جامعة الإسكندرية
ALEXANDRIA UNIVERSITY

Faculty of Computers and Data Science

Intelligent Systems Department

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Team 15

System analysis and design project

Company Sells Laptops

Team Members

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1 Introduction

1.1 Idea of project

A company sells laptops in a shop and wants to improve their business by setting up a new website to be reached by more people.

1.2 problems

The problem that the company faces is that they have a limited customer base and a low online presence. They want to reach more people and increase their sales by creating a new website that showcases their products and allows customers to order online.

1.3 objectives

- The name of the company be popular.
- Increase the rate of sales.
- The company provide more people with laptops.
- The company name spread among youth.
- Ease the way of selling the products.
- Take a share from the online shopping in this field.
- We need a friendly interface and use buttons to make website ease for use and quick

1.4 Information Requirements from the program

- **Product Details:** Accurate and detailed information about laptops, including descriptions, models, prices, brands, images, and availability, is essential for customers to make informed purchase decisions.
- **Inventory Status:** Real-time updates on available stock levels ensure that customers are not misled by out-of-stock items and help manage restocking efficiently.
- **Customer Information:** Collecting and managing customer data, such as purchase history, enables personalized service and targeted marketing efforts.

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2 The system requirements

2.1 The functional Requirements

2.1.1 user login

- The user uses this functionality to log into the system and the users must first input their email and password.
- The user email and password will be validated, and if invalid, the user will be denied access to the system.

2.1.2 Register New user

This function is available to all users in order to register new users and create accounts.

- System must be able to verify information

2.1.3 Cart

In this functionality the selected user laptops will be previewed for him.

2.1.4 Checkout

In this functionality after the user choose the desired laptops it able him to check out his order for payment

2.2 The Non-functional requirements

2.2.1 Efficiency

- The system should swiftly handle customer orders and inquiries without delays.
- It must keep track of available laptops accurately to avoid overselling or stock shortages.

2.2.2 Usability

- The user interface of the system should be very friendly.
- It should not take long time for a new user to register for an account

2.2.3 Reliability

- The system needs to function consistently without unexpected shutdowns or errors, ensuring it's always available for customers and sellers.
- It should maintain accurate information about laptops, prices, and availability, preventing confusion or incorrect details for customers.

2.2.4 Security

- The system must stay updated with the latest security patches and software updates to be safe against potential threats.

2.2.5 Organization Rule

- The system must follow the company policy of sale

3 Database explanation:

	Code	Explanation
Cart	CREATE TABLE `cart` (`cart_id` int(11) NOT NULL, `customer_id` int(11) NOT NULL, `status` varchar(50) NOT NULL DEFAULT 'open', `date_created` datetime NOT NULL)	• It Stores information about shopping carts. • cart_id: Unique identifier for each cart. • customer_id: Foreign key referencing the customer who owns the cart. • status: Current state of the cart • date_created: date of when the cart was created.
cart_item	CREATE TABLE `cart_item` (`cart_item_id` int(11) NOT NULL,	• It Stores information about each item in cart. • cart_item_id: Unique identifier for each cart item.

	`cart_id` int(11) NOT NULL, `laptop_id` int(11) NOT NULL, `quantity` int(11) NOT NULL, `total_price` decimal(10,2) DEFAULT 0.00)	• cart_id: Foreign key referencing the cart the item belongs to. • laptop_id: Foreign key referencing the laptop in the cart. • quantity: Number of units of the laptop in the cart. • total_price: Calculated price of the item based on quantity and laptop price.
customer	CREATE TABLE `customer` (`customer_id` int(11) NOT NULL, `username` varchar(50) NOT NULL, `password` varchar(255) NOT NULL, `email` varchar(100) NOT NULL, `phone_number` varchar(20) DEFAULT NULL, `street` varchar(255) DEFAULT NULL, `city` varchar(50) DEFAULT NULL,	• It Stores information about customers. • customer_id: Unique identifier for each customer. • username: Customer's username for login. • password: Hashed password for secure login. • email: Customer's email address. • phone_number: Customer's phone number . • address information: street, city, country, building .

	`country` varchar(50) DEFAULT NULL, `building` varchar(50) DEFAULT NULL)	
laptop	CREATE TABLE `laptop` (`laptop_id` int(11) NOT NULL, `model` varchar(100) NOT NULL, `brand` varchar(50) NOT NULL, `description` text NOT NULL, `price` decimal(10,2) NOT NULL, `image_url` varchar(255) DEFAULT NULL, `stock` int(11) NOT NULL)	• It Stores information about laptops. • laptop_id: Unique identifier for each laptop. • model: Model name of the laptop. • brand: Brand of the laptop. • description: Detailed description of the laptop. • price: Price of the laptop. • image_url: URL to the laptop's image • stock: Remaining number of laptops in stock.
payment	CREATE TABLE `payment` (`payment_id` int(11) NOT NULL, `card_name` varchar(255) DEFAULT NULL,	• It Stores information about customer payment methods • payment_id: Unique identifier for each payment method. • card_name: Name of payment method.

	`balance` decimal(10,2) DEFAULT NULL, `customer_id` int(11) DEFAULT NULL)	• balance: Remaining balance on the payment method • customer_id: Foreign key referencing the customer the payment method belongs to.
_order	CREATE TABLE `_order` (`order_id` int(11) NOT NULL, `customer_id` int(11) NOT NULL, `total_amount` decimal(10,2) NOT NULL, `order_date` datetime DEFAULT current_timestamp())	• It Stores information about orders. • order_id: Unique identifier for each order. • customer_id: Foreign key referencing the customer who placed the order. • total_amount: Total amount paid for the order. • order_date: date of when the order was placed.

4 Diagrams

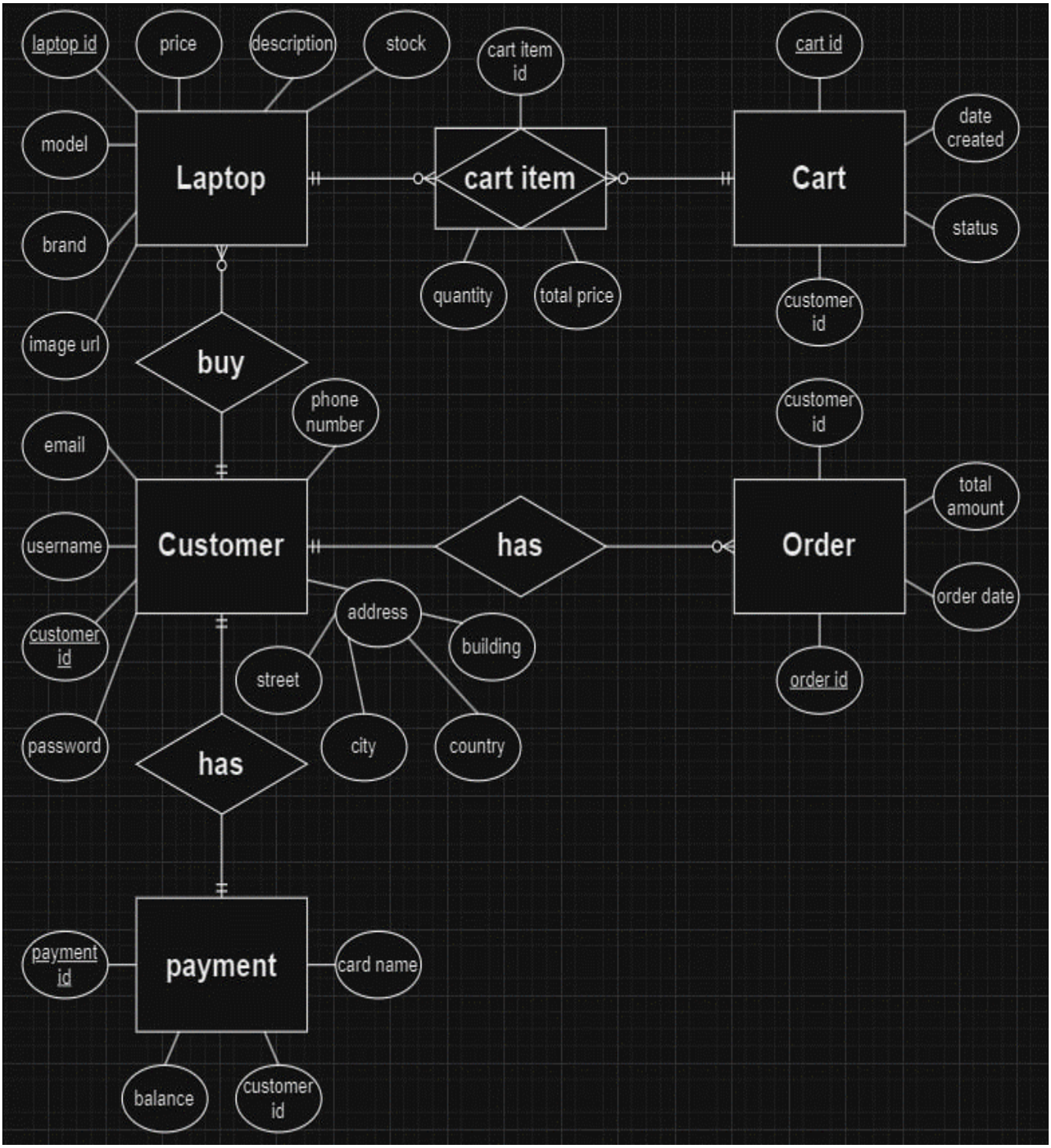

Figure 1: ERD

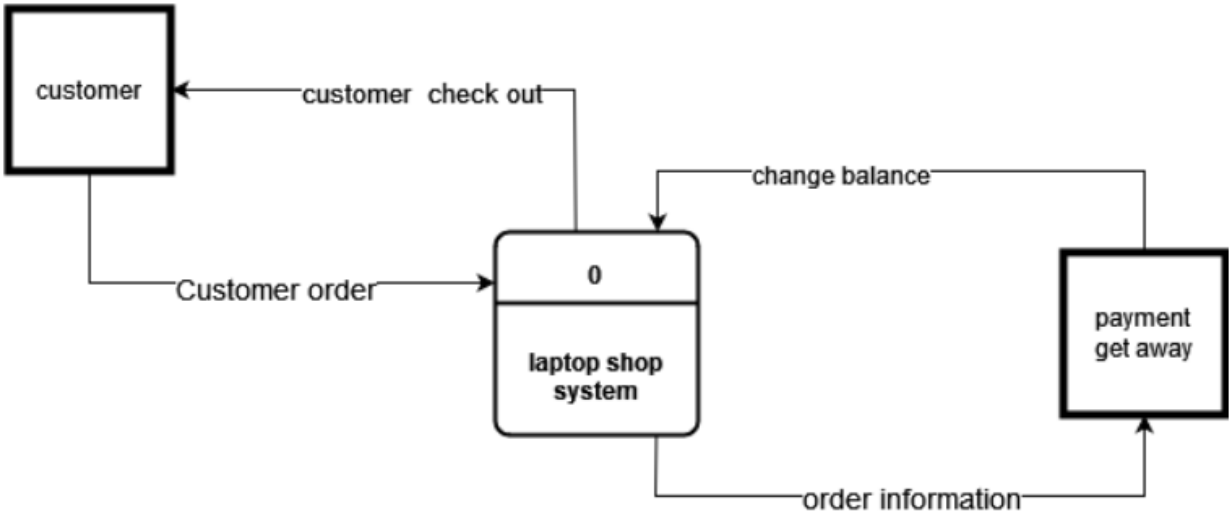

Figure 2: DFD: CONTEXT DIAGRAM

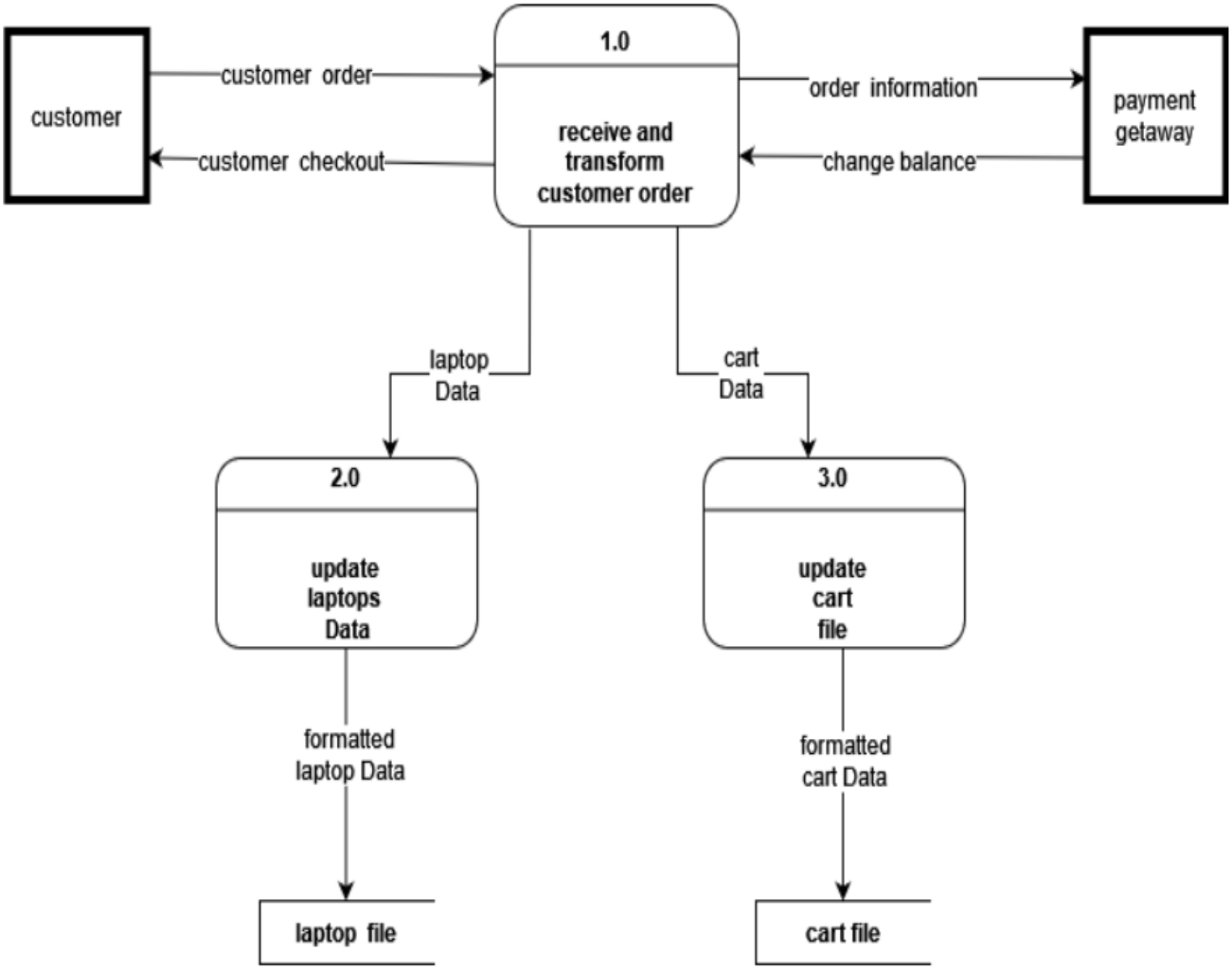

Figure 3: DFD: Level 1

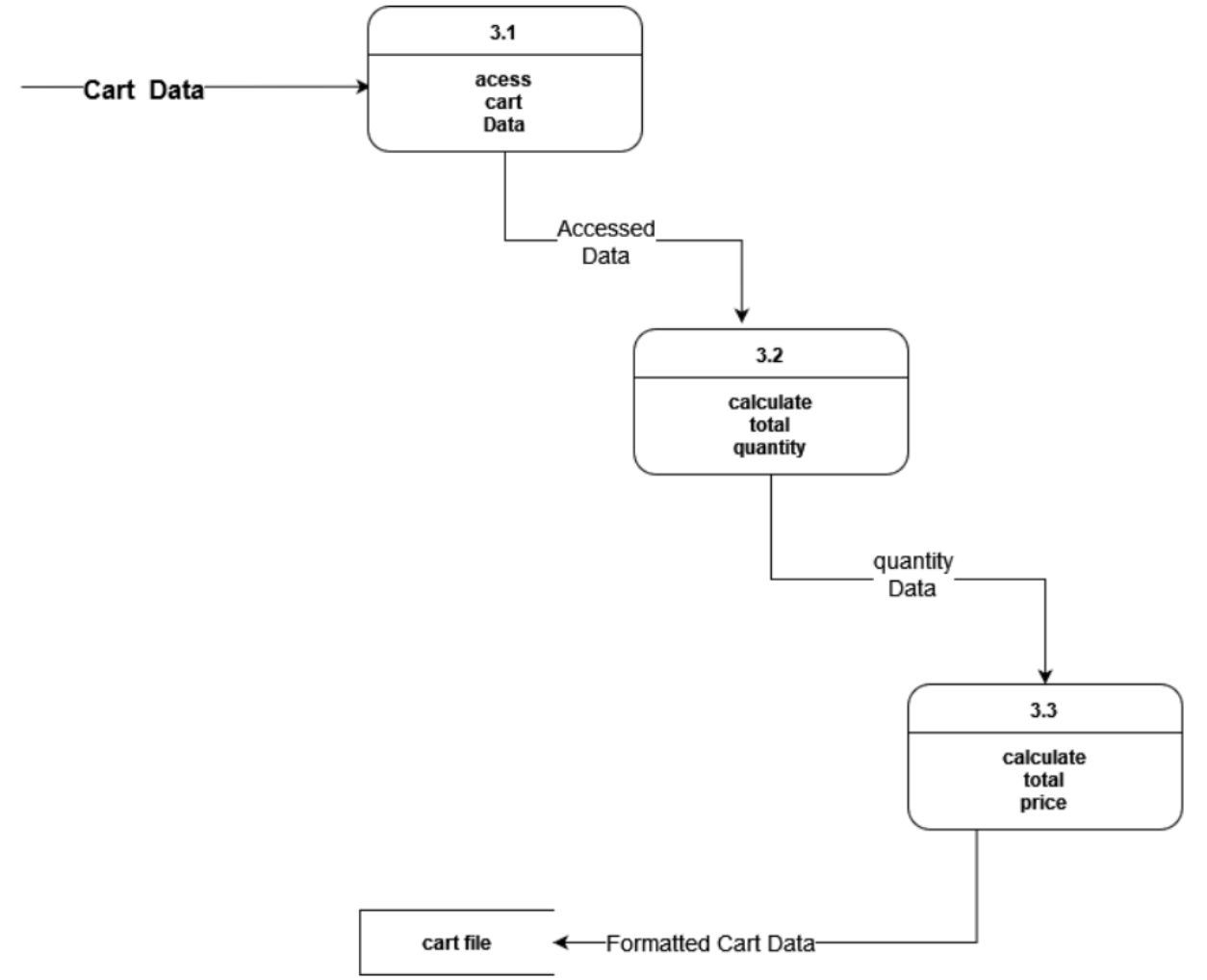

Figure 4: DFD: Level 2

Figure 5: User login

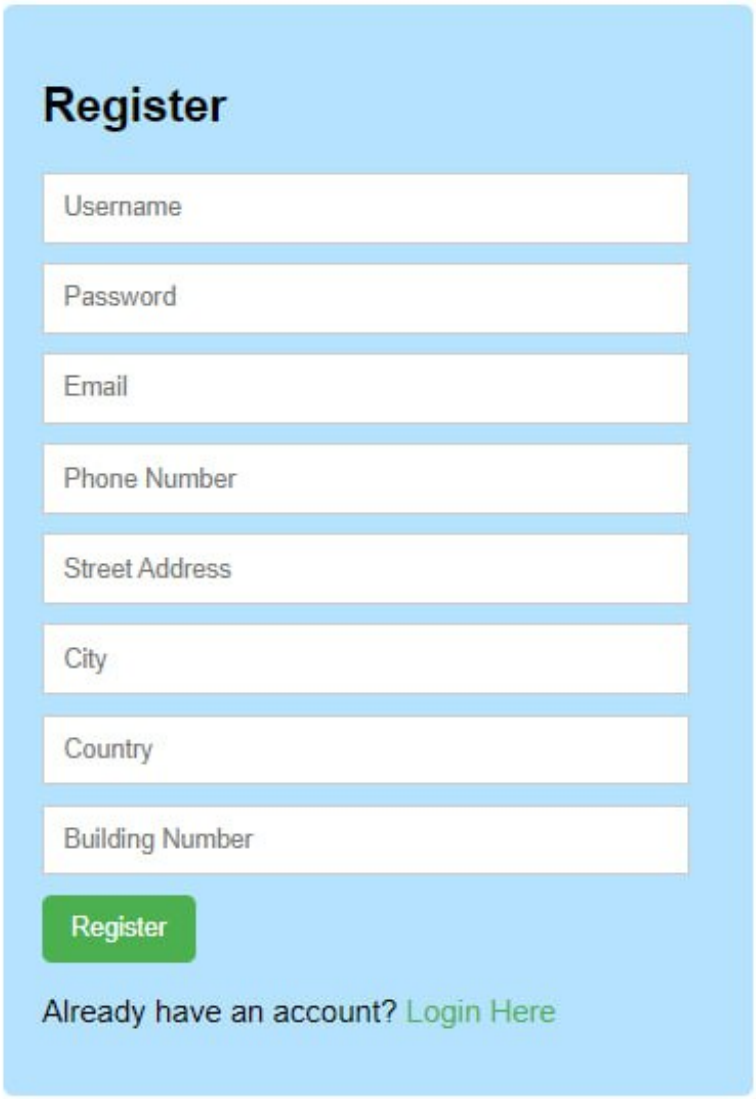

Figure 6: User Registration

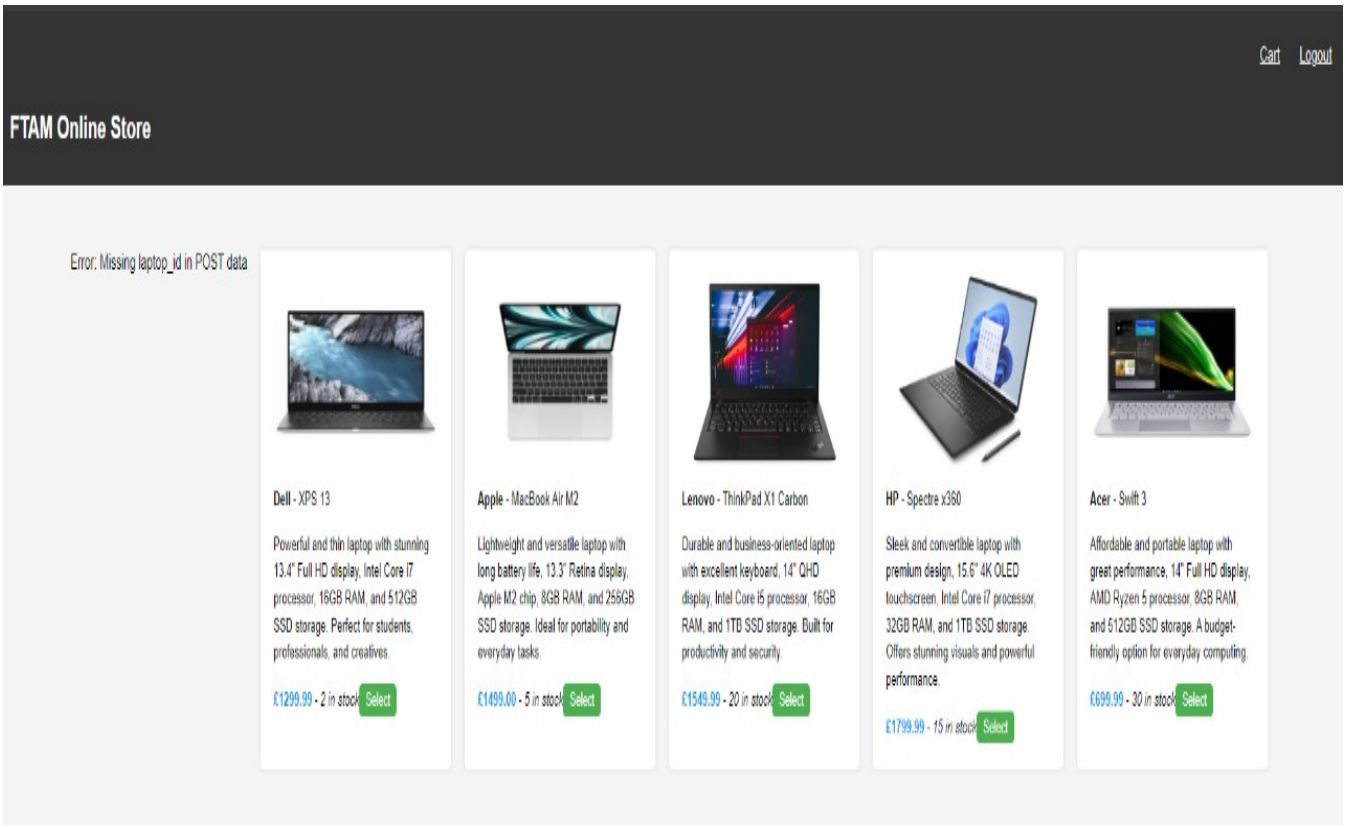

Figure 7: Laptop Store

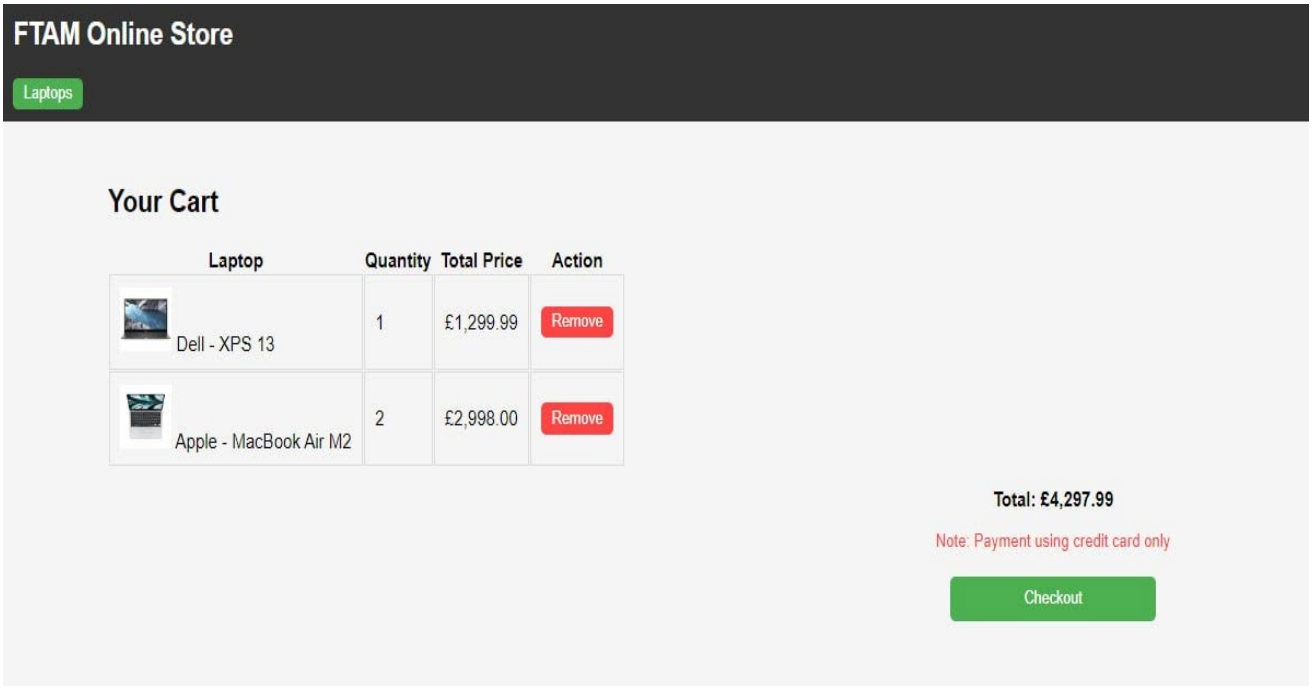

Figure 8: Cart