

Byte Me - E-Commerce College Project

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Project Overview

Byte Me is a comprehensive e-commerce application developed as a college project. The application provides a robust platform for users to interact with an online store, supporting both customer and administrative functionalities.

Features

- *User Authentication*
 - Secure user registration and login system
 - Separate access for Customers and Admins
- *Inventory Management*
 - Admin can add, update, and remove items
 - Real-time inventory tracking
 - Out-of-stock item management
- *Shopping Experience*
 - Browse available items
 - Add/remove items from cart
 - Modify cart item quantities
 - Place and manage orders
- *Order System*
 - Create and track orders
 - View order status
 - Cancel pending orders
 - Admin order status management
- *Data Persistence*
 - Serialization of user, item, and order data

- Data retention between application sessions

Technologies Used

- *Programming Language*: Java (JDK 21+)
- *Testing Framework*: JUnit 5
- *GUI Framework*: Java Swing
- *Data Storage*: Java Serialization

Installation

Prerequisites

- Java Development Kit (JDK) 21 or higher
- Git
- Integrated Development Environment (IDE)

Steps

1. Clone the repository
bash
git clone https://github.com/yourusername/byte-me.git
cd byte-me
2. Open the project in your preferred Java IDE
3. Build the project using the IDE's build tools
4. Run the application by executing the ByteMeApp class

Usage

User Roles

- *Customer*
 - Register/Login
 - Browse items
 - Manage shopping cart
 - Place and track orders
- *Admin*
 - Manage inventory
 - View and update order statuses
 - Add/remove/modify items

Basic Workflow

1. Launch the application
2. Choose to register or login
3. Navigate through available functionalities based on user role

File Structure

```
byte-me/
├── src/
│   ├── Admin.java
│   ├── ByteMeApp.java
│   ├── Customer.java
│   ├── Item.java
│   ├── ItemContainer.java
│   ├── Order.java
│   ├── OrderContainer.java
│   ├── User.java
│   ├── UserManager.java
│   └── tests/
│       └── CustomerTest.java
├── out/
├── Orders.ser
├── Items.ser
└── Users.ser
```

Testing

Unit Tests

The project includes comprehensive unit tests in CustomerTest.java, covering:

- Out-of-stock item ordering scenarios
- Login validation
- User interaction edge cases

Running Tests

- Use your IDE's built-in test runner
- Alternatively, run tests via command line with JUnit

Contributing

1. Fork the repository
2. Create a feature branch

```
bash
```

```
git checkout -b feature/your-feature-name
```

3. Commit your changes

```
bash
```

```
git commit -m 'Add some feature'
```

4. Push to the branch

```
bash
```

```
git push origin feature/your-feature-name
```

5. Open a pull request

Name - raunak kuamar giri 2023427