Action	Data	Expected Result
Good	The user enters the biggest and submission price for a product that is = goal price - total	Product (Product ID), Shop (Shop ID), payment info, Submission price	The system will charge the user for the submission price. The system will add the product to the purchase history. Then, it will choose randomly the winner from the lottery participants. Finally, it will notify all

	submission		participants if they won or not.
Sad	The user enters a submission price which is bigger than the goal price for the lottery.	Product (Product ID), Shop (Shop ID), payment info, Submission price	The system prompts an error indicating that the amount entered is higher than the goal price.
Bad	The user enters a submission price and his payment information and the owner of the shop removes the product.	Product (Product ID), Shop (Shop ID), payment info, Submission price	The system notifies the customer that the product is no longer available

Acceptance test for requirement 2.9.6

Scenario	Action	Data	Expected Result
Good	The goal price is reached before the end time.	User IDs, Product (Product ID)	The system notifies all the users who participated in the lottery that the goal price was reached and whether they won the lottery and adds the product to all the participants' purchase history.
Sad	None	None	None
Bad	The system is unavailable while the end time has elapsed.	User IDs, Product (Product ID)	The manager will be notified and all the participants will be refunded and notified.

Acceptance test for requirement 2.9.7

Scenario	Action	Data	Expected Result
Good	A customer views a product with a visible discount, and meets all the discount policy criteria and purchase policy criteria	Product (Product ID)	The price shown by the system will be the price after the application of the discount.
Sad	A customer views a product with a hidden discount, and enters a wrong coupon code	Product (Product ID), Coupon code	The system will show an appropriate message which suggests that the coupon doesn't exist, and will show the original price of the product
Bad	A customer views a product with a visible discount, and before making a purchase, the discount's end date arrives	Product (Product ID)	The system will show the user the original price after transitioning to a different menu or after a refresh occurs.

Acceptance test for requirement 3.1

Scenario	Action	Data	Expected Result
Good	A logged in user asks to logout (while in the purchase menu)	None	The system will log the user out, save the session's data, and present the purchase menu again.
Sad	None	None	None
Bad	A guest user asks to log out (without ever logging in)	None	The system will display a message saying in order to log out you must first log in, and display the purchase menu.

Acceptance test for requirement 3.2

Scenario	Action	Data	Expected Result
Good	A user asks to open a new shop and enters all the required fields legally.	Shop name, Discount policies, Purchase policies, Bank account, Payment information.	The system creates the shop, assigns the customer as it’s original owner and redirects the user to the shop management menu.
Sad	A user asks to open a new shop but accidentally doesn’t insert the last digit of his bank account number.	Shop name, Discount policies, Purchase policies, Illegal bank account, Payment information.	The system shows an error regarding the length of a legal bank account number and lets the user re-enter the information.
Bad	A user asks to open a new shop but enters an empty shop name.	Empty shop name, Discount policies, Purchase policies, Bank account, Payment information.	The system shows an error regarding an empty shop name and lets the user re-enter the information.

Acceptance test for requirement 3.7

Scenario	Action	Data	Expected Result
Good	A user asks to view his purchase history.	None	The system presents a list of the user’s previous purchases.
Sad	A user asks to view his purchase history but he has none.	None	The system will present a message saying the user has yet to make any purchases.
Bad	None	None	None

Acceptance test for requirement 4.1.1

Scenario	Action	Data	Expected Result
Good	A shop manager/owner adds a product to his shop.	Product name, purchase type, amount, price, category, description, Shop id	The system adds the product to the appropriate shop.

Sad	A shop manager/owner adds a product to his shop but enters a purchase type that does not exist in that shop	Product name, purchase type, amount, price, category, description, Shop id	The system presents an error regarding the shop’s available purchase types, and lets the user re enter the data.
Bad	A user tries to add a product to a shop he doesn’t have the permissions to.	Product name, purchase type, amount, price, category, description, Shop id	The system presents an error regarding the user’s permissions and reprints the menu.

Acceptance test for requirement 4.1.2			
Scenario	Action	Data	Expected Result
Good	A manager/owner asks to remove a product from his shop.	Product ID	The system removes the product from the shop and reprints the menu.
Sad	A manager/owner asks to remove a product from his shop but the product ID he provides is invalid	Product ID	the system presents an error regarding the illegal product ID and reprints the menu.
Bad	A user asks to remove a product from a shop he does not have permissions to.	Product ID	The system presents an error regarding the user’s permissions and reprints the menu.

Acceptance test for requirement 4.2.1

Scenario	Action	Data	Expected Result
Good	An owner/manager with permissions asks to add a shop purchase policy	Purchase policy	The system will add the policy to the shop and reprint the menu.
Sad	The owner or manager type incorrectly the purchase policy details	Purchase policy	The system will show appropriate message to the actor
Bad	A user asks to add a shop purchase policy from a shop he does not have permissions to.	Purchase policy	The system presents an error regarding the user’s permissions and reprints the menu.

Acceptance test for requirement 4.2.2

Scenario	Action	Data	Expected Result
Good	An owner/manager with permissions asks to add a shop discount policy	Discount policy	The system will add the policy to the shop and reprint the menu.
Sad	The owner or manager type incorrectly the discount policy details	Discount policy	The system will show appropriate message to the actor
Bad	A user asks to add a shop discount policy from a shop he does not have permissions to.	Discount policy	The system presents an error regarding the user’s permissions and reprints the menu.

Acceptance test for requirement 4.2.3

Scenario	Action	Data	Expected Result
Good	An owner/manager with permissions asks to add a shop purchase type	Purchase type	The system will add the purchase type to the shop and reprint the menu.
Sad	An owner/manager with permissions asks to add a shop purchase type but the shop already has that purchase type	Purchase type	The system presents an error saying this purchase type already exists and reprints the menu.
Bad	A user asks to add a shop purchase type from a shop he does not have permissions to.	Purchase type	The system presents an error regarding the user’s permissions and reprints the menu.

Acceptance test for requirement 4.2.4

Scenario	Action	Data	Expected Result
Good	An owner/manager with permissions asks to add a shop discount type	Discount type	The system will add the policy to the shop and reprint the menu.
Sad	The owner or manager tries to add a discount type that is not in the discount policy of the shop	Discount type	The system will show appropriate message to the actor
Bad	A user asks to add a shop discount type from a shop he does not have permissions to.	Discount type	The system presents an error regarding the user’s permissions and reprints the menu.

Acceptance test for requirement 4.3

Scenario	Action	Data	Expected Result
Good	An owner of a shop chooses a registered user and promotes him to be an owner.	Valid shop id, Valid registered user id.	The chosen user became an owner of the shop.
Sad	An owner of a shop chooses a registered user and promotes him to be an owner.	Valid shop id, registered user id that's already an owner of this shop.	The system prompts an error indicating that the input user is already an owner of the shop.
Bad	A user chooses a registered user and promotes him to be an owner.	Shop id that the user isn't the owner of this shop, registered user id.	The system prompts an error indicating the user isn't the owner of this shop.

Acceptance test for requirement 4.5

Scenario	Action	Data	Expected Result
Good	An owner of a shop chooses a register user and promotes him to be a manager.	Valid shop id, Valid registered user id.	The chosen user became a manager of the shop.
Sad	An owner of a shop chooses a register user and promotes him to be a manager.	Valid shop id ,registered user id that's already a manager or an owner of the shop.	The system prompts an error indicating the user is already a manager or an owner of this shop.
Bad	A user chooses a register user and promotes him to be a manager.	Shop id that the user isn't the owner of this shop, registered user id.	The system prompts an error indicating the user isn't the owner of this shop.

Acceptance test for requirement 4.6

Scenario	Action	Data	Expected Result
Good	An owner of a shop sets or modifies management permissions for a manager that he promoted.	Valid registered user id, permissions.	The permissions of the chosen manager has been modified.
Sad	An owner of a shop sets or modifies management permissions for a manager that he promoted.	Valid registered user id, permissions that already exist.	The system won’t change a thing.
Bad	An owner of a shop sets or modifies management permissions for a manager that he didn’t promoted.	a manager that wasn't promoted by the user, permissions.	The system prompts an error indicating that the manager wasn't promoted by the owner.

Acceptance test for requirement 4.7

Scenario	Action	Data	Expected Result
Good	An owner of a shop tries to remove a manager of that shop	Owner (User ID), Manager (User ID), Shop (Shop ID)	The system will remove the manager of that shop, it will delete his permissions. The system will end any session the manager had in the system.
Sad	An owner of a shop tries to remove a user that is not a manager of that shop	Owner (User ID), User to remove (User ID), Shop (Shop ID)	The system will not apply the changes, and will alert the owner that this user is not a manager.
Bad	A registered user that is not owner of a shop tries to remove a user that is a manager of that shop	Actor (User ID), Manager (User ID), Shop (Shop ID)	The system will not apply the changes and will alert the user that he doesn’t have the permission to do this action.

Acceptance test for requirement 4.9

Scenario	Action	Data	Expected Result
Good	Manager with shop management information permission or Owner, he wants to watch the shop's information	Manager or Owner (User ID), Shop (Shop ID)	The system will display to the actor the information of the shop
Sad	A user that is not an owner nor a manager of a shop with shop management information permission, he wants to watch the shop's information	Manager (User ID), Shop (Shop ID)	The system will display an error message that he doesn’t have the necessary permissions
Bad	Manager without shop management information permission, he wants to watch the shop's information	Manager (User ID), Shop (Shop ID)	The system will display an error message that he doesn’t have the necessary permissions

Acceptance test for requirement 4.11

Scenario	Action	Data	Expected Result
Good	An owner or manager requests a purchase history of one of their shops.	Valid shop id.	The system will display the purchase history of the shop.
Sad	An owner or manager requests a purchase history of one of their shops.	Non existing shop id.	The system will prompt an error indicating the shop doesn’t exist.
Bad	A user that isn’t an owner or manager.	Valid shop id.	The system prompts an error indicating the user isn’t an owner or a manager.

Acceptance test for requirement 6.4.1

Scenario	Action	Data	Expected Result

Good	An admin wants to watch a purchase history of a specific user	Admin (User ID), Observed User (User ID)	The system will present to the admin the user’s purchase history and bills the account.
Sad	An admin wants to watch a purchase history of a non existing user	Admin (User ID), non existing User (User ID)	The system will present to the admin an error message that that user is not existing in the system
Bad	A non admin user wants to watch a purchase history of other a specific user	Non Admin (User ID), Observed User (User ID)	The system will present to the user an error message that he is not authorized to do this.

Acceptance test for requirement 6.4.2

Scenario	Action	Data	Expected Result
Good	The admin requests the purchase history of a specific shop.	Valid shop ID.	The system will display the purchase history of the shop.
Sad	The admin requests the purchase history of a specific shop.	Non existing shop ID.	The system will prompt an error indicating the shop doesn’t exist.
Bad	A user that isn’t the admin requests the purchase history of a specific shop.	Valid shop ID.	The system will prompt an error indicating the user isn’t the admin.

Acceptance test for the Payment Handler

Scenario	Action	Data	Expected Result
Good	The payment handler requests the payment info.	User ID, Payment info	The payment handler verifies the provided information and bills the user ID
Sad	The payment handler requests the payment info.	User ID, illegal Payment info	The payment handler verifies the provided information and receives an error, the user is notified and the payment is declined.
Bad	The payment handler requests the payment	User ID, Payment info	The payment handler will exit and nothing will happen, the system will ignore this payment attempt.

	info the user exits the page instead of paying.		

Acceptance test for the Spell Checker			
Scenario	Action	Data	Expected Result
Good	The user tries to spell the word Milk and writes mlk.	User Input	The spell checker suggests the word Milk to replace the word mik.
Sad	The user tries to write a non existing word in english.	User Input	The spell checker tries to suggest a word or doesnt find a matching result.
Bad	The user switches to a different language which is not supported by the system.	User Input	The spell checker prompts an error message.