Final Presentation - Team Shop

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Problem Addressed

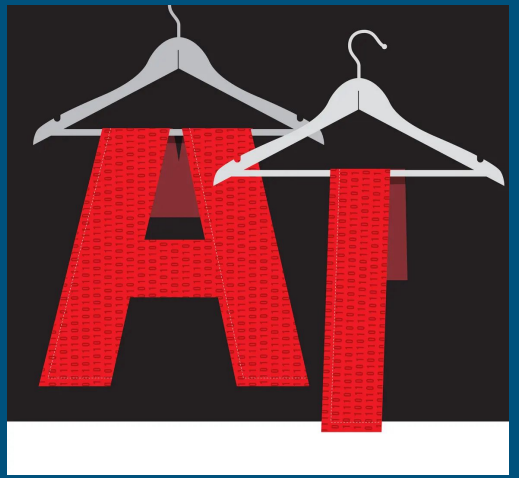
Nowadays there are a lot of trends to keep up with and brands to keep an eye out for. Many people have their differences and preferences when it comes to style, price, clothing, and fit. With that being said, it is hard to find a product at a reasonable price that fits all these unique preferences. Most online stores do provide a filtration system but there is not one universal application that takes all stores and brands into account that can then provide suggestions to the user on what to buy based on their preferences. This leads to buyers being put in a tough spot and not being able to find a good quality product at the price they are looking for.

Solution

Our solution is to provide an application that uses AI/ML algorithms to offer product recommendations based on what the user filters. Our application allows for a user to login and input their personal information such as height and weight. The user is then provided with certain filters such as clothing style, brand, size, price, and clothing type. After going through these filters the user is then provided with numerous recommendations sorted from lowest to highest price that the user can click onto. By clicking on a product the user is taken to the product page where they can then get it delivered to their house or go in store to buy.

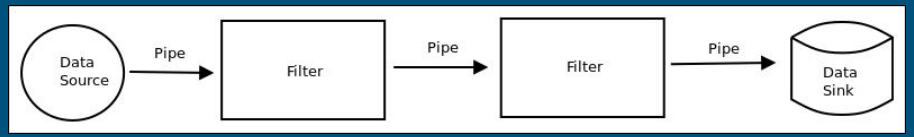
Related Work

- Using Machine Learning to Improve E-commerce User Experience
- H&M's AI-Based Fashion Assistant
- Advanced Analytics with Spark: Patterns for Learning from Data at Scale
- Similar Applications
  - Zalando
  - Stitch Fix
  - The Yes
  - Thread



Discussed in Class Concept 1

Our application uses the pipe and filter design pattern. The pipe and filter design pattern essentially takes a task and breaks it down into smaller steps that pass data from one step to the next. For our application, the pipe and filter design pattern works perfectly because it provides user input filters and is able to process the data derived from the input filters to determine the user's preferences. This is able to give the user clothing and brand recommendations based on their preferences. This design pattern is also helpful in terms of the application development process as each component of the application can be independently developed and altered without affecting other components.



Discussed in Class Concept 2

For our high-level design, in order to structure our system, we implemented event-based architecture. This was helpful in our application because its was highly efficient in its asynchronous updates we could get from user specifications. With multiple group members, it was easier for us to adapt under an event-based architecture and be more flexible if a member was unable to fulfill a requirement so it needed the assistance of another member. As well, when an event was published it was easier to be scaled, updated, and deployed independently into our application.

Class Concept 3 Discussed in Class

The software development framework we used was scrum. This was useful for our project because having scrum meetings allowed our team to make improvements or additions to our design easily throughout the overall process. It encouraged collaboration among our team members and organization. During scrum meetings, taking notes on what we have already accomplished and what we had left to do assisted us in allotting tasks evenly amongst ourselves and ensuring we weren't behind. Scrum is especially useful for an app designed the way ours is because it is ideal for development after getting user feedback. Because our app uses AI, it would rely heavily on user data. With scrum, we would be able to get user feedback and upgrade user experience by changing algorithms accordingly.

Use Case Descriptions

1. ***Shop Clothes***: The registered user wants to be able to buy a cheap blue top, and the stakeholder wants to be able to provide an easy seamless shopping experience for the user.

2. ***User Inputting Preferences:*** The user can easily follow directions to input preferences, and the stakeholder wants to be able to provide an easy seamless shopping experience for the user.

3. ***User wants to edit their address:*** The user can easily change their delivery address without taking time away from shopping, and the stakeholder wants to be able to provide an easy seamless shopping experience for the user.

Use Case 1: Shop Clothes

- **Primary Actor**: Registered User
- **Stakeholder and & Interests**: The registered user wants to be able to buy a cheap blue top, and the stakeholder wants to be able to provide an easy seamless shopping experience for the user
- **Preconditions:** The user must have already created an account and put in the information requested such as email and address. Must also be a registered user with reliable internet access.
- **Postconditions:** The user can receive a link to purchase the blue top and later the application will be able to update their preferences and save it within their profile.
- **Main Success Scenario**: The user will put in preferences for the clothing article they are looking for such as preference of color, type of clothing, and price range. [S1]. The app will return clothes that fit preferences based on previous choices as well. User will choose a top to their liking [S2]. The user chooses an option they like and buys it on the site through the app [S3]. Users will be taken to the site selling the top and will be able to order the top to their address and AI will take note of the user choice when providing future recommendations [S4]. The user buys the top of their choice [S5].
- **Alternative Flows**: If the system is not able to determine the user's location then the user will be prompted with a message box asking the user to manually enter their zip code within a mile radius for locations of stores.
- **Special Requirements**: Personal data such as card information, address, and user preferences must be handled securely to comply with security requirements.

Use Case 2: User Inputting Preferences

- **Primary Actor:** Registered user
- **Stakeholders & Interests:** The user can easily follow directions to input preferences, and the stakeholder wants to be able to provide an easy seamless shopping experience for the user.
- **Preconditions:**The user must have already created an account and put in the information requested such as email and addre Must also be a registered user with reliable internet access.
- **Postconditions:** The user can input their preferences and is now ready to receive links and ready to start shopping.
- **Main Success Scenario:** The user logs in [S1]. The user is now prompted to input their current home address [S2]. The user i prompted to input their height and weight along with their size [S3]. The user is prompted to input the type of clothing they want and what style of clothing [S4]. The user can input their price range for clothing [S5].
- **Alternative Flows:** If the system is not able to determine the user's location then the user will be prompted with a message b asking the user to manually enter their zip code within a mile radius for locations of stores.
- **Special Requirements:** Personal data such as card information, address, and user preferences must be handled securely to with security requirements.

Use Case 3: User Editing Address

- **Primary Actor:** Registered User
- **Stakeholders & Interests:** The user can easily change their delivery address without taking time away from shopping, and the stakeholder wants to be able to provide an easy seamless shopping experience for the user.
- **Preconditions:** The user must have already created an account and put in the information requested such as email and address. Must also be a registered user with reliable internet access. The user has also imputed their delivery address at a previous time before.
- **Postconditions:** The user has successfully changed their delivery address and can now start shopping.
- **Main Success Scenario:** The user logs into their account [S1]. The user goes to profile settings [S2]. The user then clicks on the personal information tab [S3]. The user clicks on the address tab [S4]. The user is now able to input a new address and can save this address for future deliveries [S5].
- **Alternative Flows:** If the system is not able to determine the user's location then the user will be prompted with a message box asking the user to manually enter their zip code within a mile radius for locations of stores.
- **Special Requirements:** Personal data such as card information, address, and user preferences must be handled securely to comply with security requirements.

Future Work

- Allow users to rate and leave reviews on items

  Users would be allowed to rate items out of 5 stars and the data would also assist in getting user feedback for app development. Letting them leave reviews would add a social aspect to the app and allow other users to make decisions based on these reviews.

- Add a picture feature

  In the future we could implement a picture feature in which users could upload a picture of an article of clothing they like. The app would then recommend similar articles of clothing. This way, users wouldn’t need to fill in filters for color or clothing type.

Thank You

Any Questions?