Now, can you write the description of (1) the components of the system (2) the flow in the system (what user-input and response sequence), and (3) the technologies (eg. MySQL for the database, Apache server, C# code, etc).

1) The components of the system:

**Client Browser:**

It could be any web-browser that user is using to communicate with the website. (In future this can be a mobile app)

**Web application:**

It contains 3 major projects.

1. ShopHop web project:
   1. This is a asp.net web project which will contain most of UI work.
2. ShopHotEntities:
   1. This is a C# class library project and will contain Model classes, which can be used to communicate with database using EntityFramework.
3. WebParser:
   1. This is standalone c# class library which will have HTML Parser, Walmart Parser, BestBuy Parser, Target Parser, etc. to be used by web project to search for products on retail websites.

**SQL Database:**

This is where the search results can be stored temporarily to make search faster. Indexing can be implemented to make it even better.

**Public websites:**

This component is nothing but public retail websites where the parser will search for the products and its details.

(2) The flow in the system (what user-input and response sequence):

Following is the sequence of a search query on ShopHopper web portal.

1. User enters any product name in the search box.
2. User clicks search button.
3. The request is made to the server along with the product name that the user entered. The server will validate the product name and will complain if the name is invalid or empty.
4. If the name is validated, the server will check if the search result is available in the database or not. If not the server will parse major retailer’s websites such as Walmart, BestBuy and Target, for the product to search for prices, else will simply retrieve the results from the database.
5. The results will be consolidated and will be stored in a database for 1 hour. So that any other user searches for the same product name, the server will not parse the websites again and rather simply display the results right from the database.
6. The results are then displayed on ShopHopper webpage along with Thumbnail, full name, price and store name.
7. The user clicks on sort by Price button.
8. The results are sorted by price from low to high.
9. The user clicks on sort by Most Relevant button.
10. The results are sorted by most relevant search based on search queries.
11. The user clicks on search by Store button and selects stores.
12. The results are displayed by store and only for the ones selected.
13. The user clicks anywhere a product tile.
14. The user is navigated to the store providing that price.

3) Technologies:

**Asp.net:** We are using ASP.NET for frontend development.

**C#:** For backend development

**HTML agility pack:** A nugget package, used in our parsers to parse and retrieve meaningful information from retailer’s website.

**Entity framework:** To communicate with Database for model-controller interaction, and work effectively with asp.net website.

**MySQL database:** To store search results in database for 1 hour. MySQL is a light database hence we take advantage of the performance, as our model is not so huge.