

Assignment #4

Due Date: 11/8/20 by 11:59pm

Deliverable:

- Use the object-oriented design principles and utilize the MVC architecture discussed in the class to produce an object-oriented web-based enterprise application that is reusable, flexible, and extensible.
- Use **Servlets** to implement the functionalities listed below.
- Record 10 minutes demo of your assignment's run using screencast. The tool can be downloaded from this URL <http://screencast-o-matic.com/home>
- Capture most important 10 screen-shots of your output and save them in a file called output.pdf
- All source code and byte code shall be submitted.
- Readme text file that illustrates how to compile/install/run your application
- Post your homework as a single zipped file on Blackboard with the name "HW4_YourLastName,FirstName"

Important Notes:

- NO IDE to be used in any shape/form in the implementation of this assignment
- Do NOT communicate or share your assignment with others

High-Level Requirements:

Extend Assignment#3 to add the following features:

1. **Search Auto-Completion**
2. **Graph database**

Required Functionalities

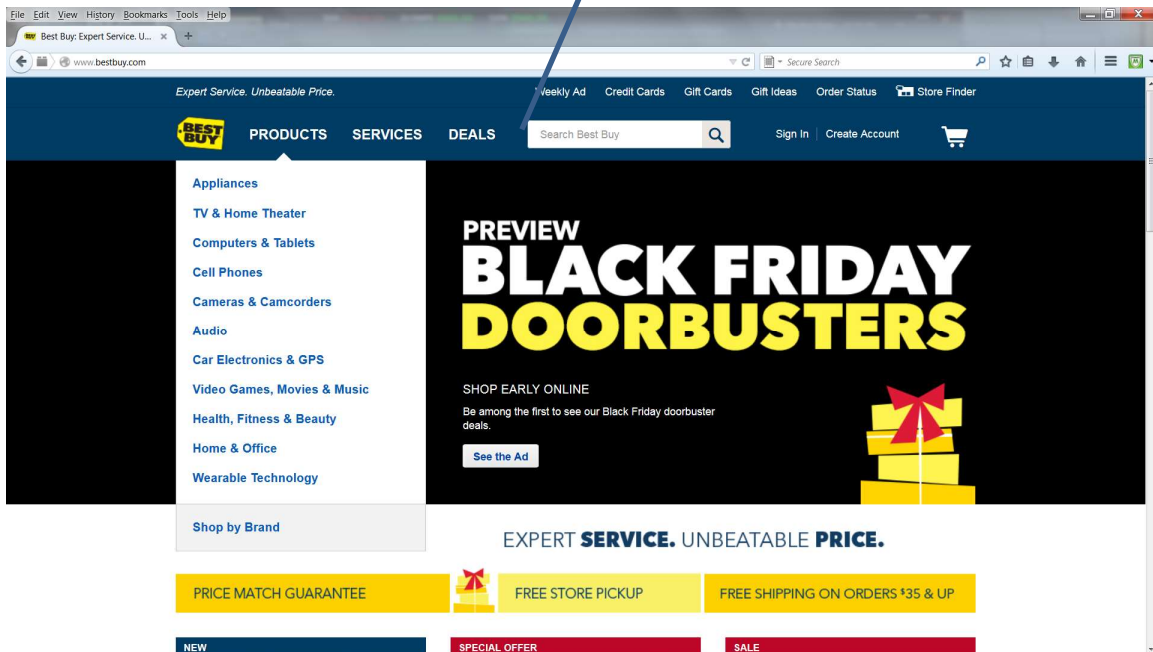
Search Auto-Completion:

See below an illustration for a screen-shot of BestBuy web site for the **Search Auto-Completion** feature

- Your auto-complete-feature must be implemented as follows:
When the app-server starts up, the **Products** are first read into a hashmap from **ProductCatalog.xml** file and then stored in MySQL database; follow this sequence.
- Since a store manager can insert/update/delete products, all of these operations must be reflected in the hashmap and then MySQL database
- All new code added for the auto-complete-complete feature shall be placed in a class called AjaxUtility.java

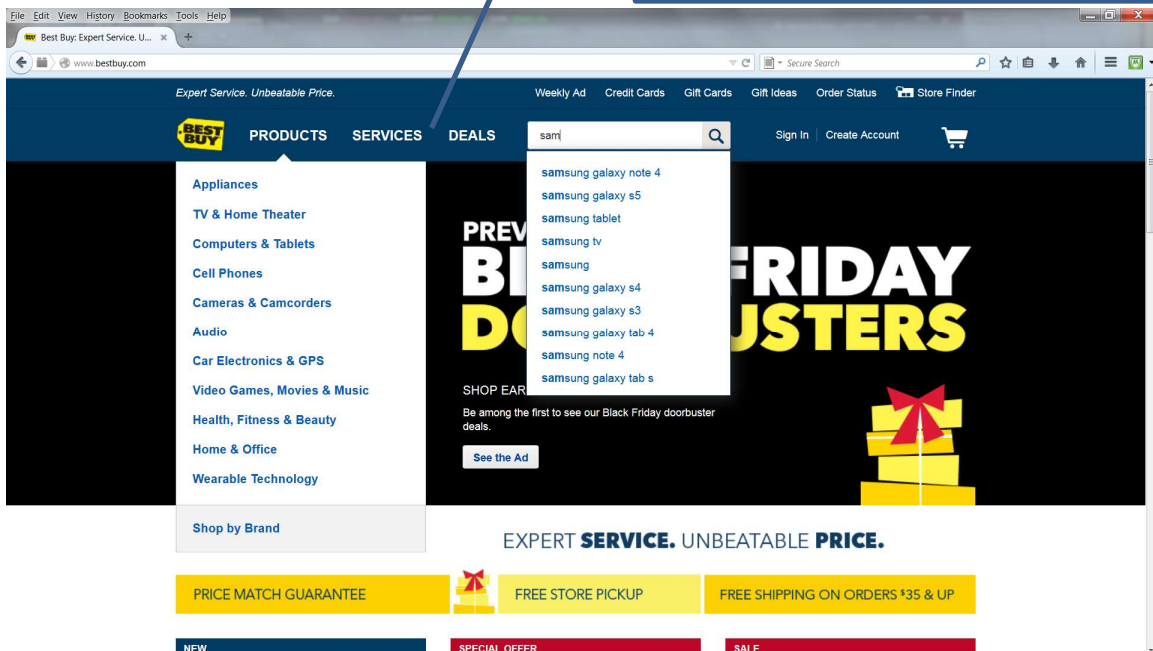
1

Textfield is available for users to enter search keywords



2

Once the user starts typing search keyword, a table of potential keyword-matches will be displayed



Graph database:

Create a new table in MySQL with the name transactions that has the field names listed in the attached CSV file. You must produce at least 30 transactions. Use random values for expected and actual deliver dates, transaction status, order returned. Every time a customer places an order a new transaction is created and inserted in the transactions table.

Create a CSV file for the Transactions table in MySQL and build the Graph database application in Neo4J database engine.

Consider the following Labels for the Nodes:

- Customer
- Product
- Manufacturer
- Order
- Delivery
- Delivery_ZIP_CODE
- etc.

Consider the following Types Relationship Types

- PLACED_ORDER
- HAS_DELIVERY
- MANUFACTURES
- etc.

Write Cypher code to produce the output for the following:

1. Get the number of transactions that were NOT delivered on time for every Delivery Zip Code
2. Get the number of disputed transactions and the list of customer names for these disputed transactions for Delivery Zip Code
3. Get the number of disputed transactions for EVERY CUSTOMER that has more that one disputed transaction
4. Get the top 3 customers that reported the maximum number of returned orders
5. Get the number of returned orders and got review rating 1 for every product category in every Delivery Zip Code