Design Document, Usability Document, Design Justification

for

Deal Finder

Version 1.1

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Introduction

Purpose

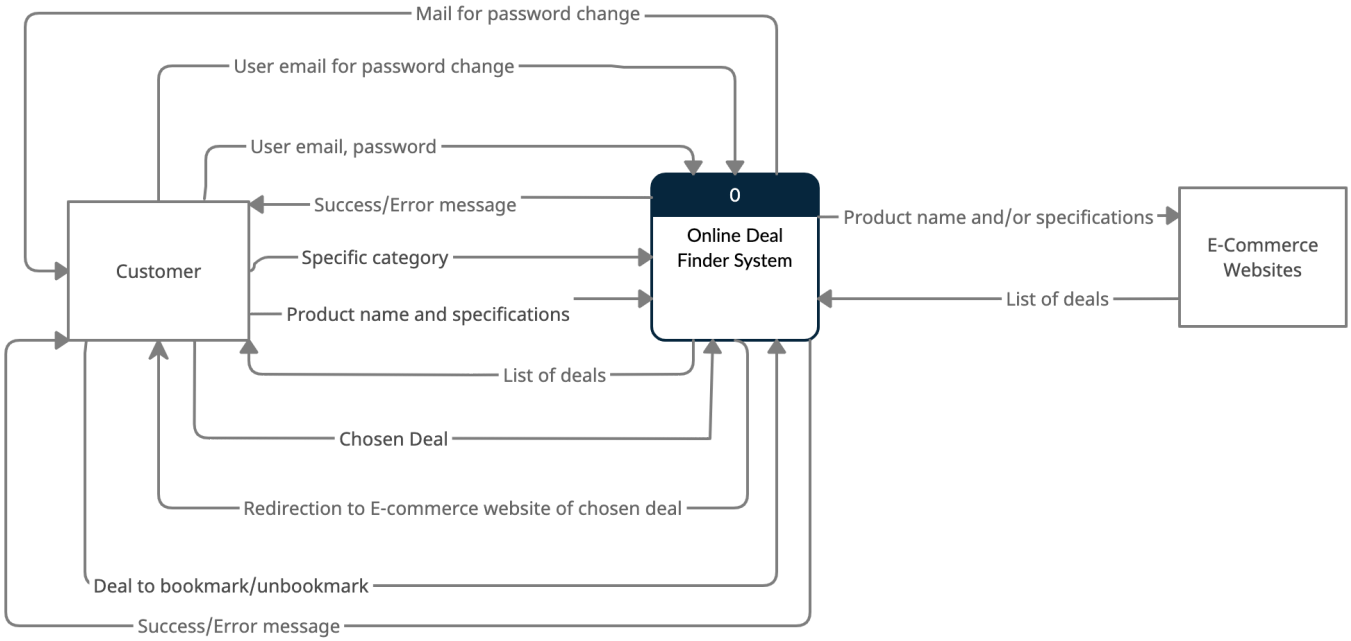
The purpose of the document is to Specify the design for the project designed to aim at making the online shopping experience for the shopper easier by finding the optimum deals from various e-commerce websites for a given product type. It includes the conventions, Data Flow Diagram, Entity Relationship Diagram, Usability write up and Design Justification.

Document Conventions

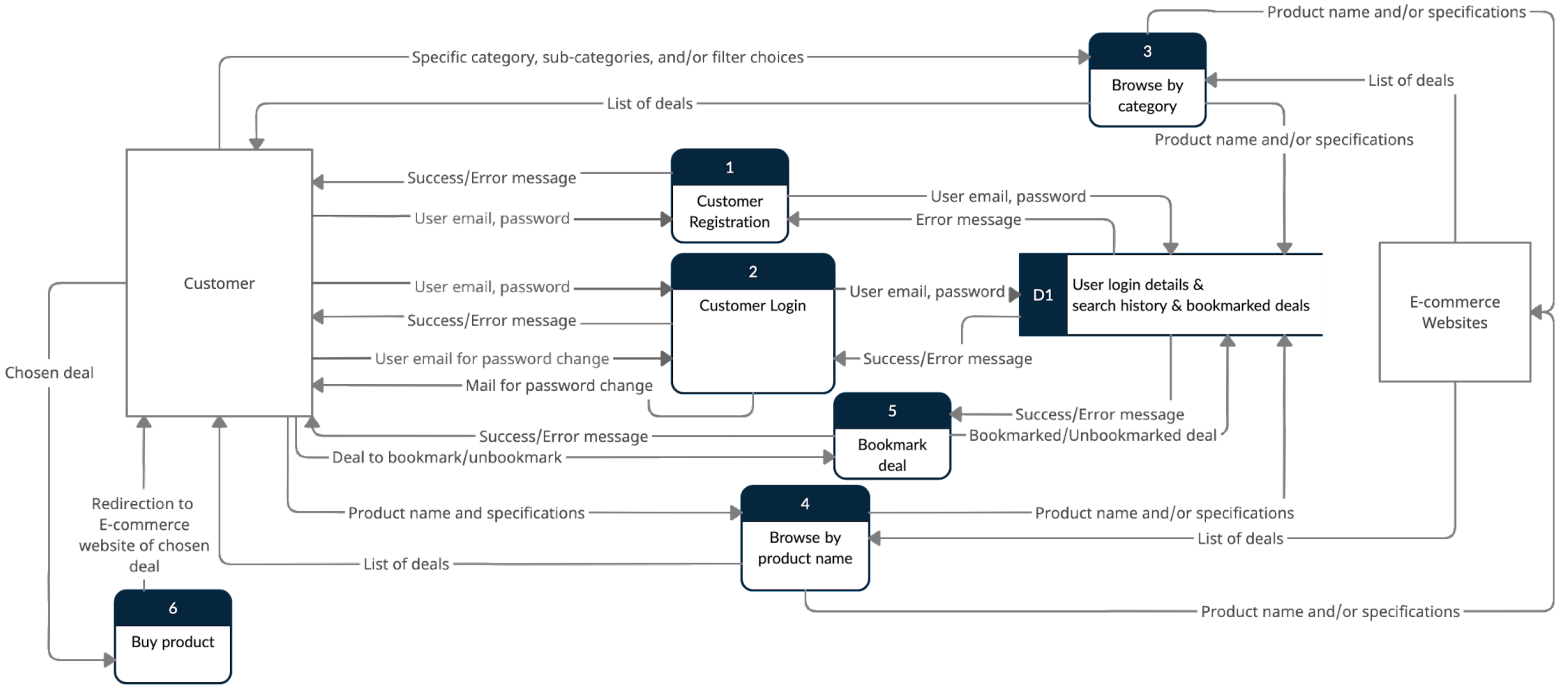
TERM	*EXPLANATIONS*
Deal	string of (product details + price of that particular product from a particular E-Commerce website)
Coupon	A ticket or code that can be redeemed for a financial discount or rebate while purchasing a product
Success/Error Message	This will be a string of the message to be displayed to the user as per the success of the task.The error will be explained in layman terms.
Product name and/or specification	This string will be formed, using different choices of the user (of category, filters, brands etc) regarding the product, to be used as a query for the ecommerce websites.
Bookmark	A way to save the deals generated in the user's profile

DEAL FINDER DATA FLOW DIAGRAM

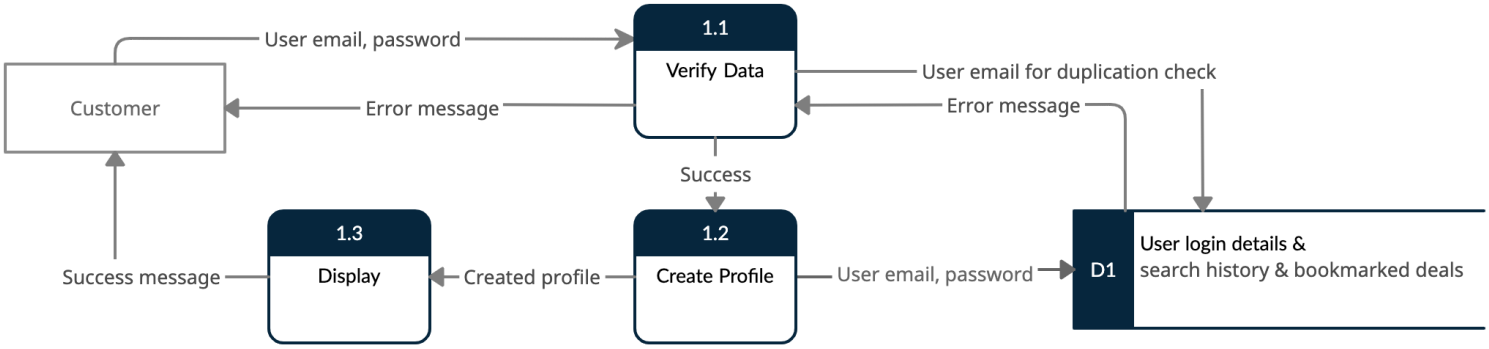
LEVEL-0



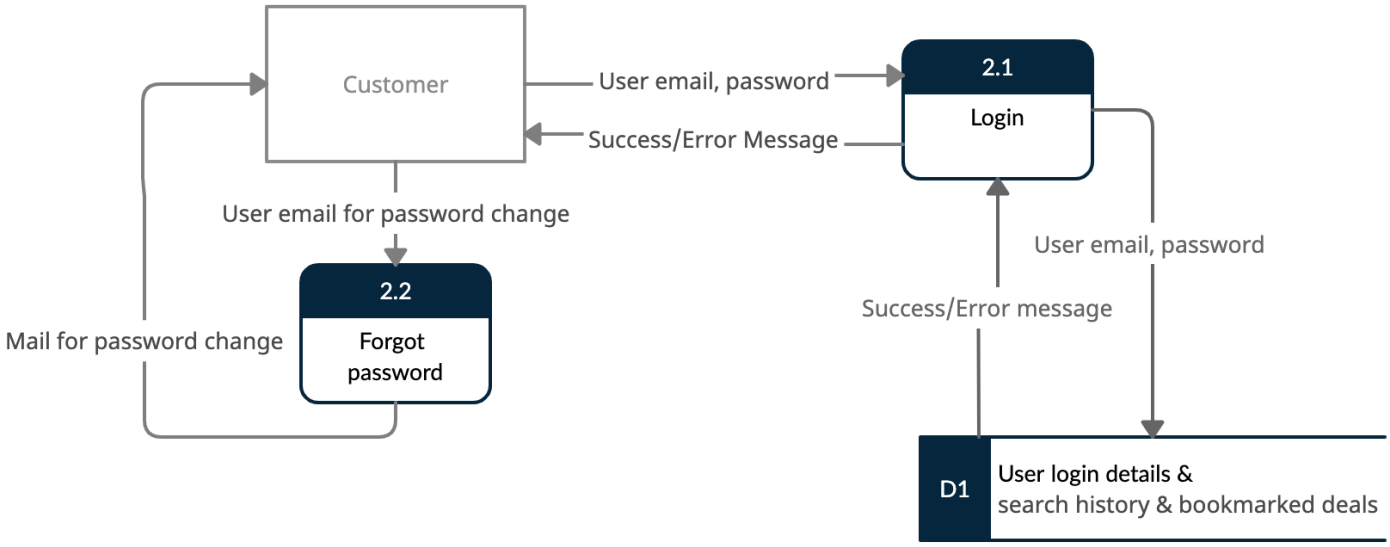
LEVEL-1



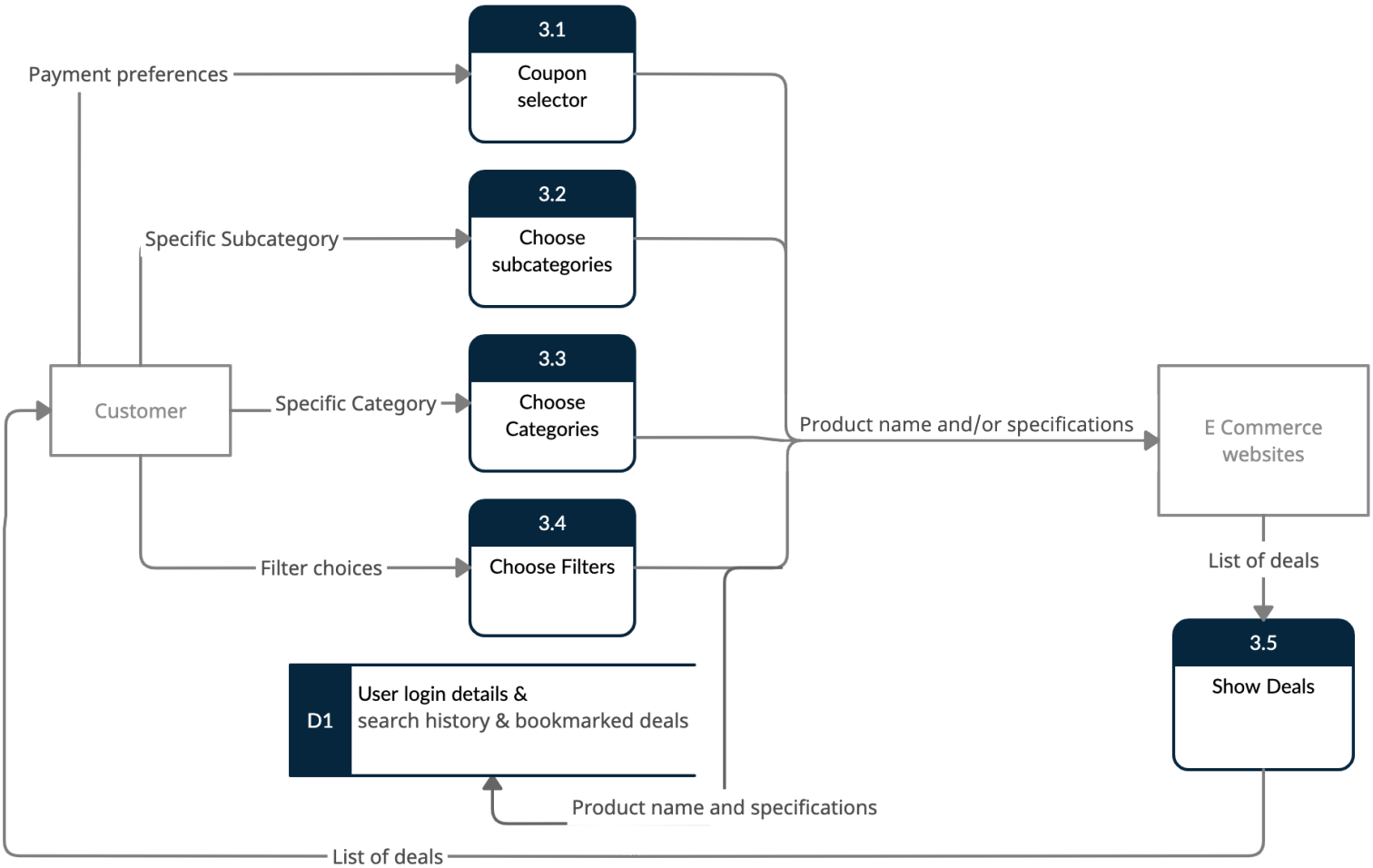
L2, Process 1: Customer Registration



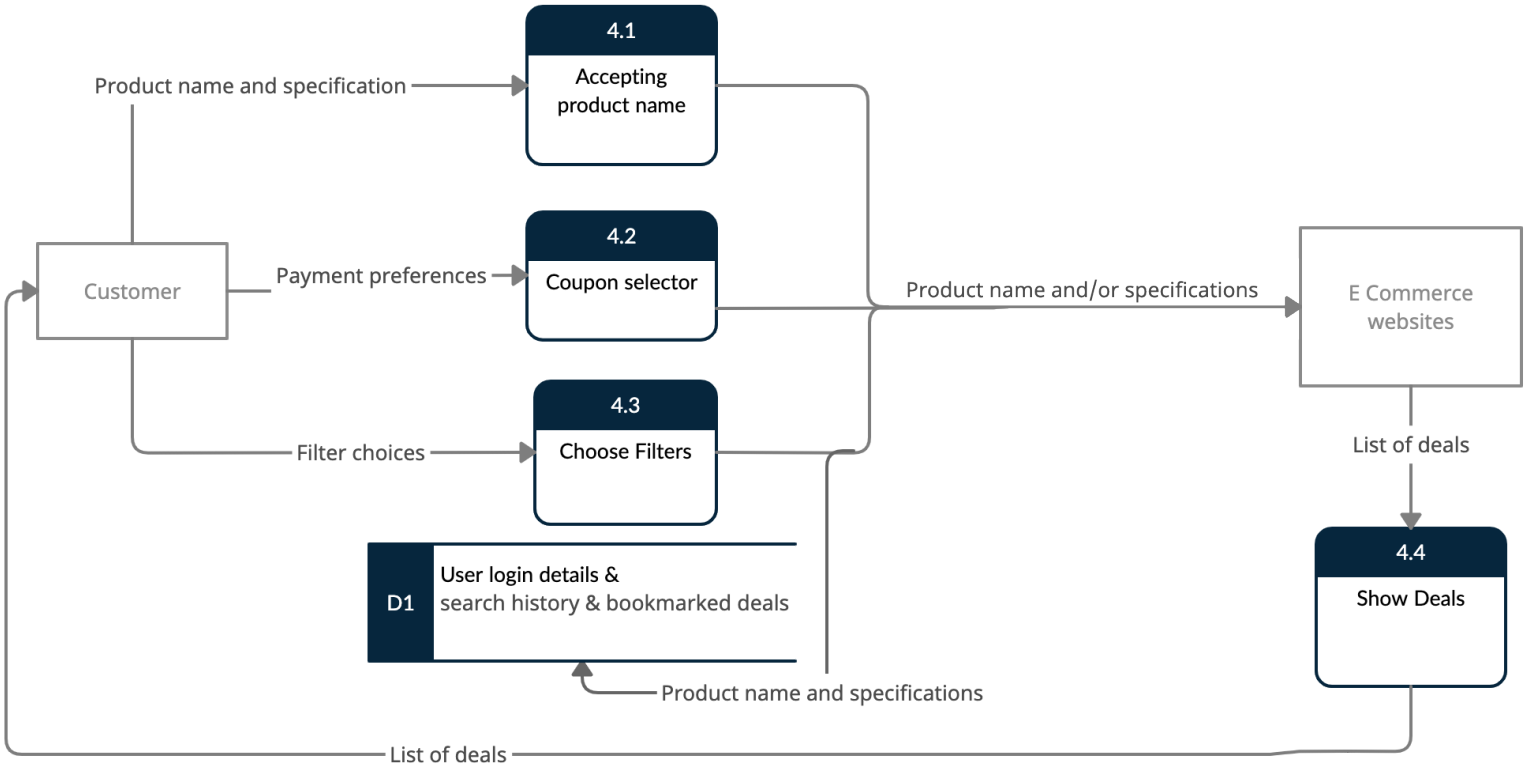
L2, Process 2: Customer Login



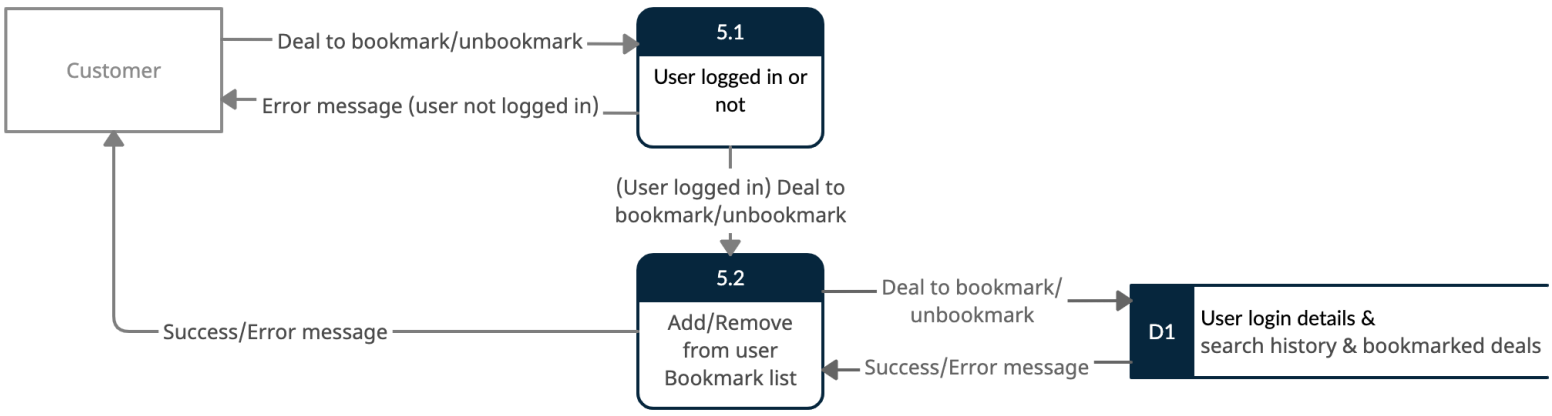
L2, Process3: Browse by category



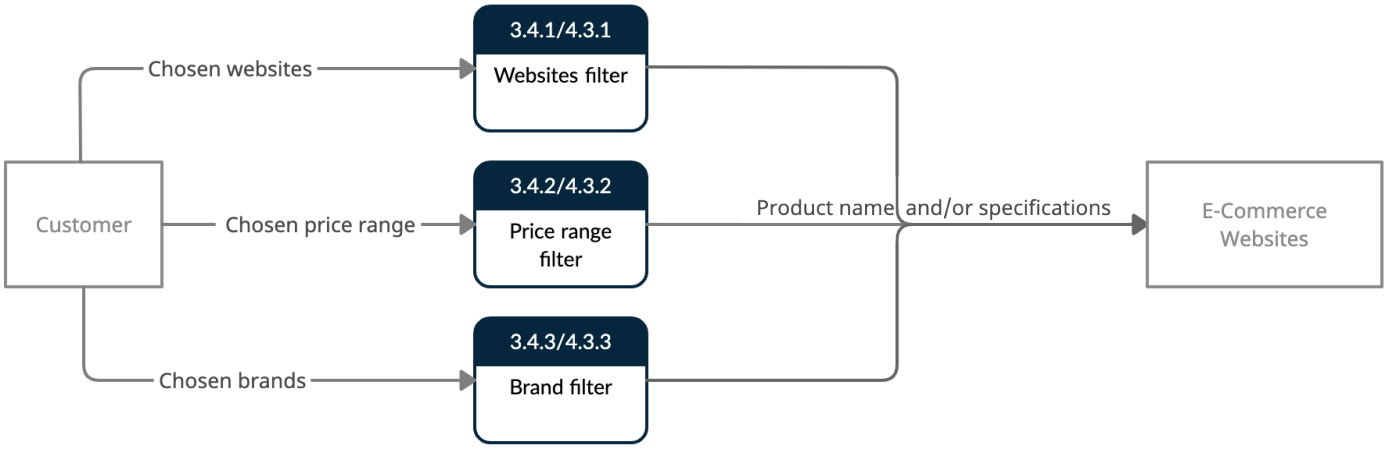
L2, Process4: Browse by product name



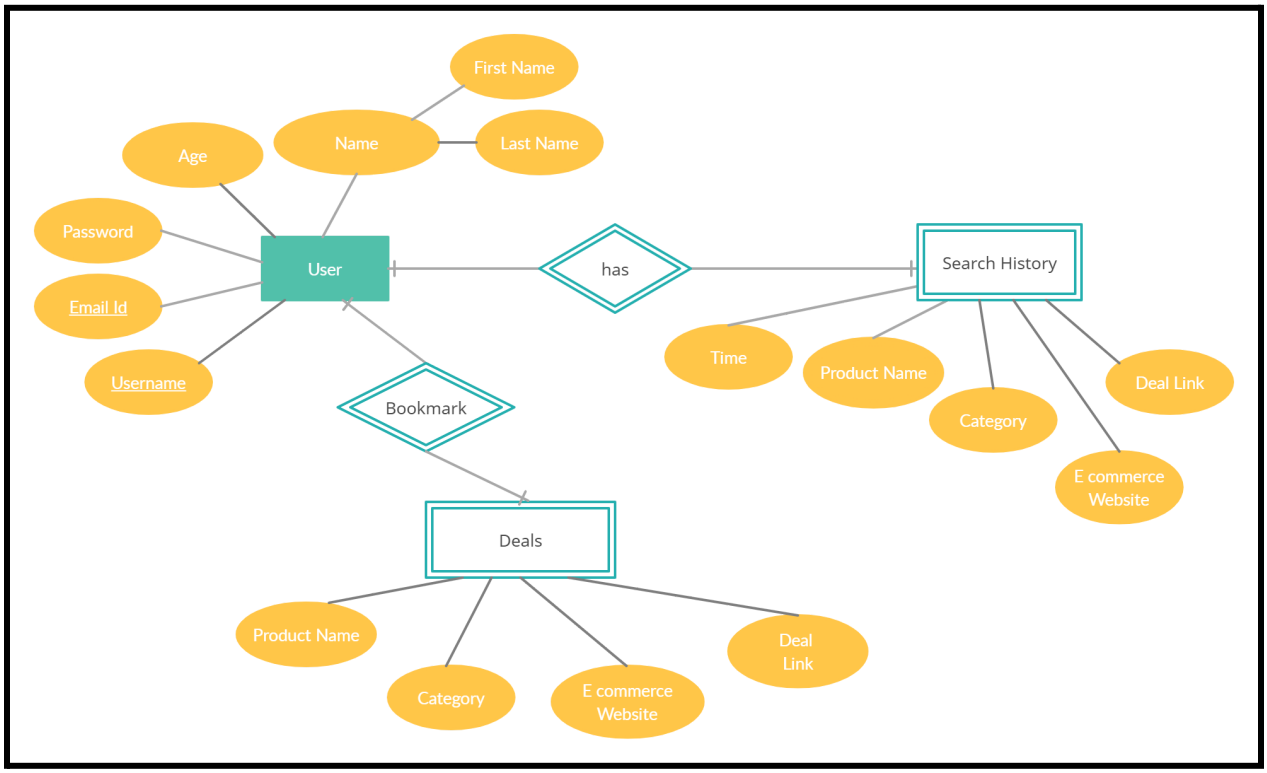
L2, Process5: Bookmark Deal



L3 Choose Filters:



Entity-Relationship DIAGRAM



USABILITY DOCUMENT:

1. **Strive for consistency-**
    a. **Internal Consistency :** This is the combination of both visual and functional consistency in your product design. It improves the usability and learnability of the product. The functions that are similar throughout the dfd like the show deals, filter functions have been used in different modules for the same task and are kept consistent in their task. The data flow, usage and the names remain the same for easy understandability.
    b. **External Consistency :** As we know it is important to remain consistent with general E-commerce features to maintain external consistency. For that we have filters such as sort by price, browse by categories, options for bookmarking and availability of products by location which will help users conveniently select deals according to their needs.

2. **Universal usability :** Search history and bookmark deals option will let users directly proceed to buying a product or relook at prices for products they found interesting facilitating a quicker way to find and select deals.

3. **Offer Informative feedback:** We have ensured that all the functions have informative output to the users at all points. Each module ensures an output like a list of deals or in case of errors a message regarding the same is displayed to the user. During searching a deal, after every user action either error feedback or a new page will be displayed ensuring that the user has an idea of its actions being processed/handled properly.

4. **Design dialogues to yield closure:** The various modules in our design have been divided into functions for more user interaction and success/error messages. Such as keeping high level functions like browse by categories, filters which subdivides into low level functions like browse by subcategory accompanied by dynamic filter functions that are specific to the type of product.

5. **Offer error prevention and simple error handling :** incase of error messages shown will be simple and the user will be prompted on how to proceed without error easily. The login module provides a forgot password utility function that sends a mail to the registered user for changing the password. In case of authentication failure, a message for incorrect login details will be prompted. Every user will have a unique email id, and duplicate email id errors will be prompted during registration.

6. **Permit easy reversal of actions :** The user will be allowed to undo most actions in the interface using a simple stack and "back" feature on every point. We have designed bookmark/unmark features on deals, which will provide flexibility to users for easy undo/redo of selected deals. We have incorporated filter functions in multiple layers and subcategories, such that users can easily permute between various choices to buy products.

7. **Keep users in control:** While browsing upon deals users will have the flexibility to search by product name like any E-commerce website rather than forcing them to go through the strenuous task of choosing categories, subcategories and filters. Thus providing users full ownership on their way of finding deals.

8. **Reduce short term memory load :** To reduce the need to remember, by the user. We have designed bookmark deals and search history procedures, which would help the user to keep track of its previous searches, and save interesting deals for later usage.

DESIGN JUSTIFICATION

COUPLING

Control Coupling –
The **user Login module** will set the universal flag of whether the user is logged-in (is_logged_in). The **Browse by product name module** maintains search history and the **Bookmark deal module** saves bookmarked deals for each user in the user data store. These two functionalities are only available for logged-in users. Thus, the flag is_logged_in will be used in these modules.

Content Coupling –
The filter function and coupon application functions are the same in **Browse by category module** and the best **Browse by product name.** The code of these functions will be shared between these modules.

Data Coupling –
In our design data coupling has been minimized to zero.

COHESION

Logical –
The functions of the **Browse by category** and **Browse by product name** modules all display the required list of deals and hence perform similar functions. The task performed by each of them alters the list using some criteria like - user search, filter choices, coupons used but the basic functionality logically is to create a list of deals for display to the user.

Communication –
The functions update the **user data store** whenever deemed necessary and this data store is shared by all functions in each module.The customer registration updates the data store with the new users while the login function then uses the data store to verify registered customers. The browse by product name results are updated as the user search history and on the user's choice we update the list of bookmarked deals in the data store.

Sequential –
In **user registration** and **user login** modules user information (like username, email id, password) and verification details(success/error message) are passed between functions.

Temporal –

In **Browse by category** module categories, subcategories, payment methods could be selected within the same time span to generate appropriate product specifications to get the required list of deals. In **Choose filters** module websites filter, price range filter and brand filter functions will be initiated during the same time span to filter out the best deals of our choice.

Procedural –

In **Browse by category** module categories, subcategories, payment methods all work for the same process that serves the purpose of giving specifications to the E-commerce websites so that appropriate data can be scraped.

Similarly **Browse by product name** module accepts product name, payment methods,choose Filters all work for the same process that serves the purpose of giving specifications to the E-commerce websites so that appropriate data can be scraped.

We have tried to achieve low coupling and high cohesion in our design.