



**UNIVERSIDAD DISTRITAL
FRANCISCO JOSÉ DE CALDAS**

**SECOND WORKSHOP: ELECTRONIC DEVICES STORE OBJECTED
ORIENTED PROGRAMMING IMPLEMENTATION**

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Advanced programming

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1. USER STORIES Survey and User Preferences

To better understand user needs, a survey was conducted among 15 students. The goal was to identify the most sought-after electronic devices and the essential features users expect in a digital shopping platform.

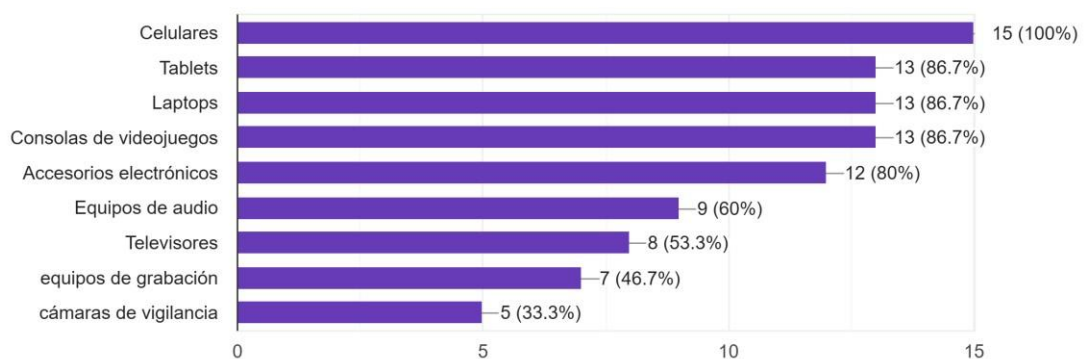
Survey Questions and Key Findings:

1. Which electronic devices would you like to find in a virtual store?

- ☐ Smartphones ☐
- Tablets ☐ Laptops ☐
- Gaming consoles ☐
- Smart TVs ☐ Audio equipment ☐ Home automation devices ☐
- Electronic accessories ☐
- Other : _____

¿Qué dispositivos electrónicos le gustaría encontrar en una tienda virtual?

15 respuestas

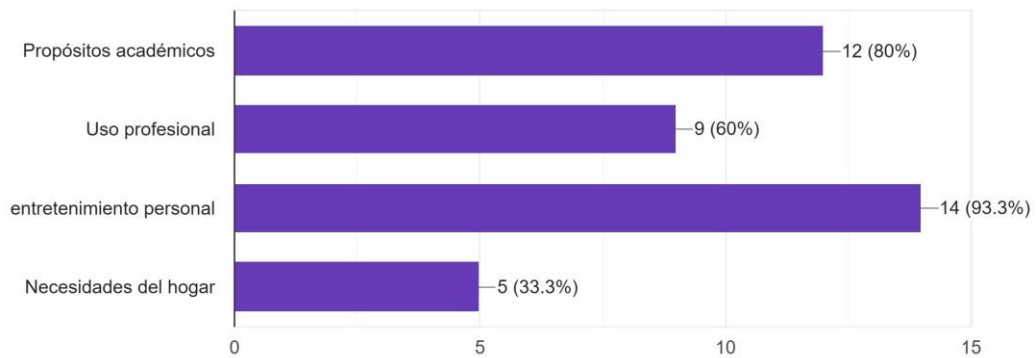


2. Why do you need these devices?

- ☐ Academic purposes ☐
- Professional use ☐
- Personal entertainment ☐
- Household needs ☐ Other : _____

¿Por qué necesitas estos dispositivos?

15 respuestas

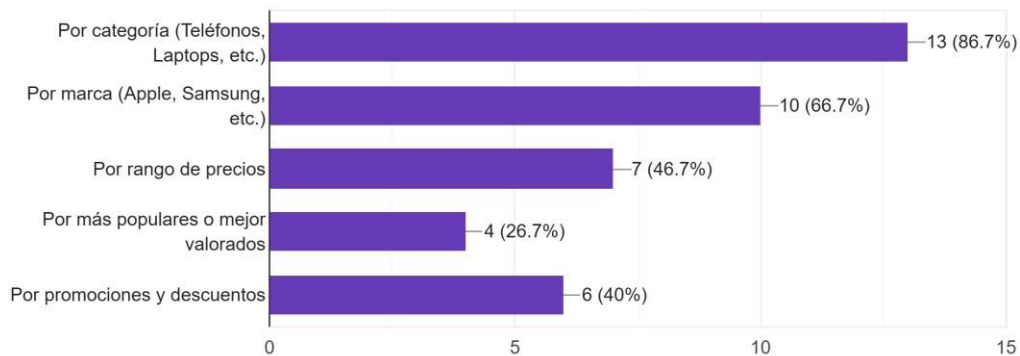


3. How would you like the products to be displayed in the application?

- ☐ By category (Phones, Laptops, etc..)
- ☐ By Brand (Apple, Samsung, etc..)
- ☐ By Price range
- ☐ By most popular or best rated
- ☐ Other: _____

¿Cómo le gustaría que se mostraran los productos en la aplicación?

15 respuestas

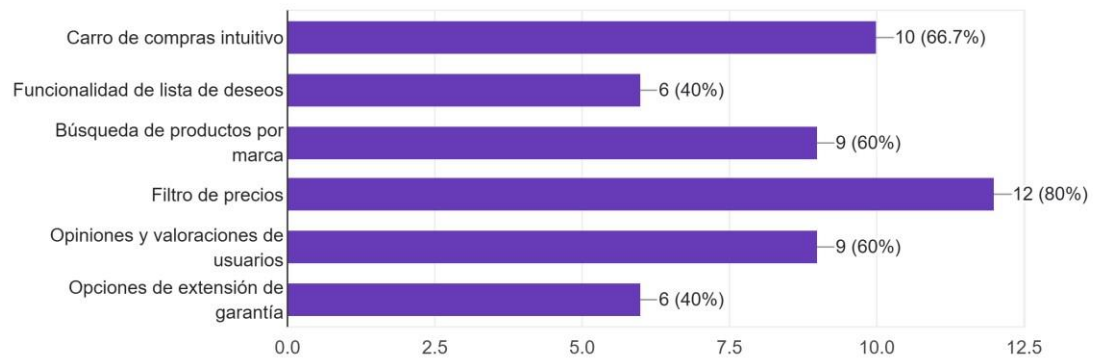


4. What features do you consider important in an online electronics store?

- ☐ Intutive shopping cart
- ☐ Wishlist functionality
- ☐ Product search by brand
- ☐ Price filter
- ☐ User reviews and ratings
- ☐ Warranty extensión options
- ☐ Other: _____

¿Qué características consideras importantes en una tienda de electrónica online?

15 respuestas



The survey was carried out by 15 students from the district university in the entire engineering area.

Nombres y Apellidos

15 respuestas

Laura Valentina Cubillos Acero

Juan David Bejarano Cristancho

Nicole María Daza Villamil

Kaleth Molina Díaz

Sebastian Chacón Mantilla

Javier Mauricio Jiménez Guzmán

Kevin David Rincon Valencia

Ivan Felipe Prado Blanco

Diego Fernando Garay

Julian Romero

Arley Leonardo Quintana Sepúlveda

Elva Ginon Ramírez

Daniel Gómez

Gerson David Cruz Rodríguez

Santiago Alejandro Guada Bohórquez

Based on the survey responses, the following user stories were created:

1. Refined User Stories

Based on the previous implementation and new requirements, here are the refined user stories:

Customer Stories:

1. As a customer, I want to browse devices by category so I can easily find what I'm looking for
2. As a customer, I want to filter devices by brand and price range to find options within my preferences
3. As a customer, I want to view warranty information for different brands to make informed decisions
4. As a customer, I want to add devices to a shopping cart so I can purchase multiple items
5. As a customer, I want to extend warranty periods during checkout for better protection
6. As a customer, I want to view my cart contents before checkout to verify my selections

Authentication Stories:

7. As a guest user, I want to browse the catalog without logging in to quickly explore options
8. As a registered user, I want to log in to access my saved preferences and purchase history
9. As an administrator, I want to manage the device catalog to keep it updated

Management Stories:

10. As an administrator, I want to add new devices to the catalog with all relevant details
11. As an administrator, I want to modify existing device information to keep it current
12. As an administrator, I want to view sales reports to track performance

2. CRC Cards

Device Class

Responsibilities:

- Store device information (name, category, price, brand, warranty)
- Provide device details
- Calculate warranty costs

Collaborators:

- Store
- ShoppingCart

User Class (New)

Responsibilities:

- Store user information
- Handle authentication
- Manage user preferences

Collaborators:

- Store
- ShoppingCart

ShoppingCart Class

Responsibilities:

- Store selected items
- Calculate total prices
- Handle warranty extensions
- Process checkout

Collaborators:

- Device
- User

Store Class

Responsibilities:

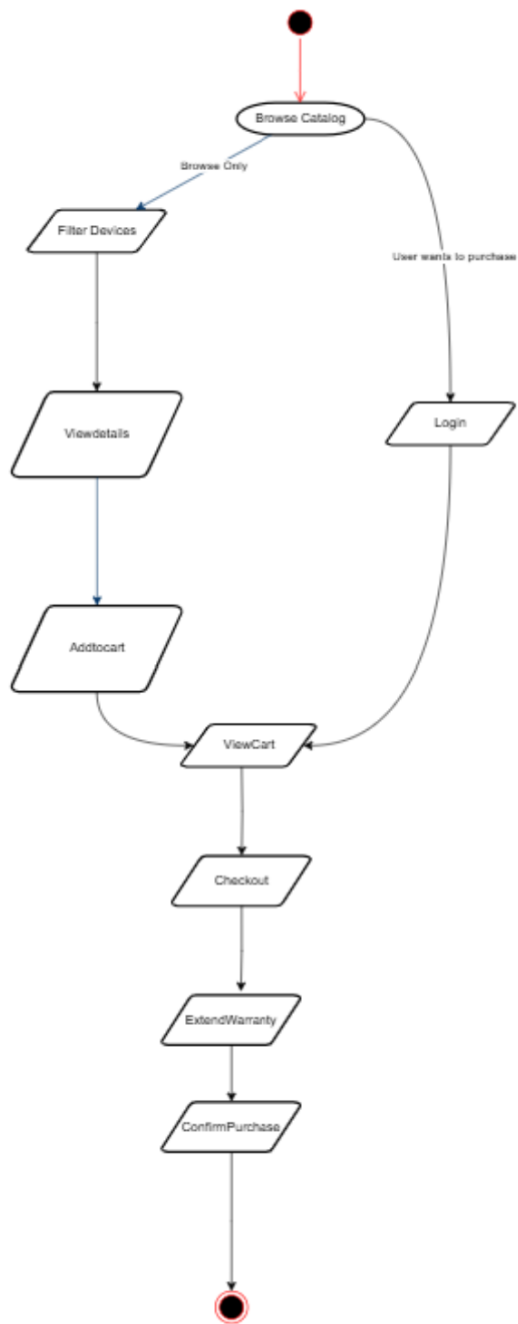
- Manage device catalog
- Filter and display devices
- Handle user interactions
- Process authentication

Collaborators:

- Device
- User
- ShoppingCart

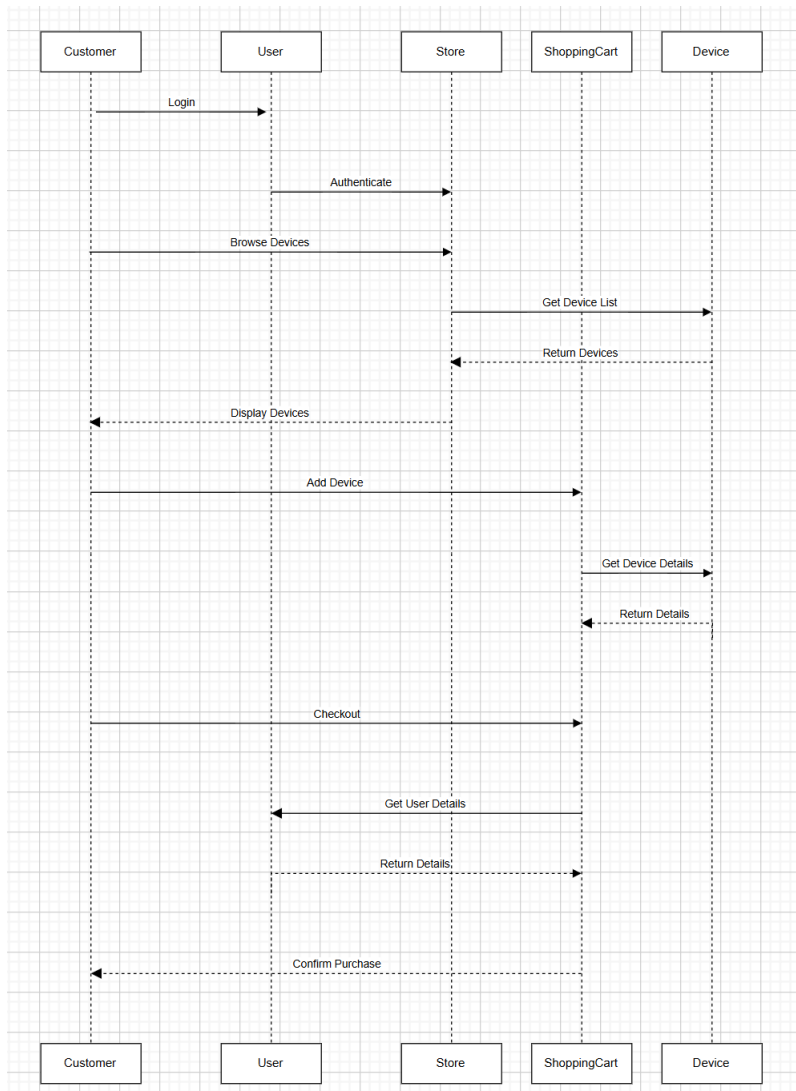
3. Activity Diagrams

Here's a Mermaid diagram showing the main user flow:



4. Sequence Diagram

Here's the sequence diagram for the purchase process:



5. Class Diagram

The improved class structure includes:

- User class for authentication and user management
- Enhanced Device class with warranty calculations
- Improved ShoppingCart with user association
- Enhanced Store class with authentication and filtering

6. Code Improvements

The following improvements have been implemented:

1. Authentication System

- Added User class for managing authentication
- Implemented password hashing for security
- Added role-based access control

2. Enhanced Device Management

- Improved warranty calculation system
- Added methods for warranty extension
- Enhanced device filtering capabilities

3. Improved Shopping Cart

- Added user association
- Enhanced warranty extension handling
- Improved checkout process
- Added purchase history tracking

4. Better Store Management

- Added role-based access control for device management
- Improved device filtering system
- Added user management capabilities

5. Code Structure

- Better separation of concerns
- Enhanced error handling
- Improved documentation
- Added type hints and docstrings