E-Commerce Platform Project Code:

```
#include <bits/stdc++.h>
using namespace std;
class Product {
public:
   string name;
   string brand;
   double price;
   Product(string name, string brand, double price)
      : name(name), brand(brand), price(price) {}
   virtual void display() const = 0;
};
class Electronics : public Product {
public:
   Electronics(string name, string brand, double price)
      : Product(name, brand, price) {}
   void display() const override {
      cout << "Electronics: " << name << " by " << brand << " for $" << price
<< endl;
   }
```

```
};

class Fashion : public Product {

public:

   Fashion(string name, string brand, double price)

      : Product(name, brand, price) {}

   void display() const override {

      cout << "Fashion: " << name << " by " << brand << " for $" << price <<
endl;

   }

};

class HomeAppliance : public Product {

public:

   HomeAppliance(string name, string brand, double price)

      : Product(name, brand, price) {}

   void display() const override {

      cout << "Home Appliance: " << name << " by " << brand << " for $" <<
price << endl;

   }

};

class Book : public Product {

public:

   Book(string name, string author, double price)
```

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        : Product(name, author, price) {}
    void display() const override {
        cout << "Book: " << name << " by " << brand << " for $" << price <<
endl;
    }
};
class Sports : public Product {
public:
    Sports(string name, string brand, double price)
        : Product(name, brand, price) {}
    void display() const override {
        cout << "Sports: " << name << " by " << brand << " for $" << price <<
endl;
    }
};
class User {
private:
    string name;
    string email;
    string password;
    string phoneNumber;
    string address;
```

```
    vector<string> cart;
    vector<string> purchaseHistory;
public:
    User(string name, string email, string password, string phoneNumber,
string address)
        : name(name), email(email), password(password),
phoneNumber(phoneNumber), address(address) {}
    string getName() const { return name; }
    string getEmail() const { return email; }
    bool authenticate(const string &inputEmail, const string
&inputPassword) const {
        return email == inputEmail && password == inputPassword;
    }
    void addToCart(const string &product) {
        cart.push_back(product);
        cout << product << " has been added to your cart." << endl;
    }
    void purchaseItem(const string &product) {
        purchaseHistory.push_back(product);
        cout << "Purchased: " << product << endl;
    }
    void displayCart() const {
        if (cart.empty()) {
```

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            cout << "Your cart is empty." << endl;
        } else {
            cout << "Items in your cart:\n";
            for (const auto &item : cart) {
                cout << item << endl;
            }
        }
    }
    void displayPurchases() const {
        if (purchaseHistory.empty()) {
            cout << "You haven't made any purchases yet." << endl;
        } else {
            cout << "Your purchase history:\n";
            for (const auto &item : purchaseHistory) {
                cout << item << endl;
            }
        }
    }
};
User *loginUser(vector<User *> &users) {
    string email, password;
```

```
    cout << "Enter your email: ";
    cin >> email;
    cout << "Enter your password: ";
    cin >> password;
    for (auto user : users) {
        if (user->authenticate(email, password)) {
            cout << "Login successful! Welcome, " << user->getName() << "!" <<
endl;
            return user;
        }
    }
    cout << "Invalid email or password." << endl;
    return nullptr;
}
void registerNewUser(vector<User *> &users) {
    string name, email, password, phoneNumber, address;
    cout << "Enter your name: ";
    cin.ignore();
    getline(cin, name);
    cout << "Enter your email: ";
    cin >> email;
    cout << "Enter your password: ";
```

```
    cin >> password;
    cout << "Enter your phone number (10 digits): ";
    cin >> phoneNumber;
    cout << "Enter your address: ";
    cin.ignore();
    getline(cin, address);
    users.push_back(new User(name, email, password, phoneNumber,
address));
    cout << "Registration successful!" << endl;
}
void displayCategories(User *loggedInUser, vector<Product *>
&electronics, vector<Product *> &fashion,
                       vector<Product *> &homeAppliances, vector<Product *>
&books, vector<Product *> &sports) {
    while (true) {
        cout << "\nSelect a category to browse:\n";
        cout << "1. Electronics\n2. Fashion\n3. Home Appliances\n4.
Books\n5. Sports\n6. Exit\n";
        int choice;
        cin >> choice;
        vector<Product *> selectedCategory;
        switch (choice) {
        case 1: selectedCategory = electronics; break;
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```
case 2: selectedCategory = fashion; break;
case 3: selectedCategory = homeAppliances; break;
case 4: selectedCategory = books; break;
case 5: selectedCategory = sports; break;
case 6: return;
default:
    cout << "Invalid choice, try again." << endl;
    continue;
}
cout << "\nProducts available:\n";
for (size_t i = 0; i < selectedCategory.size(); ++i) {
    cout << i + 1 << ". ";
    selectedCategory[i]->display();
}
int productChoice;
cout << "Select a product to view details: ";
cin >> productChoice;
if (productChoice < 1 || productChoice > selectedCategory.size()) {
    cout << "Invalid choice, returning to category selection." << endl;
    continue;
}
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        Product *selectedProduct = selectedCategory[productChoice - 1];
        cout << "\nWhat would you like to do with this product?\n";
        cout << "1. Add to Cart\n2. Buy Now\n3. Return to Categories\n";
        int action;
        cin >> action;
        switch (action) {
        case 1:
            loggedInUser->addToCart(selectedProduct->name);
            break;
        case 2:
            loggedInUser->purchaseItem(selectedProduct->name);
            break;
        case 3:
            continue; // Return to categories
        default:
            cout << "Invalid choice, returning to categories." << endl;
        }
    }
}
int main() {
    vector<User *> users;
```

```
vector<Product *> electronics = {
    new Electronics("Smartphone", "Brand A", 699.99),
    new Electronics("Laptop", "Brand B", 1299.99),
    new Electronics("Smart TV", "Brand C", 799.99),
    new Electronics("Tablet", "Brand D", 399.99),
    new Electronics("Smartwatch", "Brand E", 249.99)
};
vector<Product *> fashion = {
    new Fashion("T-Shirt", "Brand D", 19.99),
    new Fashion("Jeans", "Brand E", 39.99),
    new Fashion("Jacket", "Brand F", 89.99),
    new Fashion("Sneakers", "Brand G", 59.99),
    new Fashion("Dress", "Brand H", 49.99)
};
vector<Product *> homeAppliances = {
    new HomeAppliance("Refrigerator", "Brand F", 499.99),
    new HomeAppliance("Washing Machine", "Brand G", 349.99),
    new HomeAppliance("Microwave", "Brand H", 99.99),
    new HomeAppliance("Vacuum Cleaner", "Brand I", 79.99),
    new HomeAppliance("Air Conditioner", "Brand J", 499.99)
};
```

```
vector<Product *> books = {
    new Book("C++ Programming", "Author A", 29.99),
    new Book("Design Patterns", "Author B", 24.99),
    new Book("The Great Gatsby", "F. Scott Fitzgerald", 10.99),
    new Book("To Kill a Mockingbird", "Harper Lee", 12.99),
    new Book("1984", "George Orwell", 14.99)
};
vector<Product *> sports = {
    new Sports("Basketball", "Brand H", 24.99),
    new Sports("Tennis Racket", "Brand I", 49.99),
    new Sports("Football", "Brand J", 29.99),
    new Sports("Baseball Bat", "Brand K", 39.99),
    new Sports("Soccer Ball", "Brand L", 19.99)
};
cout << "\tWELCOME TO OUR ECOMMERCE PLATFORM\t" << endl;
while (true) {
    cout << "Are you an existing user? (1 for Yes, 2 for No, 3 to Exit): ";
    int choice;
    cin >> choice;
    User *loggedInUser = nullptr;
    if (choice == 1) {
```

```
            loggedInUser = loginUser(users);
            if (!loggedInUser) continue;
        } else if (choice == 2) {
            registerNewUser(users);
            loggedInUser = users.back();
        } else if (choice == 3) {
            break;
        }
        while (loggedInUser) {
            cout << "\nWhat would you like to do?\n";
            cout << "1. Browse Items\n2. View Cart\n3. View Purchases\n4.
Logout\n";
            int action;
            cin >> action;
            if (action == 1) {
                displayCategories(loggedInUser, electronics, fashion,
homeAppliances, books, sports);
            } else if (action == 2) {
                loggedInUser->displayCart();
            } else if (action == 3) {
                loggedInUser->displayPurchases();
            } else if (action == 4) {
```

```
            cout << "Logging out." << endl;
            loggedInUser = nullptr;
        } else {
            cout << "Invalid choice, try again." << endl;
        }
    }
  }
  for (auto user : users) delete user;
  for (auto product : electronics) delete product;
  for (auto product : fashion) delete product;
  for (auto product : homeAppliances) delete product;
  for (auto product : books) delete product;
  for (auto product : sports) delete product;
  return 0;
}
```