

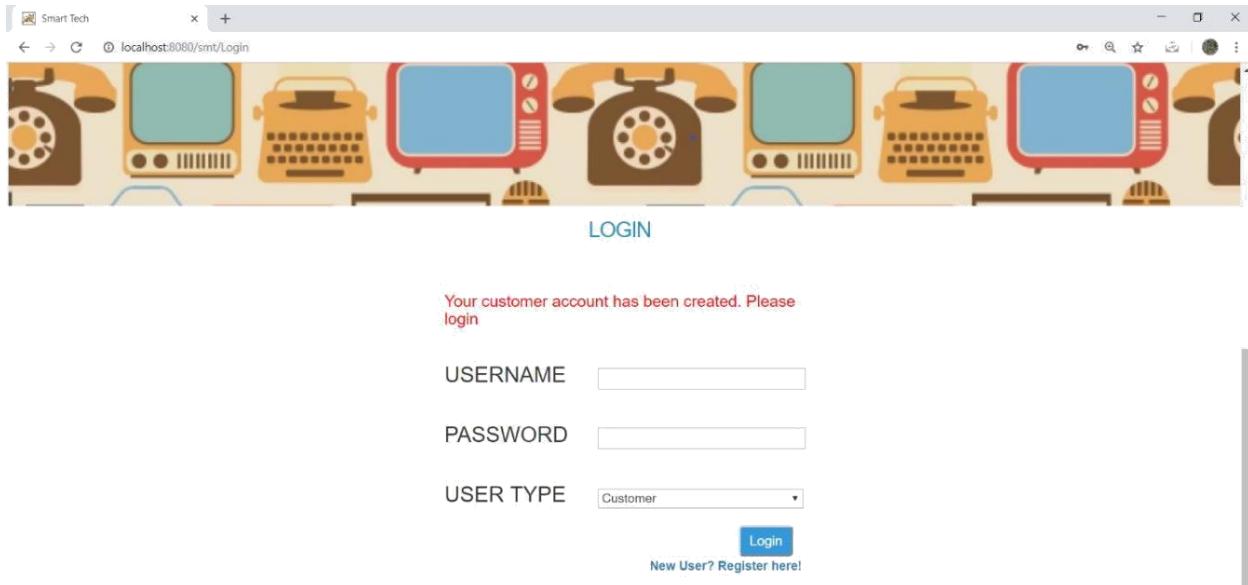
Smart Portables

1. Home page: registration & login

The screenshot shows a Windows desktop environment with two browser windows open. Both windows display the URL localhost:8080/smt/Signup.

The top window shows the homepage of "SMART TECH". The header features a red background with the text "SMART TECH" and "WELCOME TO MY WEBSITE!". Below the header is a navigation bar with links: HOME (highlighted in orange), WEARABLE TECHNOLOGY, PHONES, LAPTOPS, VOICE ASSISTANT, TRENDING, VIEWORDER, LOGIN, and VIEWCART(0). The main content area has a background pattern of various vintage electronic devices like cameras, radios, and telephones. A search bar at the bottom left contains the placeholder "Type here to search". The taskbar at the bottom shows several pinned icons.

The bottom window shows a registration/login form. It includes fields for "USERNAME" (NIKITA JADHAV), "PASSWORD", "RE-PASSWORD", "USER TYPE" (Customer), and a "Create User" button. The background of this window also features the same vintage electronic device pattern. The taskbar at the bottom of this window is identical to the one above.

A screenshot of the MySQL Workbench application. The interface includes a toolbar at the top, a search bar, and a status bar indicating the date and time. The main window has several panes: a 'Navigator' pane on the left listing management, instance, performance, and schema sections; a 'SQL Editor' pane containing a query editor with the following SQL code:

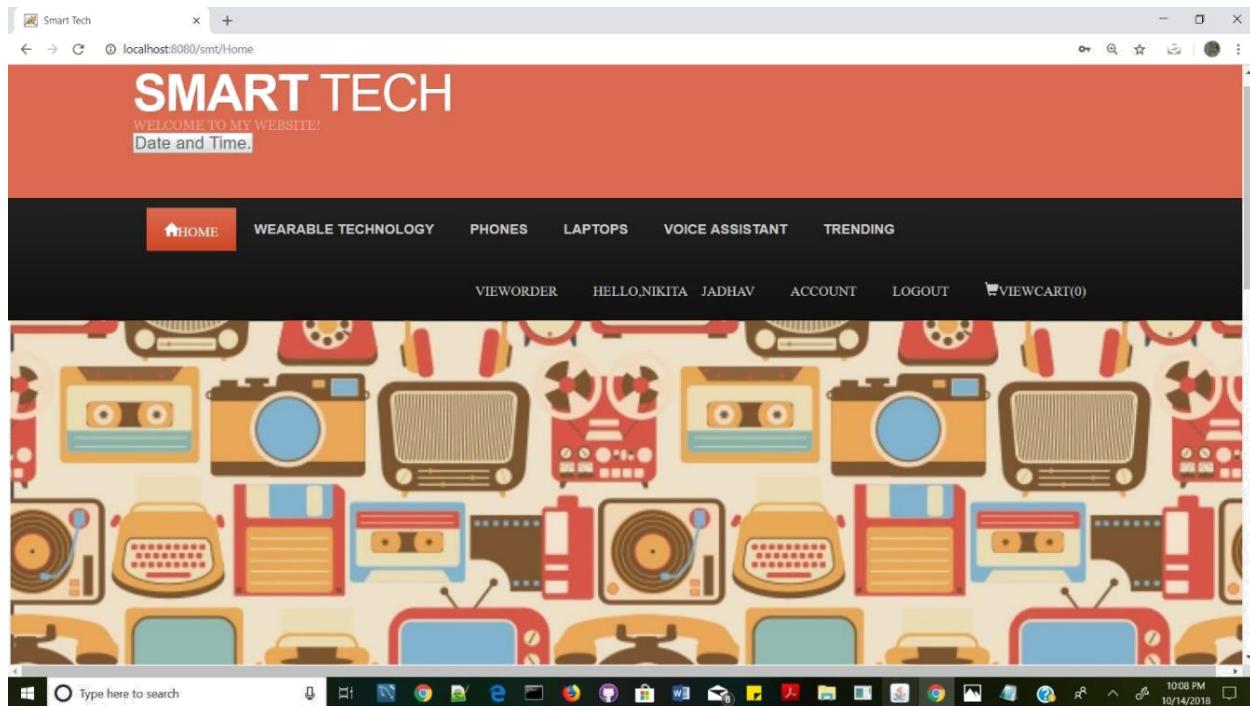
```
use smarttechdb;
select * from registration;
select * from Productdetails;
select * from customerorders;
select * from product_accessories;
```

and a 'Result Grid' pane showing the results of the first query, which lists four user records with columns: username, password, repassword, and usertype. The results are:

username	password	repassword	usertype
SHRI	1234	1234	manager
SHANE	1234	1234	retailer
hari	1	1	manager
DS	1	1	customer
NIKITA JADHAV	12345	12345	customer

The 'Information' pane shows the schema 'exampledatabase' with tables 'productdetails', 'customerorders', and 'product_accessories'. The 'Action Output' pane at the bottom displays the execution history of the queries.

2. Purchasing the item & placing the order



A screenshot of the Smart Tech website's ViewCart page. The header and sidebar are identical to the homepage. The main content area features a "VIEWCART(3)" heading above a table showing three items: Samsung Note8, DELL Newest 7000 Series Premium Inspiron, and Portable Laptop Stand. The total amount is listed as ₹392.8899999999999. A "CheckOut" button is at the bottom right of the table. The footer contains the copyright notice "©2018 SMART TECH by Nikita V. Jadhav".

Smart Tech localhost:8080/smt/CheckOut

ORDER

Customer Name:	NIKITA JADHAV
Product Purchased:	Samsung Note8
Product Price:	604.9
Product Purchased:	DELL Newest 7000 Series Premium Inspiron
Product Price:	698.99
Product Purchased:	Portable Laptop Stand
Product Price:	89.0
Total Order Cost	1392.8899999999999

Credit/accountNo

Customer Address

Type here to search

Smart Tech localhost:8080/smt/Payment

ORDER

YOUR ORDER IS STORED
YOUR ORDER NO IS 2

Estimated delivery date: 10-28

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Type here to search

3. SQL database showing the orders placed by the customers & customers can even cancel the order

The screenshot shows the MySQL Workbench interface. In the SQL Editor (SQL File 4), the following SQL code is run:

```

1 use smarttechdb;
2 select * from registration;
3 select * from Productdetails;
4 select * from customerorders;
5 select * from product_accessories;

```

The Results Grid displays the data from the 'customerorders' table:

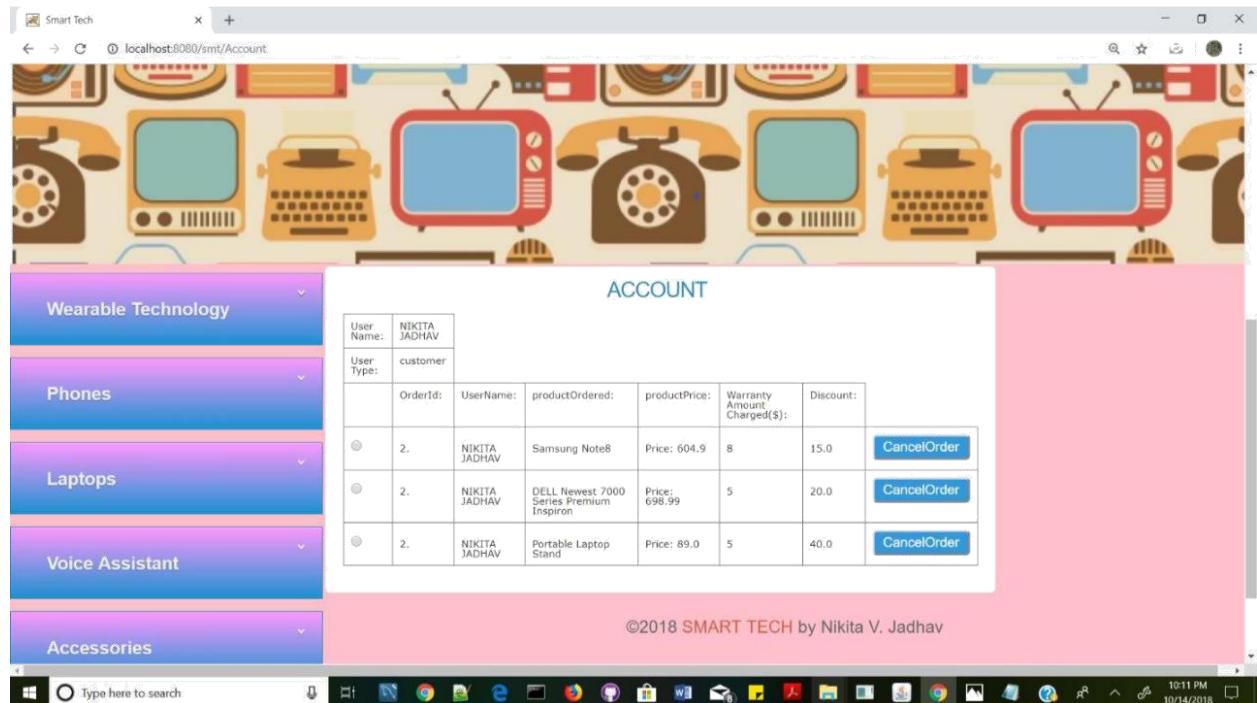
orderId	username	orderName	orderPrice	userAddress	creditCardNo	discount	warrantyamt
1	DS	HP Pavilion Gaming Laptop	798.6	Chicago	2131321	15	5
2	NIKITA JADHAV	Samsung Note8	604.9	Chicago,IL	123453238462	15	8
2	NIKITA JADHAV	DELL Newest 7000 Series Premium Inspiron	698.99	Chicago,IL	123453238462	20	5
2	NIKITA JADHAV	Portable Laptop Stand	89	Chicago,IL	123453238462	40	5

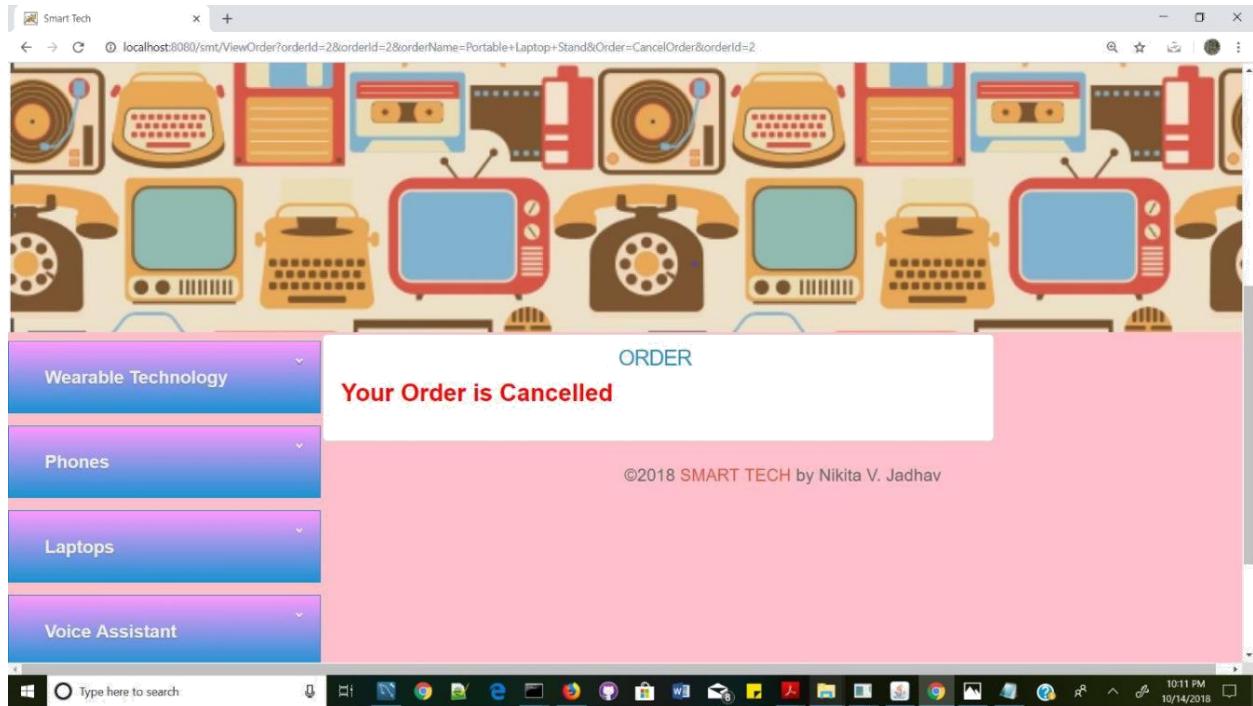
The Output pane shows the execution log:

```

registration 69 Productdetails 70 customerorders 71 x product_accessories 72
# Time Action Message Duration / Fetch
90 22:07:23 select * from registration LIMIT 0, 1000 6 row(s) returned 0.000 sec / 0.000 sec
91 22:07:23 select * from Productdetails LIMIT 0, 1000 1000 row(s) returned 0.000 sec / 0.000 sec
92 22:07:23 select * from customerorders LIMIT 0, 1000 1 row(s) returned 0.000 sec / 0.000 sec
93 22:07:23 select * from product_accessories LIMIT 0, 1000 455 row(s) returned 0.000 sec / 0.000 sec
94 22:09:48 use smarttechdb 0 row(s) affected 0.000 sec
95 22:09:48 select * from registration LIMIT 0, 1000 6 row(s) returned 0.000 sec / 0.000 sec
96 22:09:49 select * from Productdetails LIMIT 0, 1000 1000 row(s) returned 0.016 sec / 0.000 sec
97 22:09:49 select * from customerorders LIMIT 0, 1000 4 row(s) returned 0.000 sec / 0.000 sec
98 22:09:49 select * from product_accessories LIMIT 0, 1000 455 row(s) returned 0.000 sec / 0.000 sec

```





The screenshot shows the MySQL Workbench interface. The left sidebar contains navigation sections for MANAGEMENT, INSTANCE, PERFORMANCE, and SCHEMAS. The SCHEMAS section shows the 'exampledatabase' schema with tables 'mydb', 'sakila', and 'smarttechdb'. The 'smarttechdb' table has two rows: one for a Samsung Note8 and another for a DELL Newest 7000 Series Premium Inspiron. The central pane displays a SQL editor with the following query:

```
use smarttechdb;
select * from registration;
select * from Productdetails;
select * from customerorders;
select * from product_accessories;
```

Below the SQL editor is a Result Grid showing the data from the four selected tables:

orderId	username	orderName	orderPrice	userAddress	creditCardNo	discount	warrantyamt
1	DS	HP Pavilion Gaming Laptop	798.6	Chicago	2131321	15	5
2	NIKITA JADHAV	Samsung Note8	604.9	Chicago,IL	123456238462	15	8
2	NIKITA JADHAV	DELL Newest 7000 Series Premium Inspiron	698.99	Chicago,IL	123456238462	20	5

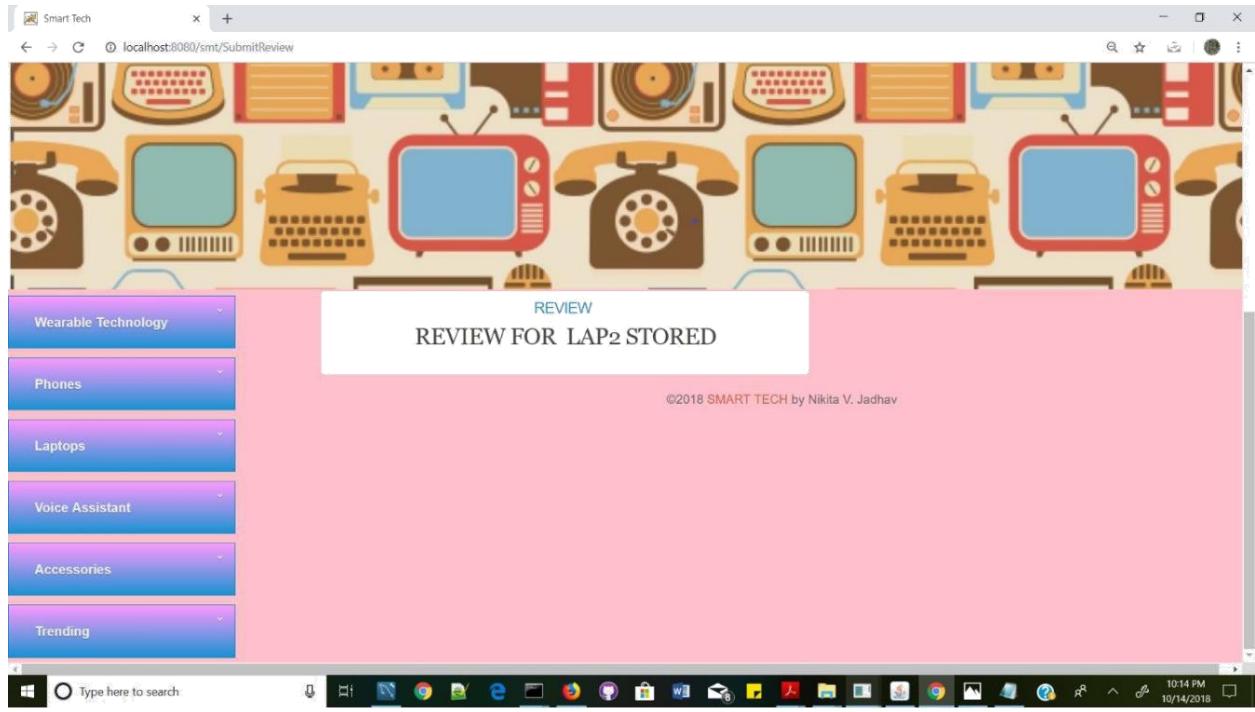
At the bottom of the central pane, the Action Output shows the execution details for each query:

Action	Time	Message	Duration / Fetch
95 22:09:48 select * from registration LIMIT 0, 1000		5 row(s) returned	0.000 sec / 0.000 sec
96 22:09:49 select * from Productdetails LIMIT 0, 1000		1000 row(s) returned	0.016 sec / 0.000 sec
97 22:09:49 select * from customerorders LIMIT 0, 1000		4 row(s) returned	0.000 sec / 0.000 sec
98 22:09:49 select * from product_accessories LIMIT 0, 1000		455 row(s) returned	0.000 sec / 0.000 sec
99 22:11:46 use smarttechdb;		0 row(s) affected	0.000 sec
100 22:11:46 select * from registration LIMIT 0, 1000		6 row(s) returned	0.000 sec / 0.000 sec
101 22:11:46 select * from Productdetails LIMIT 0, 1000		1000 row(s) returned	0.031 sec / 0.000 sec
102 22:11:46 select * from customerorders LIMIT 0, 1000		3 row(s) returned	0.000 sec / 0.000 sec
103 22:11:46 select * from product_accessories LIMIT 0, 1000		455 row(s) returned	0.016 sec / 0.000 sec

4. Customers can write the product reviews and other customers can view the reviews posted

The screenshot shows a web browser window titled "Smart Tech" with the URL "localhost:8080/smt/LaptopList?creator=dell". The page features a sidebar on the left with categories: Wearable Technology, Phones, Laptops, Voice Assistant, Accessories, and Trending. The main content area displays three Dell laptop models: DELL 5000 SERIES (629.99\$), DELL NEWEST 7000 SERIES PREMIUM INSPIRON (698.99\$), and DELL INSPIRON 5000 (649.99\$). Each model has a thumbnail image, price, and three buttons: "Buy Now", "WriteReview", and "ViewReview". The footer contains the copyright notice "©2018 SMART TECH by Nikita V. Jadhav". The taskbar at the bottom shows various application icons.

The screenshot shows a web browser window titled "Smart Tech" with the URL "localhost:8080/smt/WriteReview". The sidebar on the left is identical to the previous screenshot. The main content area is a "REVIEW" form. The form fields include:
Product Name: lap2
Product Type: laptops
Product Maker: null
Review Rating: 4 ★
Review Date: 10/03/2018
Retailer Zip: 60616
Retailer Name: Shane
Retailer City: Chica
Retailer State: IL
Product On Sale: HP
User Id: 12
User age: 22
Gender: male
Occupation: CS
Discount: 15
Retailer Zip: 60616
A "SubmitReview" button is at the bottom of the form. The taskbar at the bottom shows various application icons.



A screenshot of a terminal window titled "C:\Program Files\MongoDB\Server\3.0\bin\mongo.exe". The command "db.myReviews.find()" is typed into the terminal. The terminal window has a black background. The system tray at the bottom shows the date and time as 10:15 PM on 10/14/2018.

```
C:\Program Files\MongoDB\Server\3.0\bin\mongo.exe
> db.myReviews.find()
```

```
C:\Program Files\MongoDB\Server\3.0\bin\mongo.exe
{
  "_id": ObjectId("5bc3fefc4cd6df48b01fd8a8"),
  "reviewText": "good",
  "retailerpin": "60619"
},
{
  "_id": ObjectId("5bc3fefc4cd6df48b01fd8a8"),
  "title": "myReviews",
  "userName": "NIKITA",
  "productName": "lap1",
  "productType": "laptops",
  "productMaker": "null",
  "reviewRating": "4",
  "reviewDate": "2018-10-12",
  "reviewText": null,
  "retailername": "HP",
  "retailerpin": "60616",
  "retailercity": "Chica",
  "retailerstate": "IL",
  "productprice": null,
  "productsale": "HP",
  "age": "22",
  "userid": "12",
  "gender": "male",
  "occupation": "CS",
  "discount": "15"
},
{
  "_id": ObjectId("5bc405f6c5d6df48b01fdab"),
  "title": "myReviews",
  "userName": "NIKITA JAOHAW",
  "productName": "lap2",
  "productType": "laptops",
  "productMaker": "null",
  "reviewRating": "4",
  "reviewDate": "2018-10-03",
  "reviewText": null,
  "retailername": "Shane",
  "retailerpin": "60616",
  "retailercity": "Chica",
  "retailerstate": "IL",
  "productprice": null,
  "productsale": "HP",
  "age": "22",
  "userid": "12",
  "gender": "male",
  "occupation": "CS",
  "discount": "15"
}
]
```

The screenshot shows a web application interface with a sidebar and three main content panels.

Left Sidebar:

- Wearable Technology
- Phones
- Laptops
- Voice Assistant
- Accessories
- Trending
- Top 5 Most Liked Products
- Top five zip-codes
- Top five most sold products

Content Panels:

- BEST PRODUCTS:**

xbox360	5
Wii	5
Samsung2	5
gh1	5
ga2	5
- MOST SOLD PRODUCTS BY ZIPCODE:**

60616	18
60619	1
60618	1
- MOST SOLD PRODUCTS:**

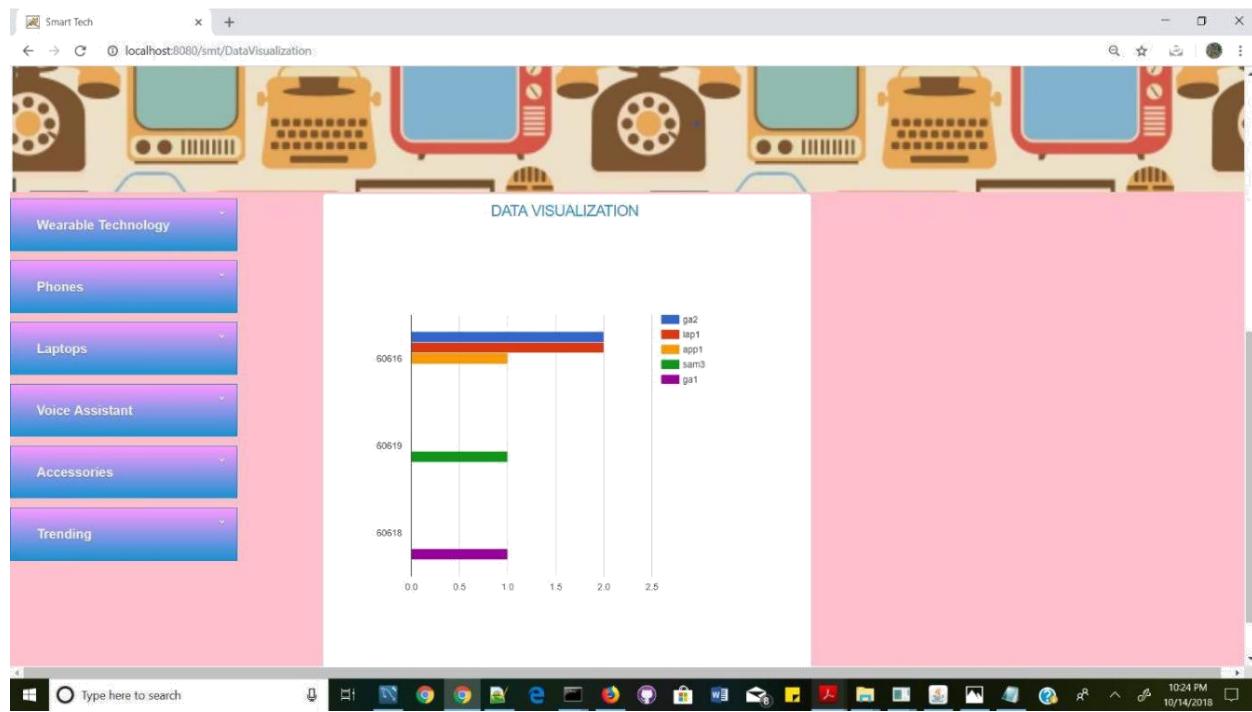
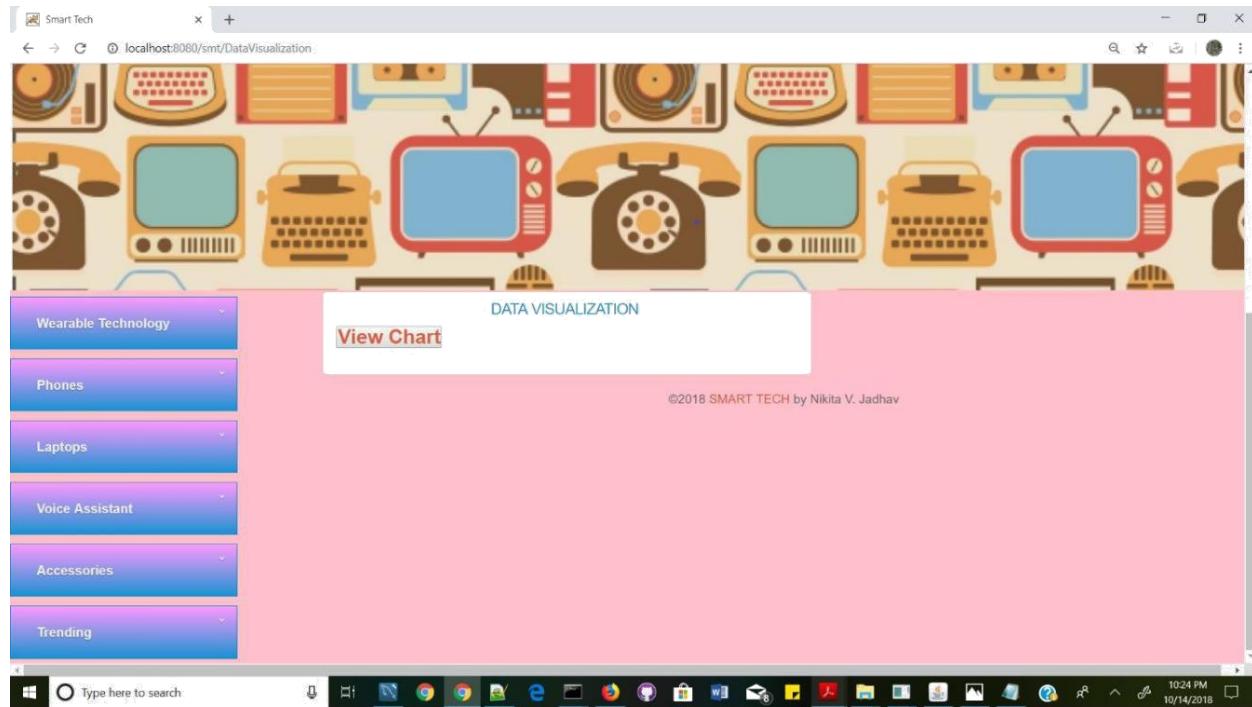
lap1	2
ga1	2
ga2	2
sam3	2
Wii	1

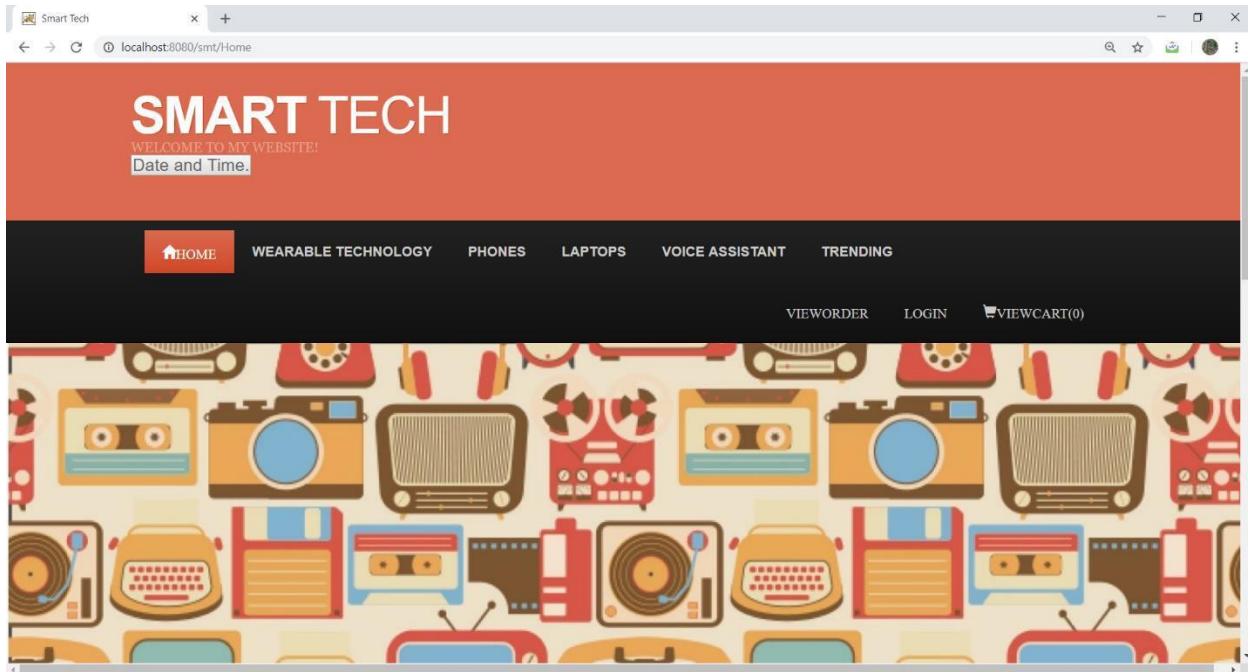
5. Trending items on the portal

The screenshot shows a web browser window titled "Smart Tech" with the URL "localhost:8080/smt/Trending?best". The page has a decorative header featuring various vintage electronic devices like radios, cameras, and tape recorders. On the left, there is a sidebar with several dropdown menu items: "Wearable Technology", "Phones", "Laptops", "Voice Assistant", "Accessories", "Trending" (which is currently selected), "Top 5 Most Liked Products", "Top five zip-codes", and "Top five most sold products". The main content area contains three sections: "BEST PRODUCTS" (listing "xbox360", "Wii", "Samsung2", "gh1", "ga2" all with a value of 5), "MOST SOLD PRODUCTS BY ZIPCODE" (listing "60616" (18), "60619" (1), "60618" (1)), and "MOST SOLD PRODUCTS" (listing "lap1" (2), "ga1" (2), "ga2" (2), "sam3" (2), "Wii" (1)).

This screenshot shows the same web browser window as the previous one, but with a different decorative header pattern featuring various vintage electronic devices like radios, cameras, and tape recorders. The sidebar and main content sections are identical to the first screenshot, displaying the "Trending" menu item and the "BEST PRODUCTS" section with the same data.

6. Data Visualization chart

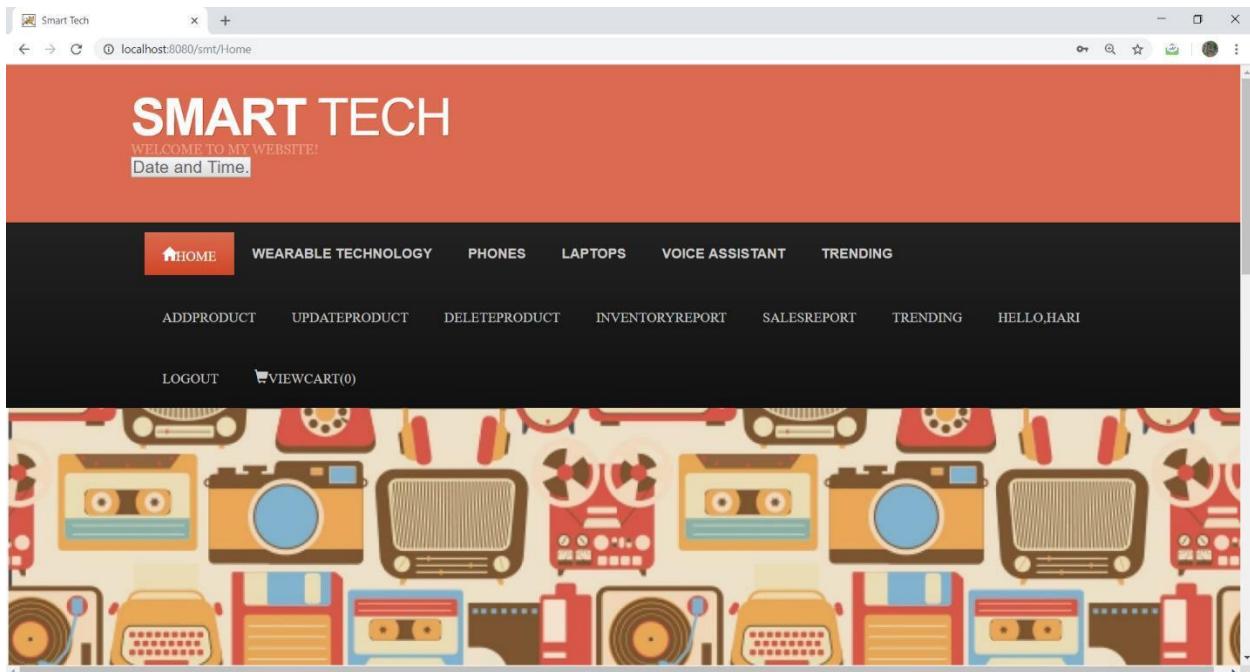




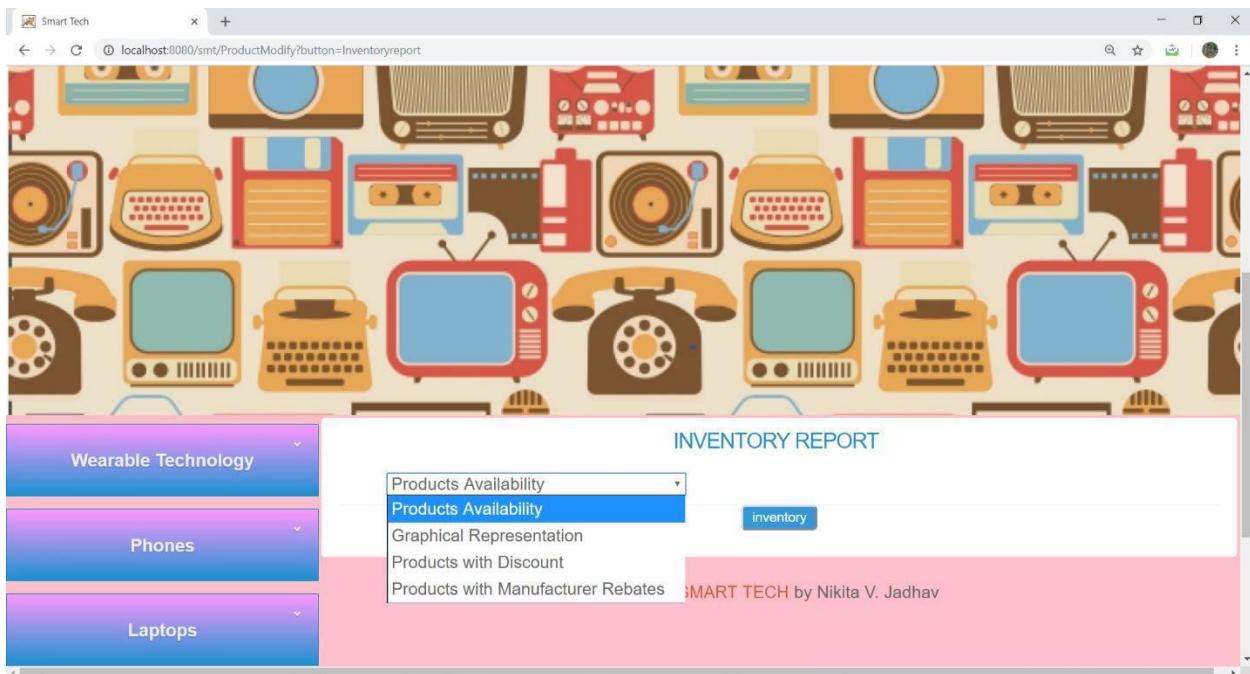
7. Login as Store Manager

A screenshot of a web browser showing the login page of the "Smart Tech" website. The title bar says "Smart Tech" and the address bar shows "localhost:8080/smt/Login". The page has a background pattern of vintage electronic devices. In the center, there is a "LOGIN" button. Below it are three input fields: "USERNAME" with the value "hari", "PASSWORD" with a masked value, and "USER TYPE" set to "Store Manager". There is also a "Login" button and a link "New User? Register here!". At the bottom of the page, a copyright notice reads "©2018 SMART TECH by Nikita V. Jadhav".

8. Inventory Report & Sales Report



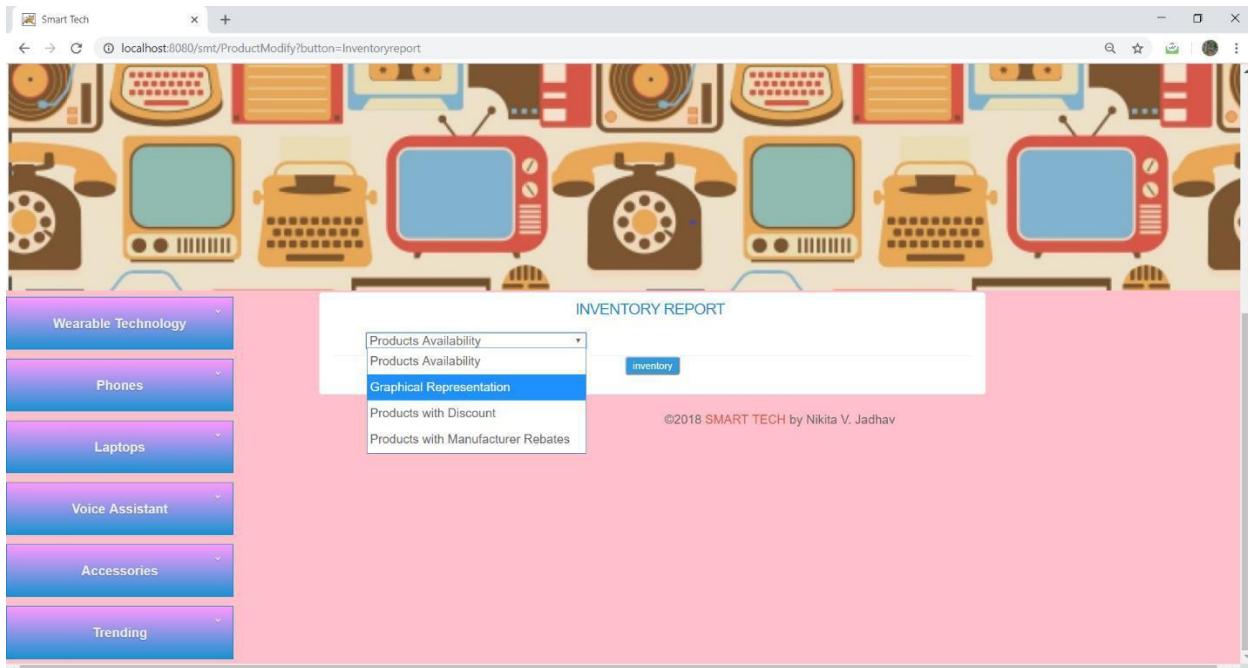
9. Inventory Report Showing Product Availability

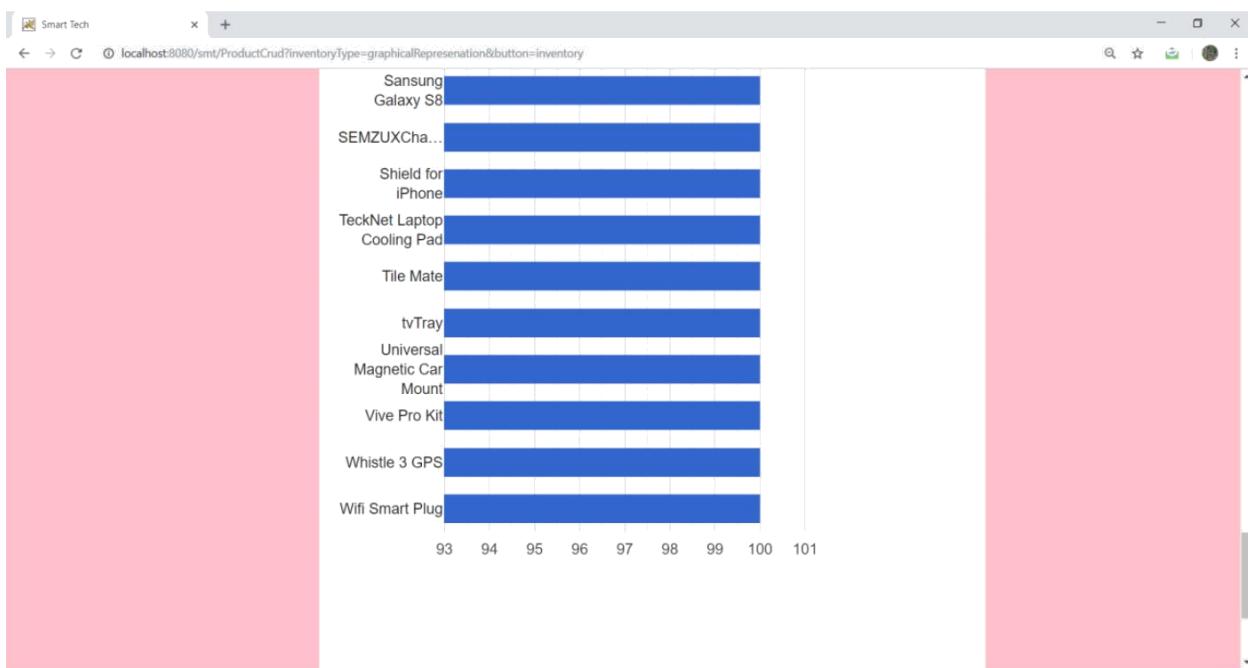


Smart Tech localhost:8080/smt/ProductCrud?inventoryType=productAvailability&button=inventory

Available Products			
Sr.No	Product Name	Product Price	Quantity Available
1.	12 Port extension	20.99	100
2.	Aconic Protective Cases	40.0	100
3.	All-new Echo Show (2nd Gen)	229.99	100
4.	Apple 13.3" MacBook Air	838.95	99
5.	Apple Ear Pods with Lightning connector	27.88	100
6.	Apple iPhone 7	359.99	99
7.	Apple iPhone 7Plus	519.98	100
8.	Apple iPhone8	642.0	100
9.	Apple iPhoneX	1176.0	94
10.	Apple MacBook Air Intel i5	499.0	100
11.	Apple MacBook Pro	486.0	100

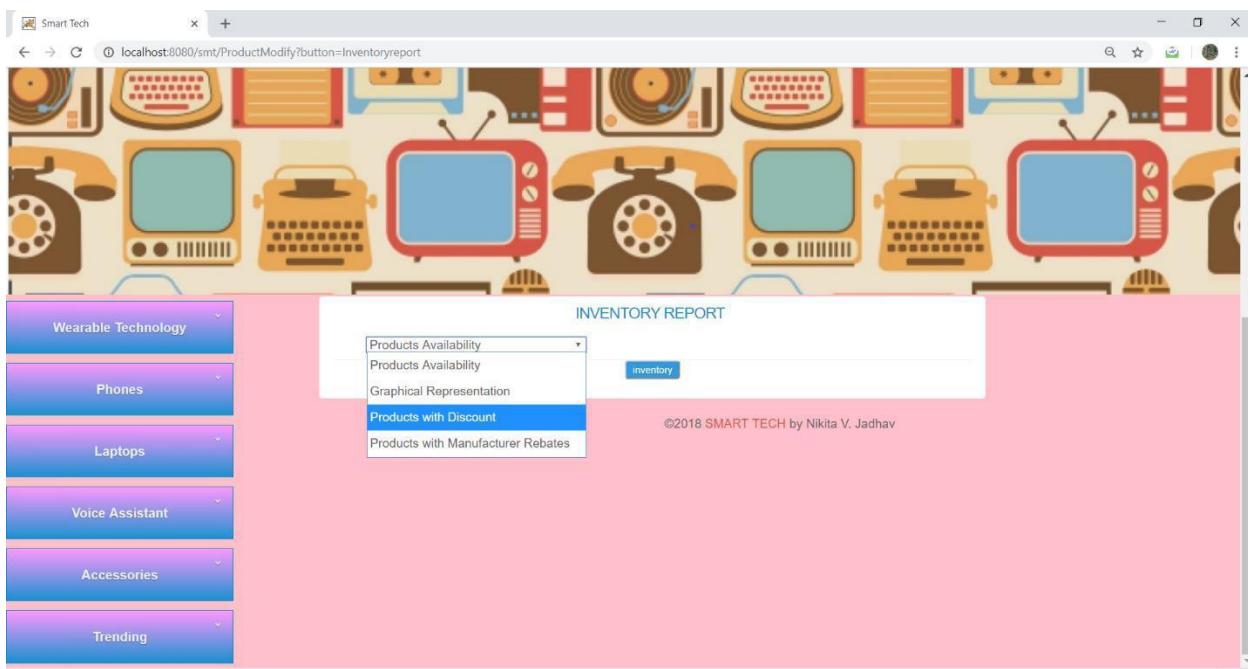
10. Inventory Report showing the bar chart for the product availability







11. Inventory Report Showing the products on sale



Smart Tech

localhost:8080/smt/ProductCrud?InventoryType=discountedProducts&button=inventory

Products on Sale!!!

Sr.No	Product Name	Product Price	Discount
1.	12 Port extension	20.99	5.0
2.	Aconic Protective Cases	40.0	6.0
3.	All-new Echo Show (2nd Gen)	229.99	15.0
4.	Apple 13.3" MacBook Air	838.95	15.0
5.	Apple Ear Pods with Lightning connector	27.88	10.0
6.	Apple iPhone 7	359.99	15.0
7.	Apple iPhone 7Plus	519.98	15.0
8.	Apple iPhone8	642.0	15.0
9.	Apple iPhoneX	1176.0	15.0
10.	Apple MacBook Air Intel i5	499.0	15.0

12. Inventory Report Showing Products with Manufacturer Rebate

Smart Tech

localhost:8080/smt/ProductModify?button=Inventoryreport

INVENTORY REPORT

- Products with Manufacturer Rebates
- Products Availability
- Graphical Representation
- Products with Discount
- Products with Manufacturer Rebates**

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Smart Tech x + localhost:8080/smt/ProductCrud?inventoryType=manufacturerRebateProducts&button=inventory

Products on Rebate!!!

Sr.No	Product Name	Product Rebate
1.	12 Port extension	10.0
2.	All-new Echo Show (2nd Gen)	10.0
3.	Apple 13.3" MacBook Air	15.0
4.	Apple Ear Pods with Lightning connector	10.0
5.	Apple iPhone 7	10.0
6.	Apple iPhone 7Plus	10.0
7.	Apple iPhone8	10.0
8.	Apple iPhoneX	10.0
9.	Apple MacBook Pro	10.0
10.	Apple MacBook with Retina Display	10.0
11.	Bluetooth in Car speakerphone	10.0
12.	Beats QuietComfort 35	10.0

13. Sales Report Showing Products Sold

Smart Tech x + localhost:8080/smt/ProductModify?button=Salesreport

SALES REPORT

- Products Sold
- Products Sold
- Graphical Representation
- Daily Sales

sales

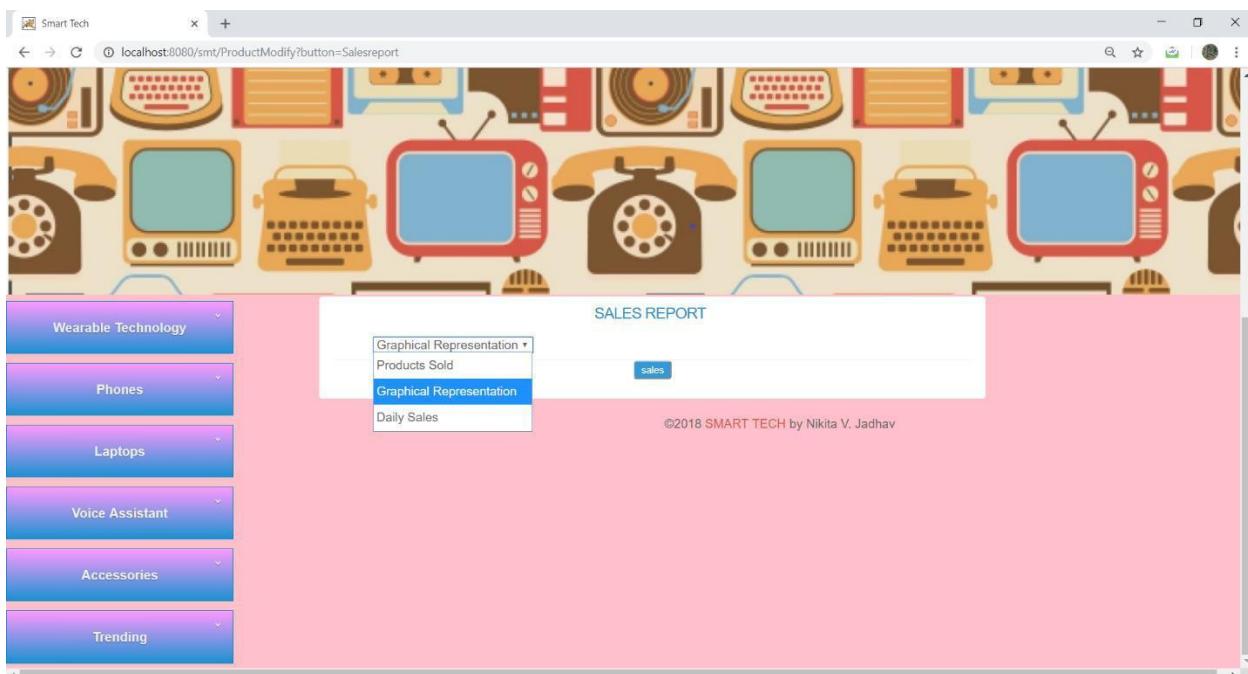
©2018 SMART TECH by Nikita V. Jadhav

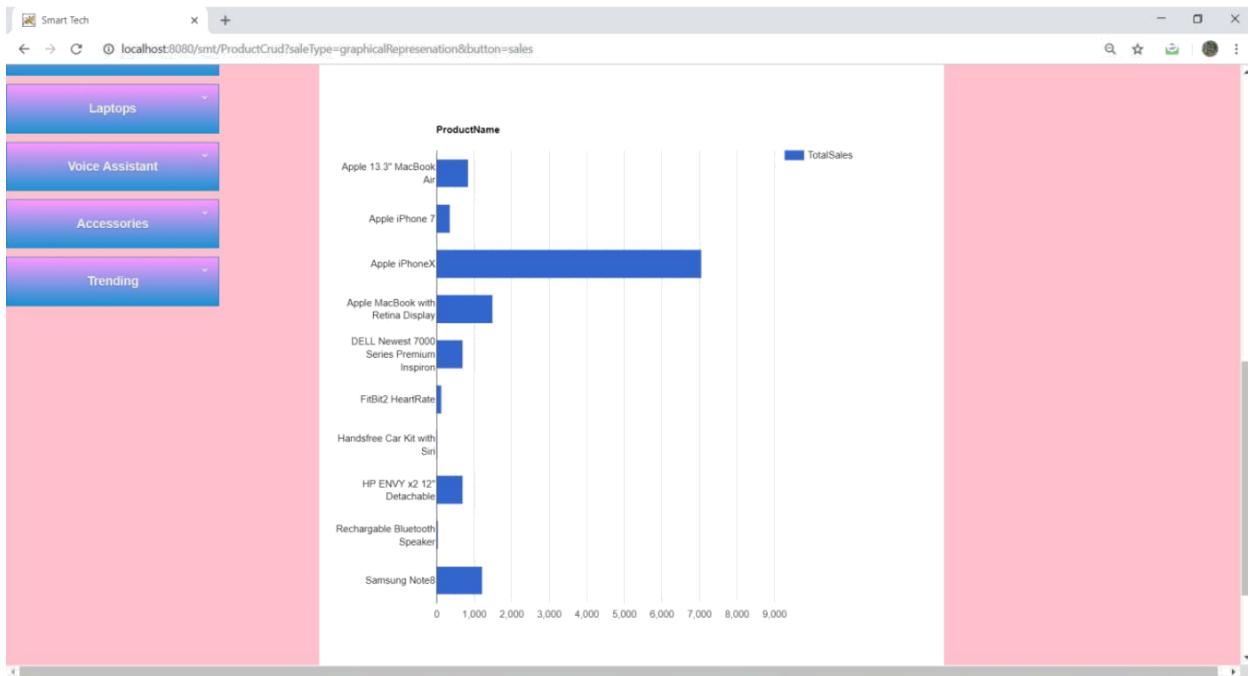
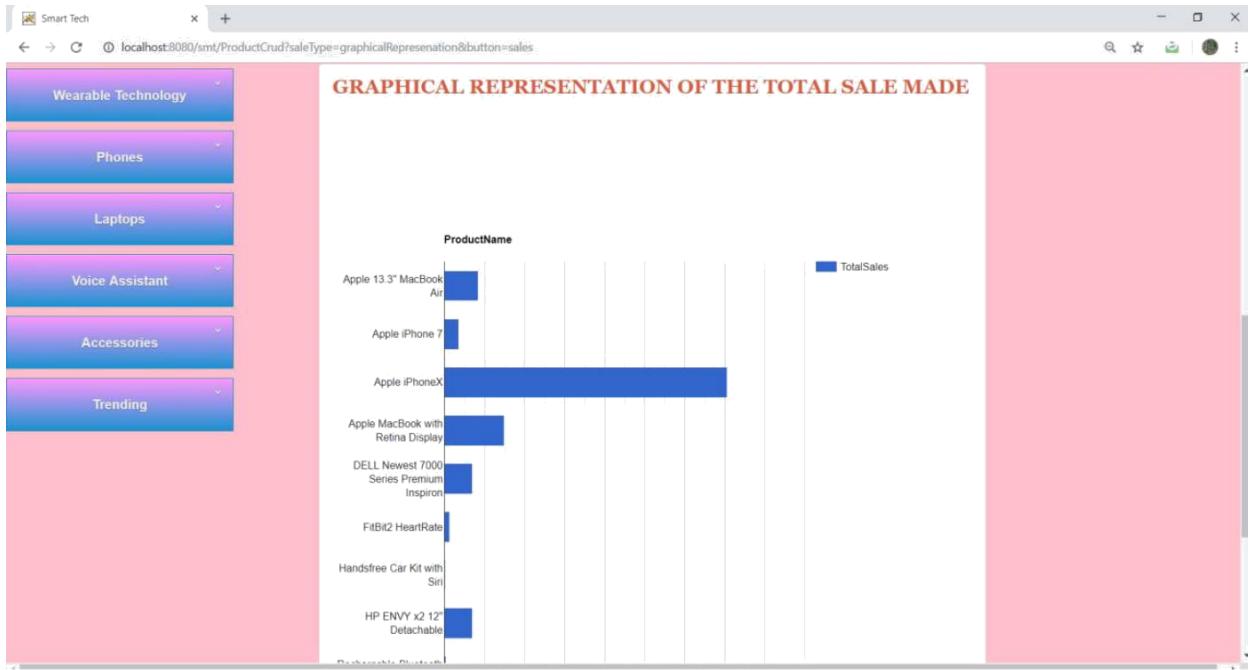
Smart Tech x + localhost:8080/smt/ProductCrud?saleType=productSold&button=sales

Products Sold

Sr.No	Product Name	Product Price	# of Products Sold	Total Sales Made
1.	Apple 13.3" MacBook Air	838.95	1	838.95
2.	Apple iPhone 7	359.99	1	359.99
3.	Apple iPhoneX	1176.0	6	7056.0
4.	Apple MacBook with Retina Display	1499.0	1	1499.0
5.	DELL Newest 7000 Series Premium Inspiron	698.99	1	698.99
6.	FitBit2 HeartRate	129.0	1	129.0
7.	Handsfree Car Kit with Siri	14.99	1	14.99
8.	HP ENVY x2 12" Detachable	702.26	1	702.26
9.	Rechargeable Bluetooth Speaker	29.99	1	29.99
10.	Samsung Note8	604.9	2	1209.8

14. Sales Report Showing the bar chart for the total sales made





15. Sales Report Showing the Daily sales

Smart Tech x + localhost:8080/smt/ProductModify?button=Salesreport:

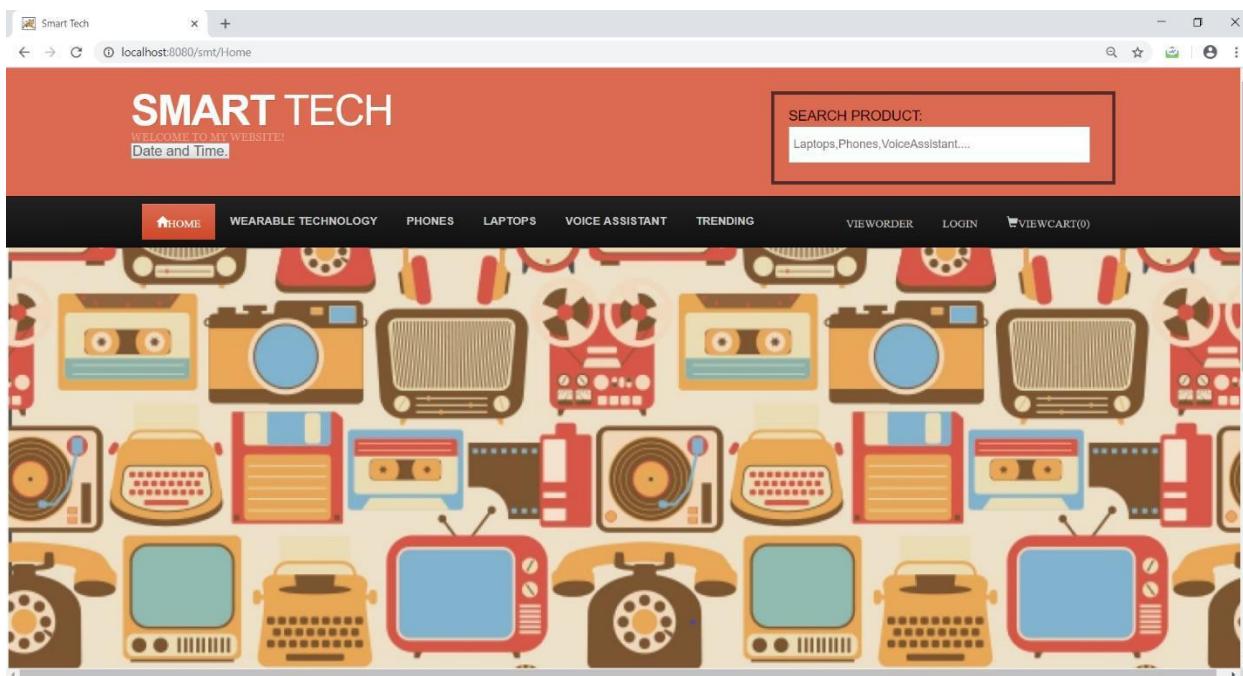
The interface shows a sidebar with categories: Wearable Technology, Phones, Laptops, Voice Assistant, Accessories, and Trending. A central modal window titled 'SALES REPORT' contains a dropdown menu with options: Daily Sales (selected), Products Sold, Graphical Representation, and a 'Search' button. The footer of the main area includes the text '©2018 SMART TECH by Nikita V. Jadhav'.

Smart Tech x + localhost:8080/smt/ProductCrud?saleType=dailySales&button=sales:

The interface shows a sidebar with categories: Wearable Technology, Phones, Laptops, Voice Assistant, Accessories, and Trending. A central table titled 'Daily Sales Report' displays sales data from October 20 to 25, 2018. The table has columns for Sr.No, Date on which Sale made, and Total Sales on that date.

Sr.No	Date on which Sale made	Total Sales on that date
1.	10/20/2018	2234.98
2.	10/21/2018	143.99
3.	10/22/2018	1780.9
4.	10/23/2018	838.95
5.	10/24/2018	5338.889999999999
6.	10/25/2018	2201.26

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16. SQL Table displaying all the product details

MySQL Workbench

Local instance MySQL Router

File Edit View Query Database Server Tools Scripting Help

Navigator: MANAGEMENT, INSTANCE, SCHEMAS, Tables, Information, Table: customerorders, Columns: orderid, useremail, ordername, orderPhone, Object Info, Session.

SQL File 4* | SQL File 4* | SQL File 5* | SQL File 6* | SQL File 7* | SQL File 8* | SQL File 9* | SQL File 10* | SQL File 11* | SQL File 12* | SQLAdditions | Jump to

```

1. use smarttechdb;
2. select count(orderID),state,orderName,orderPrice from customerorders group by state;
3. select orderName,state from customerorders group by state;
4. select state,Avg(orderPrice) as Avgsales from customerorders group by state;
5. select state,SUM(orderPrice) as Totalsales from customerorders group by state;
6. select * from registration;
7. select * from Productdetails;
8. select * from customerorders;

```

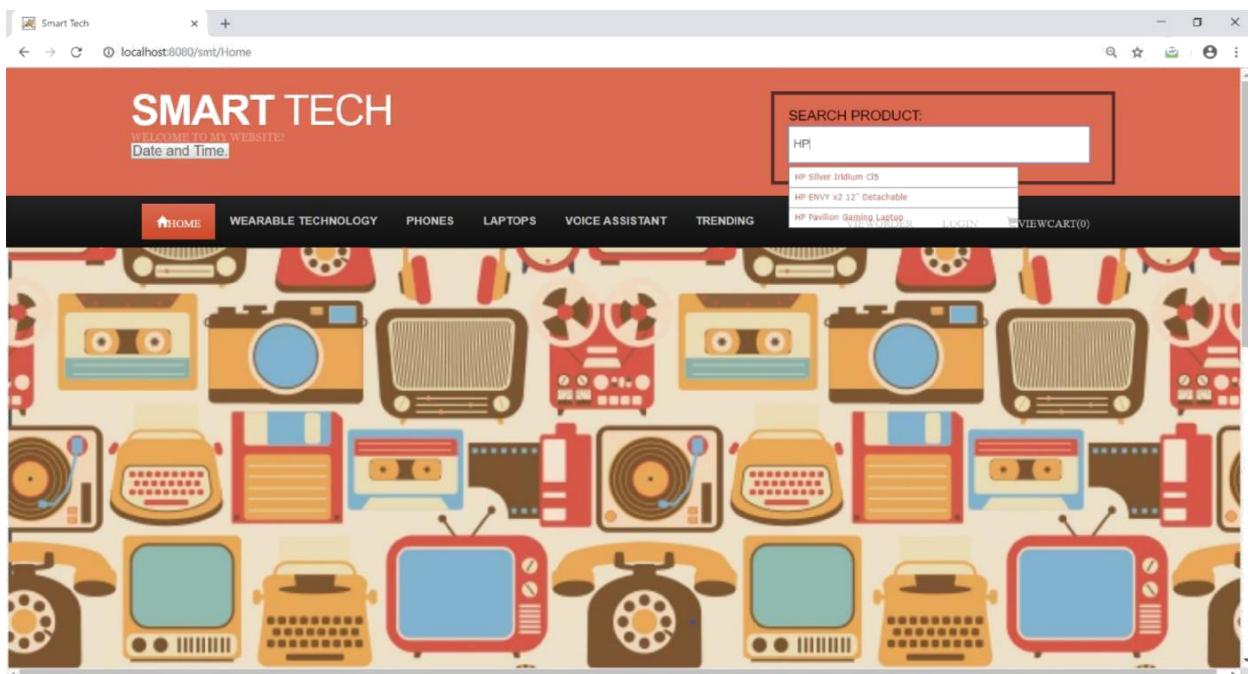
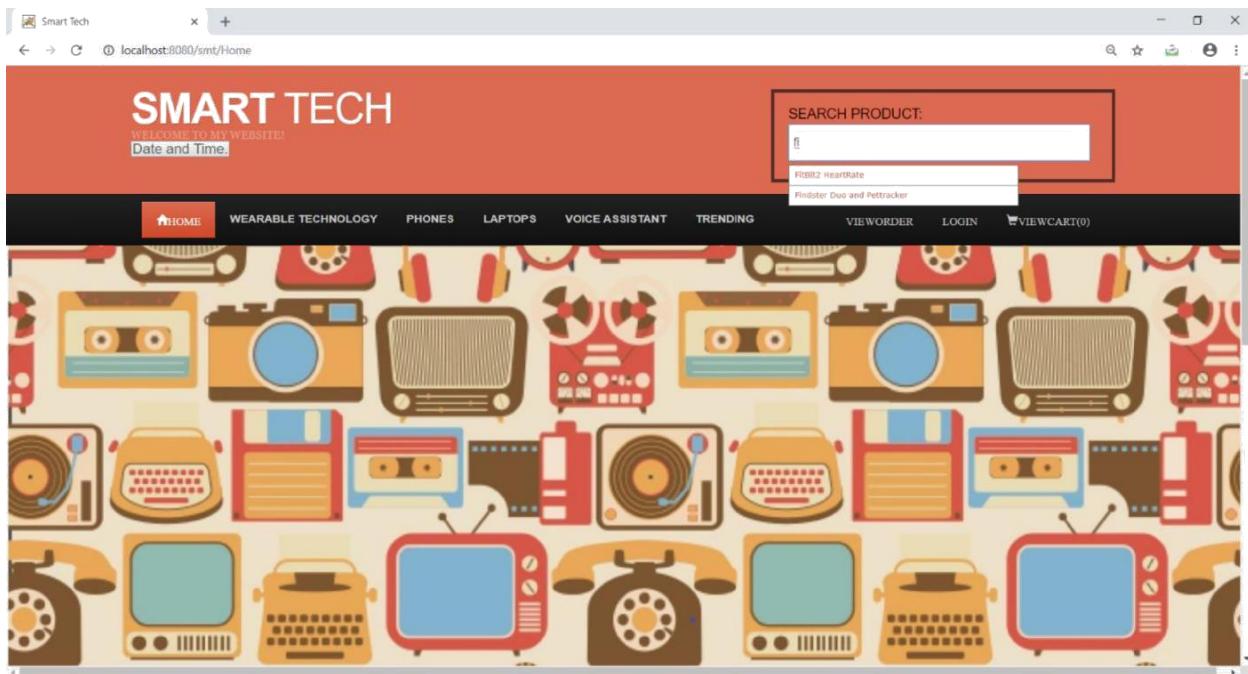
Result Grid | Filter Rows | Edit | Export/Import | Wrap Cell Content | Result Grid | Form Editor | Field Types | Query Stats | Context Help | Snippets

productType	Id	productName	productPrice	productImage	productManufacturer	productCondition	productDiscount	productWarranty
accessories	a1	Universal Magnetic Car Mount	15	A1.png	Samsung	New	40	5
accessories	a2	Shield for iPhone	6	A2.png	Apple	New	40	5
accessories	a3	Light Switch Toggle	35	A1.1.png	Alexa	New	40	0
phones	app1	Apple iPhoneX	1176	APP1.png	Apple	New	15	5
phones	app2	Apple Phone 7	359.99	APP2.png	Apple	Refurbished	15	5
phones	app3	Apple iPhone8	642	APP3.png	Apple	New	15	3
phones	app4	Apple iPhone 7Plus	519.98	APP4.png	Apple	New	15	0
laptops	app01	Apple 13.3" Macbook Air	838.95	APP1.1.png	Apple	New	15	0
laptops	app02	Apple Macbook Air Intel i5	499	APP1.2.png	Apple	New	15	0
laptops	app03	Apple Macbook Pro	486	APP1.3.png	Apple	New	15	5
laptops	app04	Apple Macbook with Retina D...	1499	APP1.4.png	Apple	New	15	5
wearabletechnology	FitB12 Heart...	FitB12 Heart(Rate	129	FitnessWat...	FitnessWatches	New	5	5
wearabletechnology	FitB12 Watch2	Garmen Forerunner 35	30	FitnessWat...	FitnessWatches	New	3	5

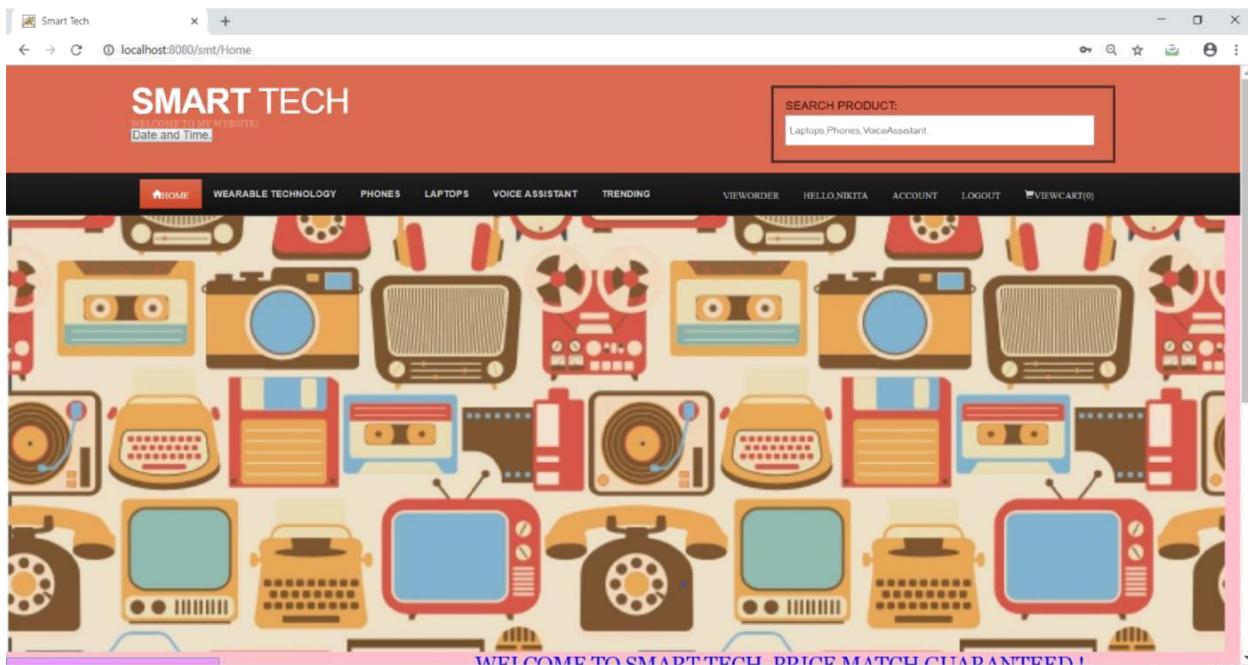
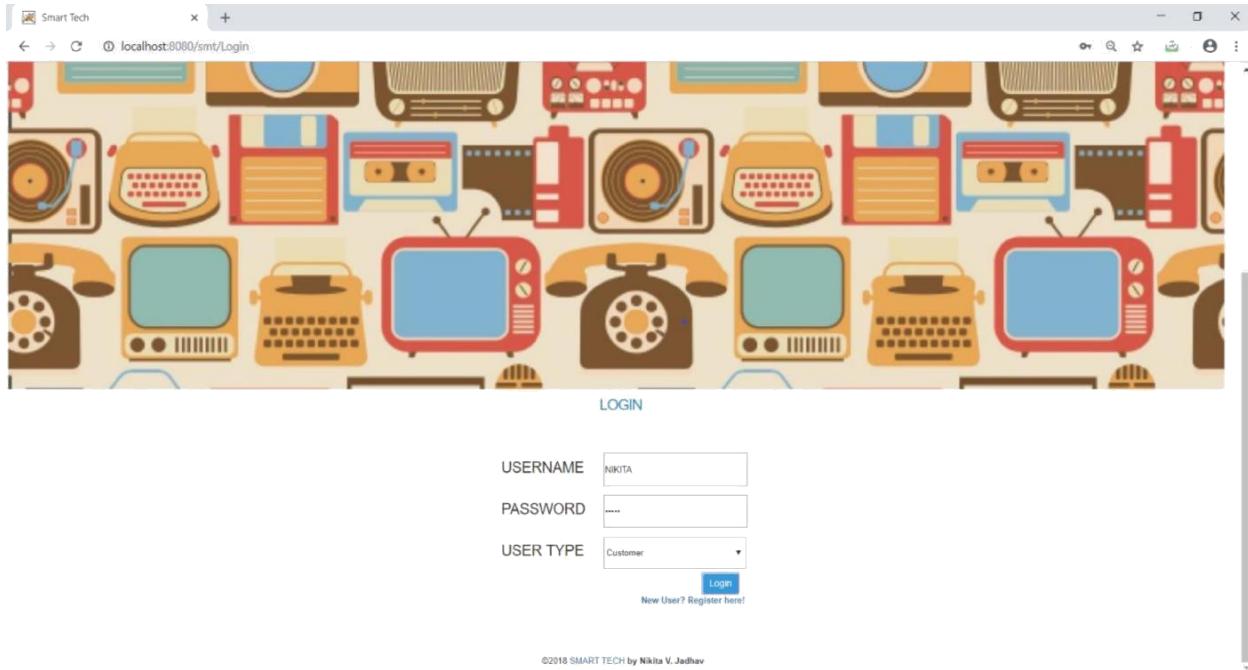
Action Output | Message | Duration / Fetch

- 382 18:48:46 select state, SUM(orderPrice) as Totalsales from customerorders group by state LIMIT 0, 1000 14 row(s) returned 0.000 sec / 0.000 sec
- 383 18:48:46 select * from registration LIMIT 0, 1000 10 row(s) returned 0.000 sec / 0.000 sec
- 384 18:48:46 select * from Productdetails LIMIT 0, 1000 57 row(s) returned 0.016 sec / 0.000 sec
- 385 18:48:46 select * from customerorders LIMIT 0, 1000 25 row(s) returned 0.000 sec / 0.000 sec
- 386 18:48:46 select * from product_accessories LIMIT 0, 1000 13 row(s) returned 0.000 sec / 0.000 sec
- 387 18:48:46 select * from product LIMIT 0, 1000 0 row(s) returned 0.000 sec / 0.000 sec

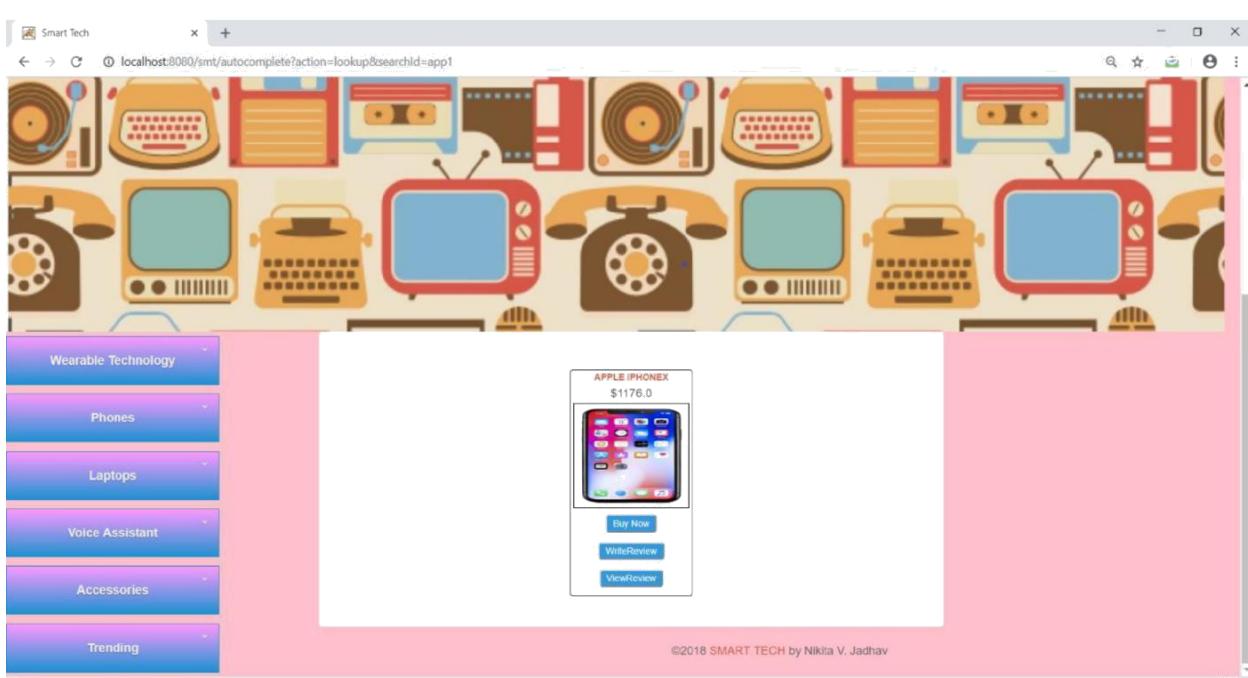
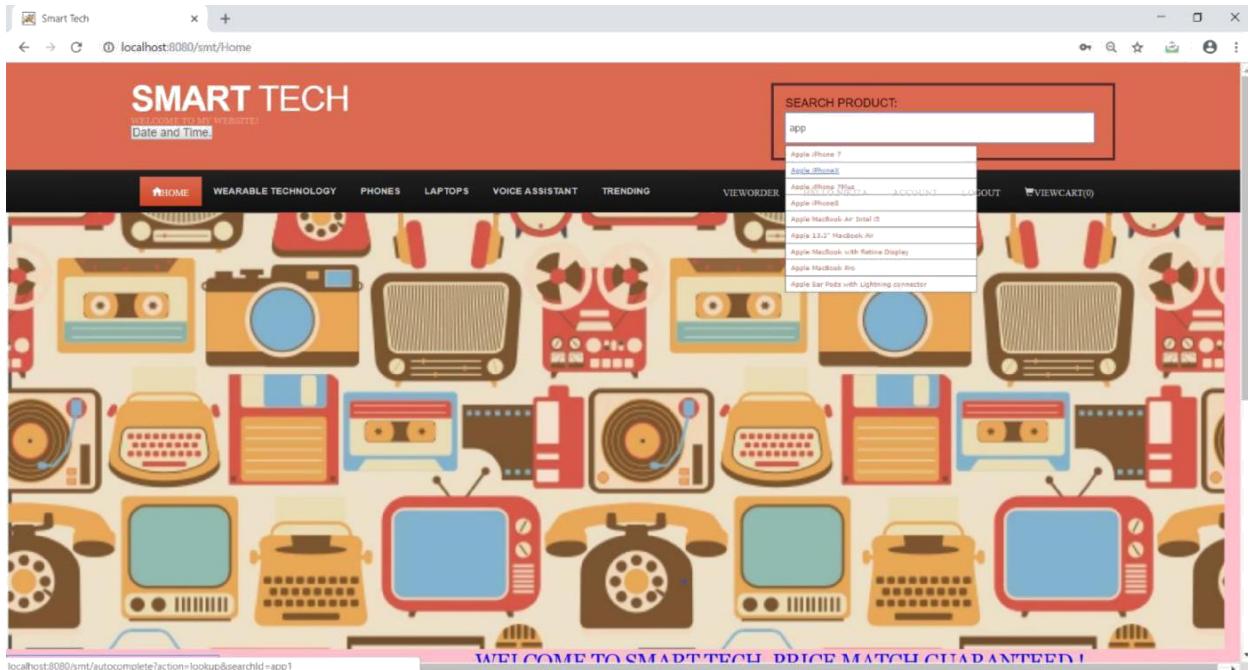
17. Search Product implementing the ajax functionality & auto complete feature



18. Login as the customer



19. ajax functionality & auto complete feature: making the purchase and placing the order



Smart Tech

localhost:8080/smt/ViewCart

VIEWCART(1)

1.	Apple iPhoneX	₹ 1176.0
	Total	₹ 1176.0

CheckOut

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Wearable Technology

Phones

Laptops

Voice Assistant

Accessories

Trending

Smart Tech

localhost:8080/smt/CheckOut

ORDER

Customer Name:	NIKITA
Product Purchased:	Apple iPhoneX
Product Price:	1176.0
Total Order Cost	1176.0

Credit/accountNo: 15478983594

Customer Address: North State Street

State: VA

Submit

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Wearable Technology

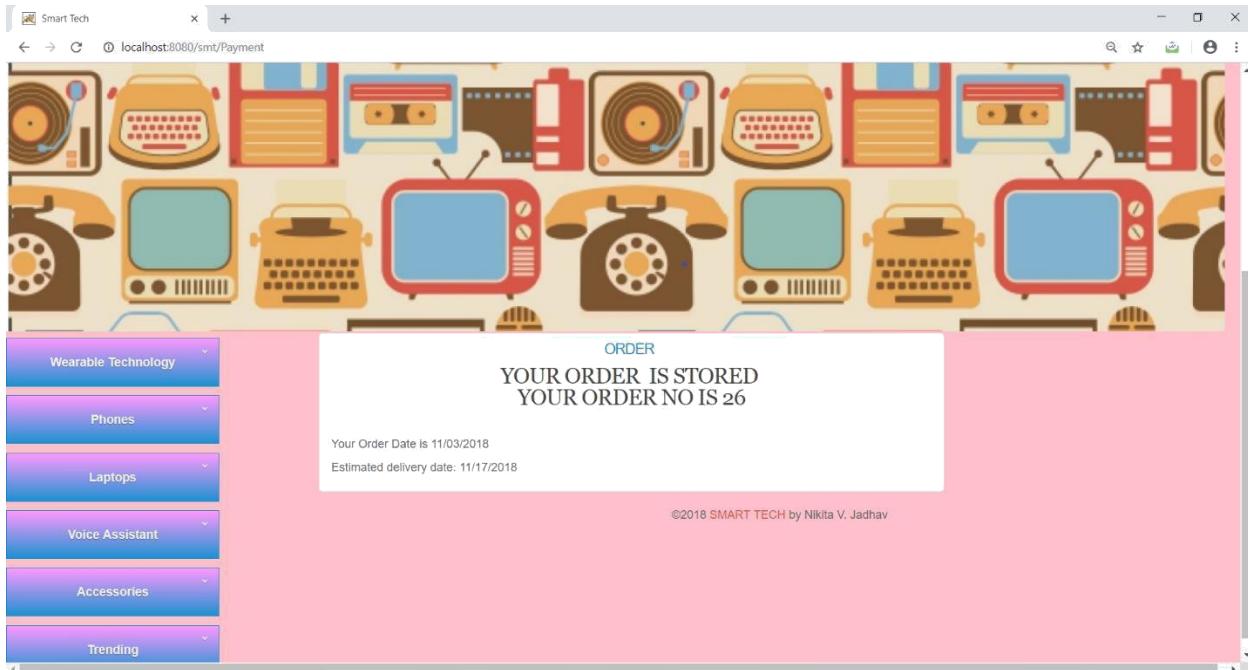
Phones

Laptops

Voice Assistant

Accessories

Trending



20. Order details reflected in the customerorders database

MySQL Workbench

Local instance MySQL Router

File Edit View Query Database Server Tools Scripting Help

Navigator

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

- smarttechdb
- customerorders
- product
- product_accessories
- productdetails
- registration
- Views
- Stored Procedures

Information

Table: customerorders

Columns:

orderId	int(11) PK
username	varchar(40) PK
orderName	varchar(40) PK

Object Info Session

SQL File 4* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL 13* SQLAdditions

```

1 use smarttechdb;
2 select count(orderID),state,orderName,orderPrice from customerorders group by state;
3 select orderName from customerorders group by state;
4 select state,Avg(orderPrice) as Avgales from customerorders group by state;
5 select state,SUM(orderPrice) as Totales from customerorders group by state;
6 select * from registration;
7 select * from Productdetails;
8 select * from customerorders;

```

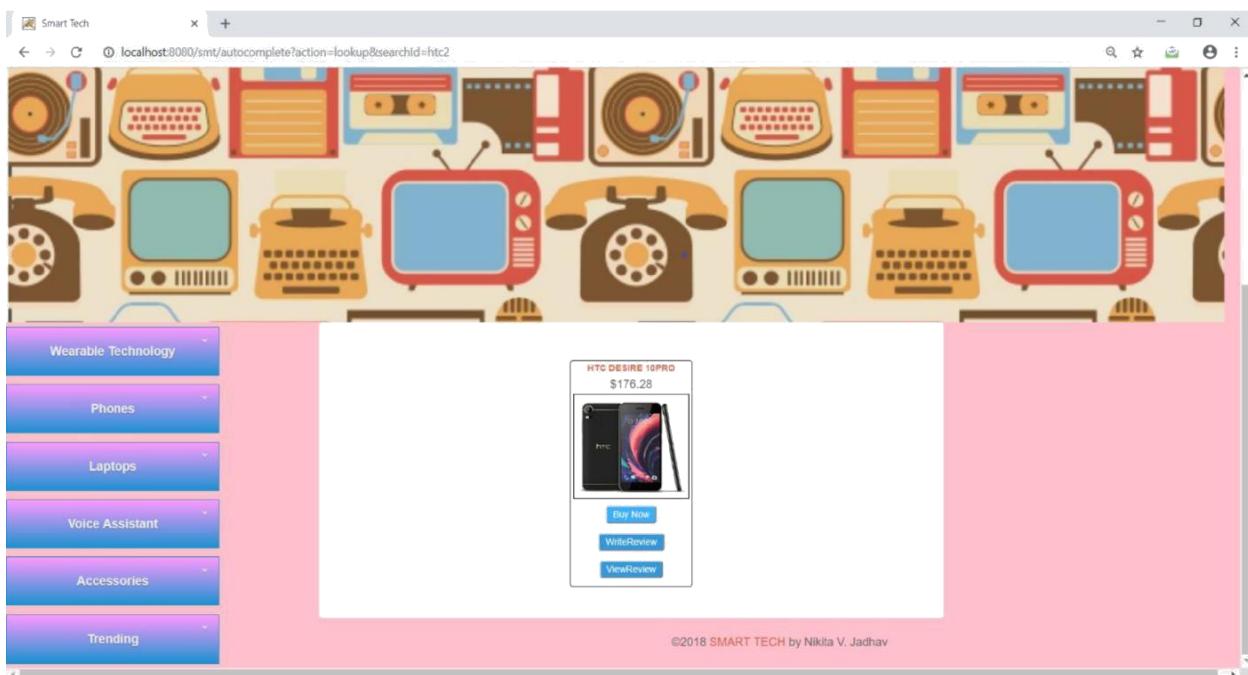
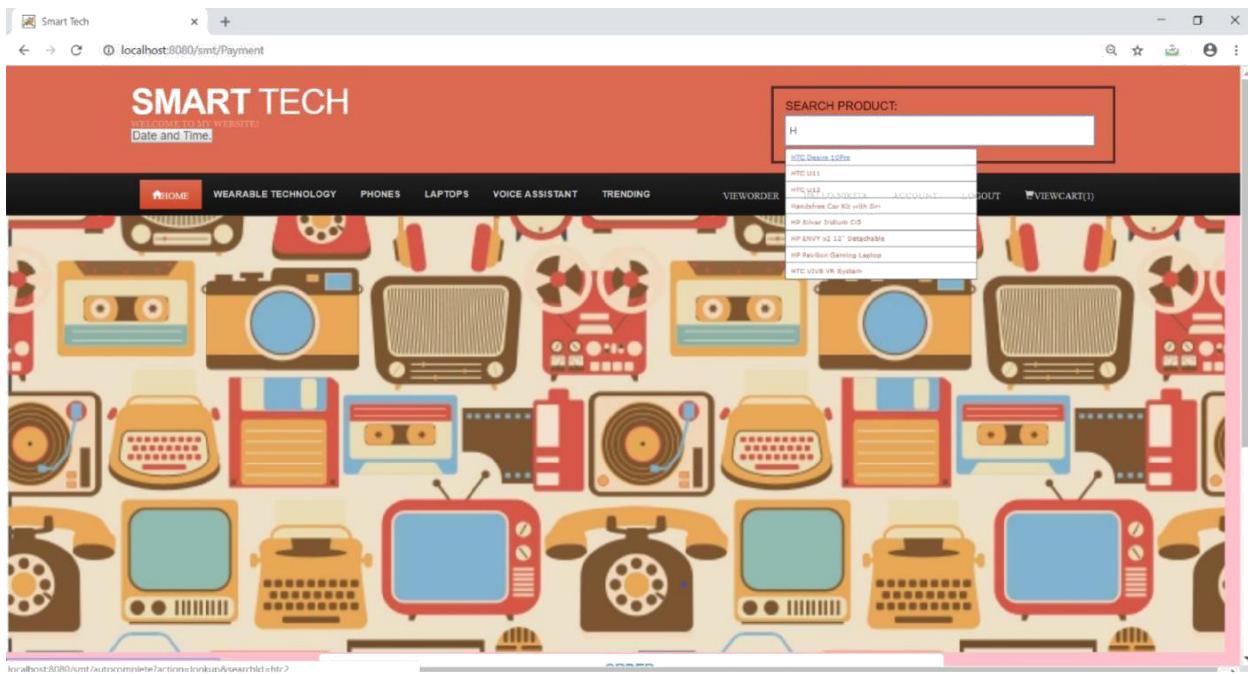
Result Grid

orderId	username	orderName	orderPrice	userAddress	creditCardNo	discount	warrantyamt	orderdate	deliverydate
14	NKITA	HTC Desire 10Pro	176.28	Kyla Olsen	18655963258	15	5	10/31/2018	11/14/2018
15	NKITA	Rechargeable Bluetooth Speaker	29.99	Forrest Ray	123594833	15	5	10/31/2018	11/14/2018
16	NKITA	Fitbit HeartRate	129	Forrest Ray	1236593396	5	5	10/31/2018	11/14/2018
17	NKITA	Ring WiFi Enabled Video Doorbell	99.99	Forrest Ray	1203148993525	15	5	10/31/2018	11/14/2018
18	NKITA	HP ENVY x2 12" Detachable	702.26	Forrest Ray	14529365963	15	5	10/31/2018	11/14/2018
19	NKITA	Bluetooth In Car speakerphone	54.29	VForrest Ray	125963496323	15	5	10/31/2018	11/14/2018
20	NKITA	All-new Echo Show (2nd Gen)	229.99	Forrest Ray	14582935254	15	5	10/31/2018	11/14/2018
21	NKITA	Samsung Galaxy S8	549.88	Bon Stary	15725892458	15	5	10/31/2018	11/14/2018
22	NKITA	Samsung Note8	604.9	Base	78040607	15	8	10/31/2018	11/14/2018
23	SHRADDAH	HTC Desire 10Pro	176.28	Forrest Ray	12454549	15	5	10/31/2018	11/14/2018
24	SHRADDAH	Handsfree Car Kit with Siri	14.99	North State Street	482665626	15	5	10/31/2018	11/14/2018
25	SHRADDAH	Apple Ear Pods with Lightning con...	27.88	Forrest Ray	15459526325	10	0	10/31/2018	11/14/2018
26	NKITA	Apple iPhoneX	1176	North State Street	15478963594	15	5	11/03/2018	11/17/2018

Action Output

#	Time	Action	Message	Duration / Fetch
393	22:37:44	select state,AVG(orderPrice) as Avgales from customerorders group by state LIMIT 0, 1000	14 row(s) returned	0.000 sec / 0.000 sec
394	22:37:44	select state,SUM(orderPrice) as Totales from customerorders group by state LIMIT 0, 1000	14 row(s) returned	0.000 sec / 0.000 sec
395	22:37:44	select * from registration LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
396	22:37:44	select * from Productdetails LIMIT 0, 1000	57 row(s) returned	0.000 sec / 0.000 sec
397	22:37:44	select * from customerorders LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec
398	22:37:44	select * from product_accessories LIMIT 0, 1000	13 row(s) returned	0.000 sec / 0.000 sec

21. Placing the 2nd order as previous



Smart Tech localhost:8080/smt/CheckOut

ORDER

Customer Name:	NIKITA
Product Purchased:	HTC Desire 10Pro
Product Price:	176.28
Total Order Cost	176.28

Credit/accountNo: 12596335555
Customer Address: North Avenue
State: VA

Submit

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Voice Assistant
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Smart Tech localhost:8080/smt/Payment

ORDER

YOUR ORDER IS STORED
YOUR ORDER NO IS 27

Your Order Date Is 11/03/2018
Estimated delivery date: 11/17/2018

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Wearable Technology
Phones
Laptops
Voice Assistant

MySQL Workbench

Local instance MySQL Router

File Edit View Query Database Server Tools Scripting Help

Navigator: MANAGEMENT, INSTANCE, SCHEMAS, INFORMATION, Tables, Views, Stored Procedures, Information, Table: customerorders, Column: orderId, userImage, orderName, orderPrice, userAddress, creditCardNo, discount, warrantyamt, orderdate, deliverydate.

SQL File 4*, SQL File 4*, SQL File 4*, SQL File 5*, SQL File 6*, SQL File 7*, SQL File 8*, SQL File 9*, SQL File 10*, SQL File 11*, SQL File 12*, SQL Additions

```

1. use smarttechdb;
2. select count(orderID),state,orderName,orderPrice from customerorders group by state;
3. select orderName,state from customerorders group by state;
4. select state,Avg(orderPrice) as Avgsales from customerorders group by state;
5. select state,SUM(orderPrice) as Totalsales from customerorders group by state;
6. select * from registration;
7. select * from Productdetails;
8. select * from customerorders;

```

Result Grid, Filter Rows, Edit, Export/Import, Wrap Cell Content, Result Grid, Form Editor, Field Types, Query Stats.

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

orderId	userName	orderName	orderPrice	userAddress	creditCardNo	discount	warrantyamt	orderdate	deliverydate
14	NDKTA	Refresh data re-executing the original query	98	Kyla Olsen	1865996259	15	5	10/31/2018	11/1/2018
15	NDKTA	Rechargeable Bluetooth Speaker	29.99	Forrest Ray	123964633	15	5	10/31/2018	11/1/2018
16	NDKTA	FiBikZ HeadState	129	Forrest Ray	123693996	8	5	10/31/2018	11/1/2018
17	NDKTA	Ring WiFi Enabled Video Doorbell	99.99	Forrest Ray	12014993525	15	5	10/31/2018	11/1/2018
18	NDKTA	HP ENVY x2 12" Detachable	702.26	Forrest Ray	1452935963	15	5	10/31/2018	11/1/2018
19	NDKTA	Bluetooth in Car speakerphone	54.29	VForrest Ray	125963496323	15	5	10/31/2018	11/1/2018
20	NDKTA	All-new Echo Show (2nd Gen)	229.99	Forrest Ray	14582352545	15	5	10/31/2018	11/1/2018
21	NDKTA	Samsung Galaxy S8	549.88	Bon State	1572592458	15	5	10/31/2018	11/1/2018
22	NDKTA	Samsung Note8	604.9	Base	70408067	15	8	10/31/2018	11/1/2018
23	SHRADDAH	HTC Desire 10Pro	176.28	Forrest Ray	12545549	15	5	10/31/2018	11/1/2018
24	SHRADDAH	Handfree Car Kit with Siri	14.99	North State Street	48666562	15	5	10/31/2018	11/1/2018
25	SHRADDAH	Apple Ear Pods with Lightning con...	27.88	Forrest Ray	15459526325	10	0	10/31/2018	11/1/2018
26	NDKTA	Apple iPhoneX	1176	North State Street	15478963594	15	5	11/03/2018	11/17/2018
27	NDKTA	HTC Desire 10Pro	176.28	North Avenue	12596335555	15	5	11/03/2018	11/17/2018

Result 290, customerorders 291, Result 292, Result 293, registration 294, Productdetails 295, customerorders 296 x, product_accessories297, Apply, Refresh, Context Help, Snippets.

Action Output:

#	Time	Action	Message	Duration / Fetch
393	22:37:44	select state.AVG(orderPrice) as Avgsales from customerorders group by state LIMIT 0, 1000	14 row(s) returned	0.000 sec / 0.000 sec
394	22:37:44	select state.SUM(orderPrice) as Totalsales from customerorders group by state LIMIT 0, 1000	14 row(s) returned	0.000 sec / 0.000 sec
395	22:37:44	select * from registration LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
396	22:37:44	select * from Productdetails LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec
397	22:37:44	select * from customerorders LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec
398	22:37:44	select * from product_accessories LIMIT 0, 1000	13 row(s) returned	0.000 sec / 0.000 sec

22. Login as the store manager

Smart Tech

localhost:8080/smt/Login

LOGIN

USERNAME	<input type="text" value="hari"/>
PASSWORD	<input type="password"/>
USER TYPE	<input type="button" value="Store Manager"/>
<input type="button" value="Login"/>	
New User? Register here!	

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23. Store Manager adds the product to the store

Smart Tech

localhost:8080/smt/ProductModify?button=Addproduct

ADD PRODUCT

PRODUCT TYPE	Laptops
PRODUCT	HP
PRODUCT ID	zm1
PRODUCT NAME	HP envy
PRODUCT PRICE	1000
PRODUCT IMAGE	APPP3.png
PRODUCT MANUFACTURER	HP

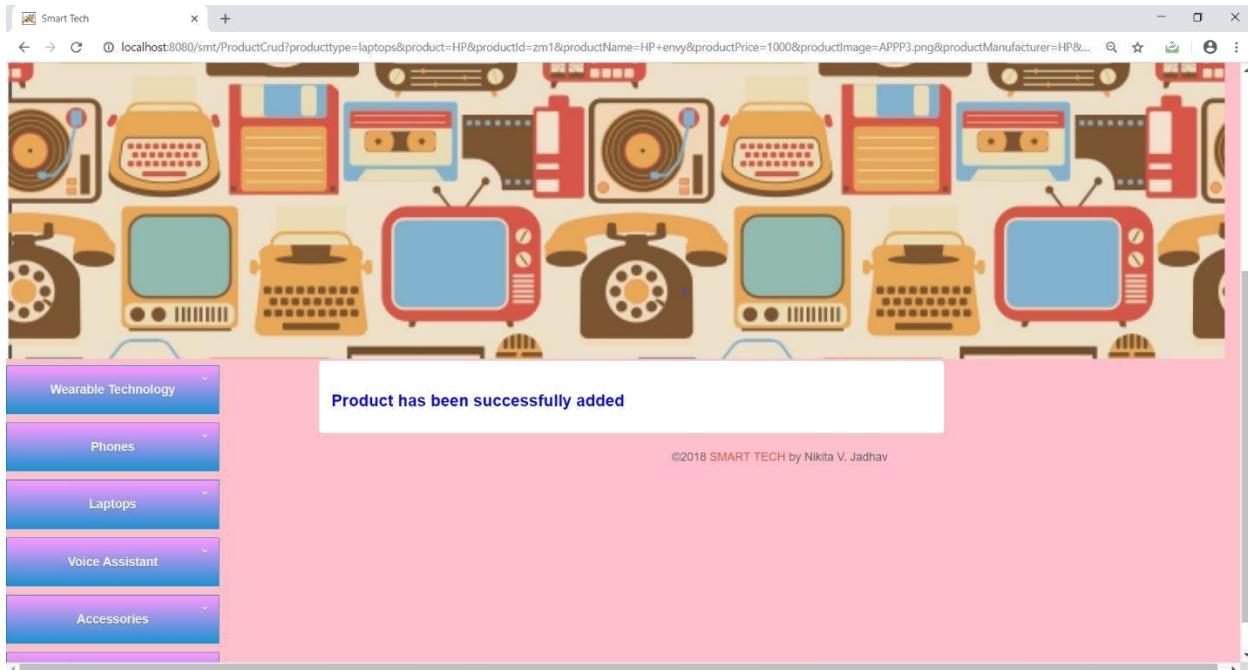
Wearable Technology
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Accessories
Trending

Smart Tech

localhost:8080/smt/ProductModify?button=Addproduct

PRODUCT NAME	HP envy
PRODUCT PRICE	1000
PRODUCT IMAGE	APPP3.png
PRODUCT MANUFACTURER	HP
PRODUCT CONDITION	New
PRODUCT DISCOUNT	10
PRODUCT WARRANTY	10
PRODUCT QUANTITY	100
PRODUCT REBATE	12

Voice Assistant
Accessories
Trending



24. Product added gets reflected in the SQL database with the id as zm1

The screenshot shows the MySQL Workbench interface. The top navigation bar includes 'File', 'Edit', 'View', 'Query', 'Database', 'Server', 'Tools', 'Scripting', and 'Help'. The main area displays a SQL editor with the following code:

```

use smartechdb;
select count(orderID),state,orderName,orderPrice from customerorders group by state;
select orderName,state from customerorders group by state;
select state,AVG(orderPrice) as AvgSales from customerorders group by state;
select state,sum(orderPrice) as TotSales from customerorders group by state;
select * from registration;
select * from Productdetails;
select * from customerorders;

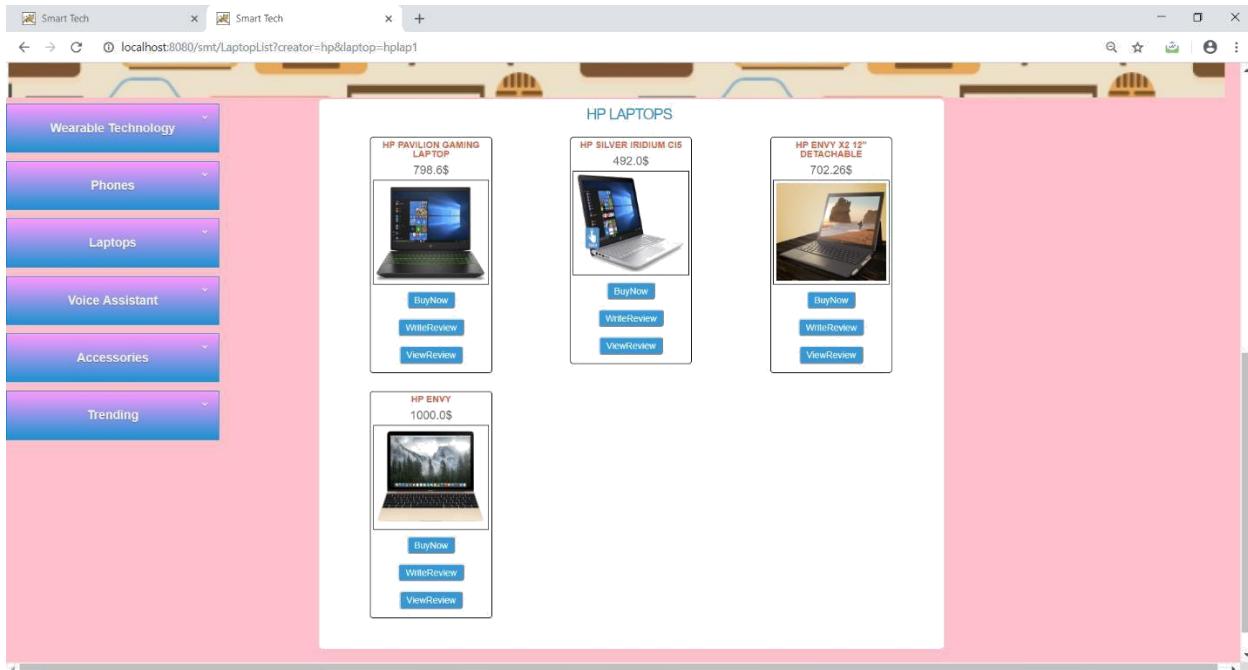
```

Below the SQL editor is a 'Result Grid' showing the data for the last query. The table has columns: productType, Id, productName, productPrice, productImage, productManufacturer, productCondition, productDiscount, and productWarranty. The data is as follows:

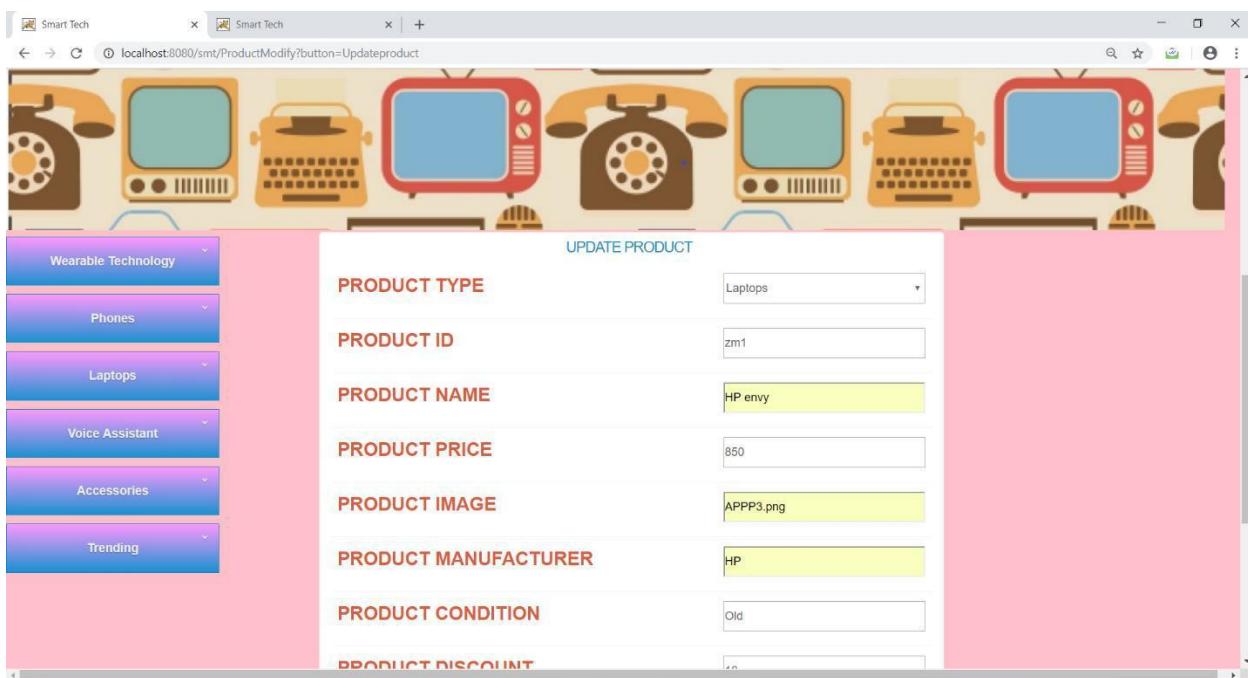
productType	Id	productName	productPrice	productImage	productManufacturer	productCondition	productDiscount	productWarranty
accessories	16	SEMI2UCharger for MacBook...	25.88	L6.png	Apple	New	40	0
laptops	zm1	HP envy	1000	APPP3.png	HP	New	10	10
	MNULL	MNULL	MNULL	MNULL	MNULL	MNULL	MNULL	MNULL

At the bottom of the interface, there is a 'Table: customerorders' section showing table information and a 'Table: customerorders' section showing table information.

25. Product added gets reflected on the web page as HP Envy with price as 1000\$



26. Store Manager performs the update by changing the product price from 1000\$ to 850\$



Smart Tech

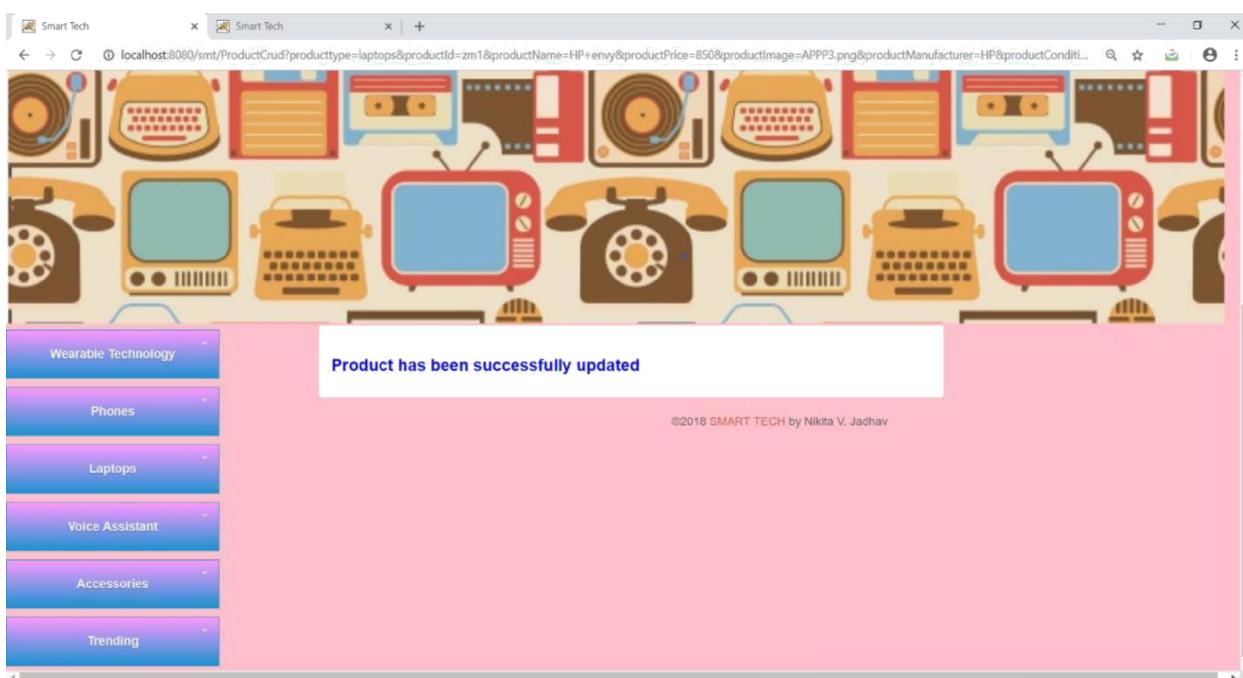
localhost:8080/smt/ProductModify?button=Updateproduct

Voice Assistant
Accessories
Trending

PRODUCT NAME	HP envy
PRODUCT PRICE	850
PRODUCT IMAGE	APPP3.png
PRODUCT MANUFACTURER	HP
PRODUCT CONDITION	Old
PRODUCT DISCOUNT	10
PRODUCT WARRANTY	10
PRODUCT QUANTITY	100
PRODUCT REBATE	12

update

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27. Product Price change gets updated in the database

MySQL Workbench

Local instance MySQL Router

File Edit View Query Database Server Tools Scripting Help

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

smarttechdb

- Tables
- Views
- Stored Procedures

Table: customerorders

Columns:

- orderID int(11) PK
- username varchar(40) PK
- orderName varchar(40) PK

Object Info Session

SQL File 4* SQL File 4* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL Additions

```

1. use smarttechdb;
2. select count(orderID),state,orderName,orderPrice from customerorders group by state;
3. select orderName,state from customerorders group by state;
4. select state,AVG(orderPrice) as Avgsales from customerorders group by state;
5. select state,SUM(orderPrice) as Totalsales from customerorders group by state;
6. select * from registration;
7. select * from Productdetails;
8. select * from customerorders;

```

Result Grid

productType	Id	productName	productPrice	productImage	productManufacturer	productCondition	productDiscount	productWarranty
accessories	16	SEMI2DXCharger for MacBook...	25.98	L6.png	Apple	New	40	0
laptops	zm1	HP envy	850	APPP3.png	HP	Old	10	10

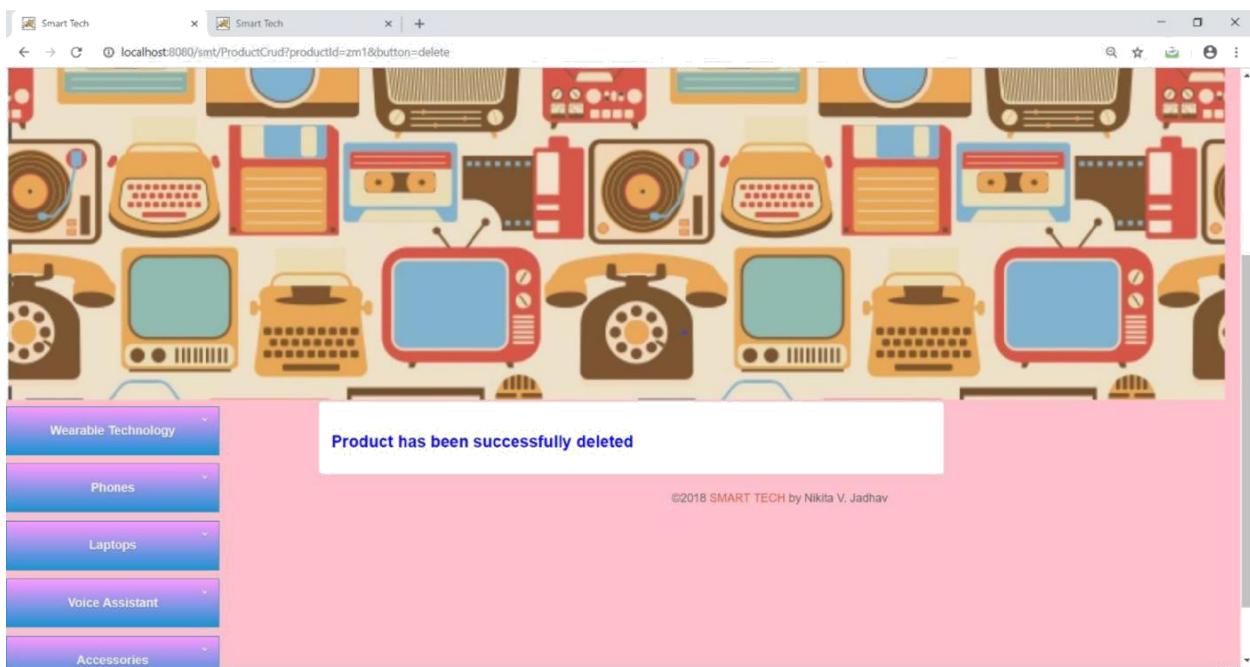
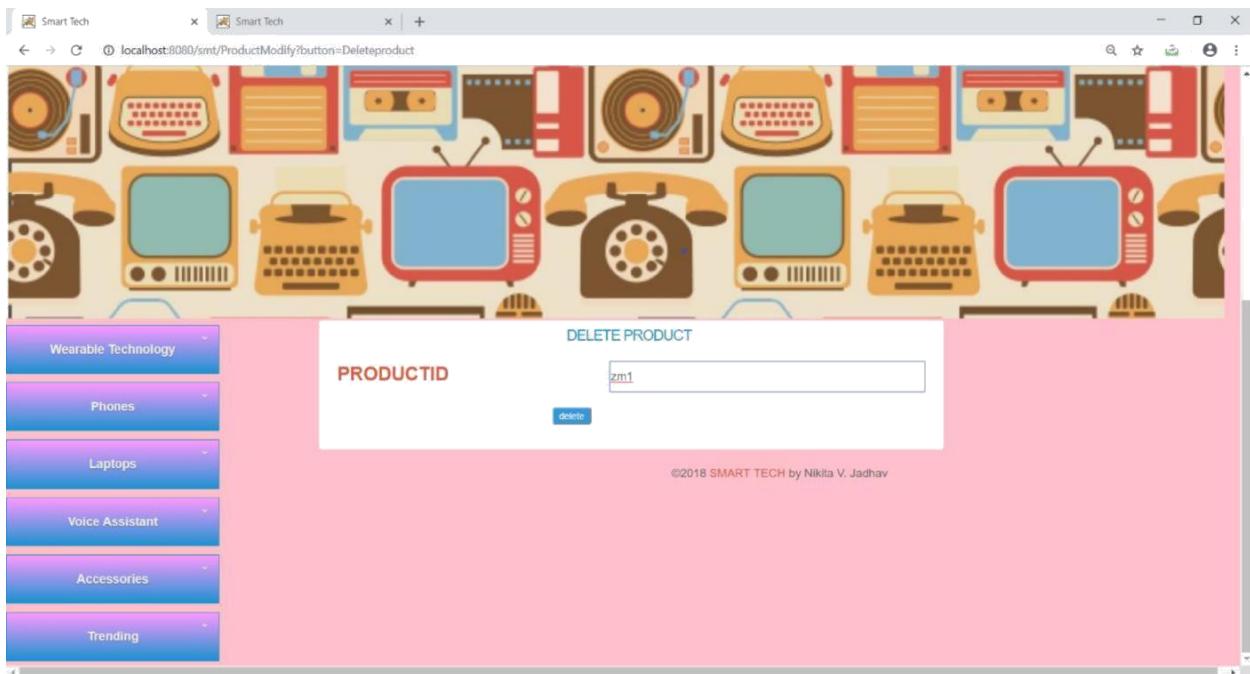
Result 290 customerorders 291 Result 292 Result 293 registration 294 Productdetails 295 x customerorders 296 product_accessories297

Action Output

Time	Action	Message	Duration / Fetch
393 22:37:44	select state.AVG(orderPrice) as Avgsales from customerorders group by state LIMIT 0, 1000	14 row(s) returned	0.000 sec / 0.000 sec
394 22:37:44	select state,SUM(orderPrice) as Totalsales from customerorders group by state LIMIT 0, 1000	14 row(s) returned	0.000 sec / 0.000 sec
395 22:37:44	select * from registration LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
396 22:37:44	select * from Productdetails LIMIT 0, 1000	57 row(s) returned	0.000 sec / 0.000 sec
397 22:37:44	select * from customerorders LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec
398 22:37:44	select * from product_accessories LIMIT 0, 1000	13 row(s) returned	0.000 sec / 0.000 sec

28. Product Price gets updated on the web page as well

29. Store manager performs delete operation on the product with the id as zm1



30. Delete operation updated in the SQL database & webpage as well

MySQL Workbench

Local instance MySQL Router

File Edit View Query Database Server Tools Scripting Help

Navigator

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
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PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

Filter objects

- mydb
- sakila
- smartechdb
- Tables
 - customerorders
 - product
 - product_accessories
 - productdetails
 - registration
- Views
- Stored Procedures

Information

Table: customerorders

Columns:

- orderID PK varchar(10)
- orderName PK varchar(40)
- orderName PK varchar(40)

Object Info Session

SQL File 4* SQL File 4* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL Additions

```

1 use smartechdb;
2 select count(orderID),state,orderName,orderPrice from customerorders group by state;
3 select orderName,state from customerorders group by state;
4 select state,Avg(orderPrice) as Avgsales from customerorders group by state;
5 select state,SUM(orderPrice) as Totalsales from customerorders group by state;
6 select * from registration;
7 select * from Productdetails;
8 select * from customerorders;

```

Result Grid | Filter Rows | Edit | Wrap Cell Contents | Export/Import | Result Grid | Form Editor | Field Types | Query Step | Context Help | Snippets

productType	Id	productName	productPrice	productImage	productManufacturer	productCondition	productDiscount	productWarranty
accessories	16	SEML2DXCharger for MacBook...	25.88	L6.png	Apple	New	40	0

Result 290 customerorders 291 Result 292 Result 293 registration 294 Productdetails 295 x customerorders 296 product_accessories297

Action Output

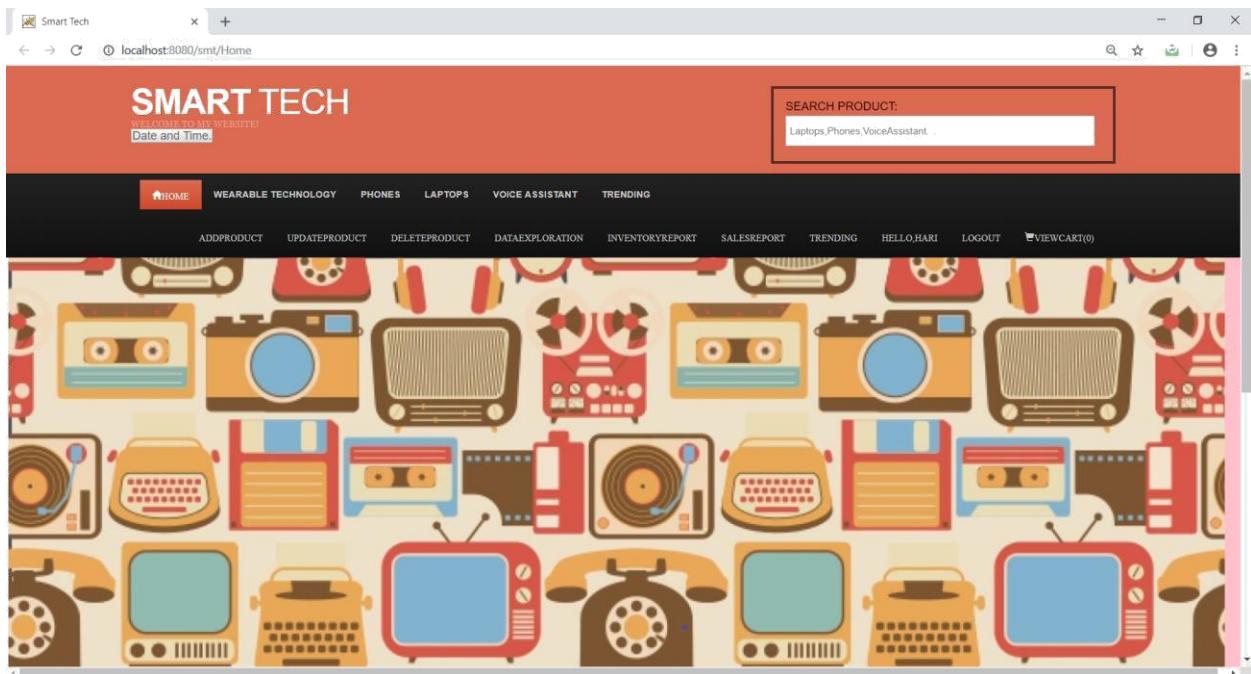
Time	Action	Message	Duration / Fetch
393 22:37:44	select state,Avg(orderPrice) as Avgsales from customerorders group by state LIMIT 0, 1000	14 row(s) returned	0.000 sec / 0.000 sec
394 22:37:44	select state,SUM(orderPrice) as Totalsales from customerorders group by state LIMIT 0, 1000	14 row(s) returned	0.000 sec / 0.000 sec
395 22:37:44	select * from registration LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
396 22:37:44	select * from Productdetails LIMIT 0, 1000	57 row(s) returned	0.000 sec / 0.000 sec
397 22:37:44	select * from customerorders LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec
398 22:37:44	select * from product_accessories LIMIT 0, 1000	13 row(s) returned	0.000 sec / 0.000 sec

Smart Tech Smart Tech +

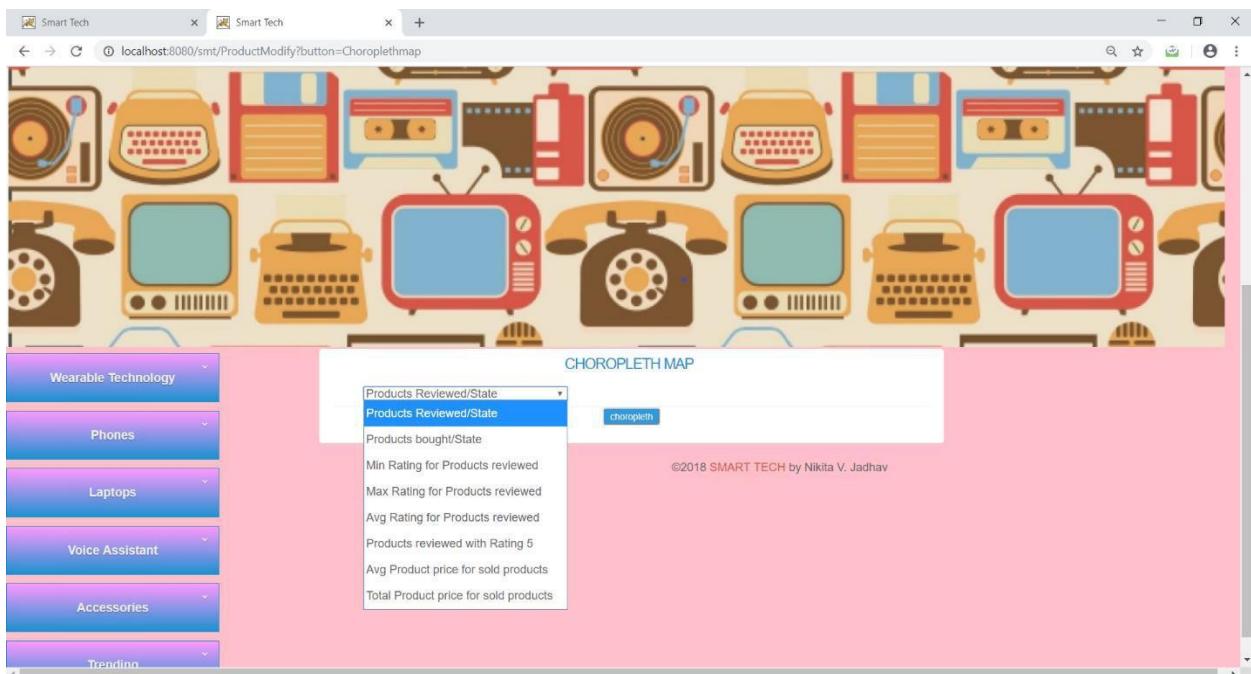
localhost:8080/smt/LaptopList?creator=hp&laptop=hplap1

BONUS FEATURE:

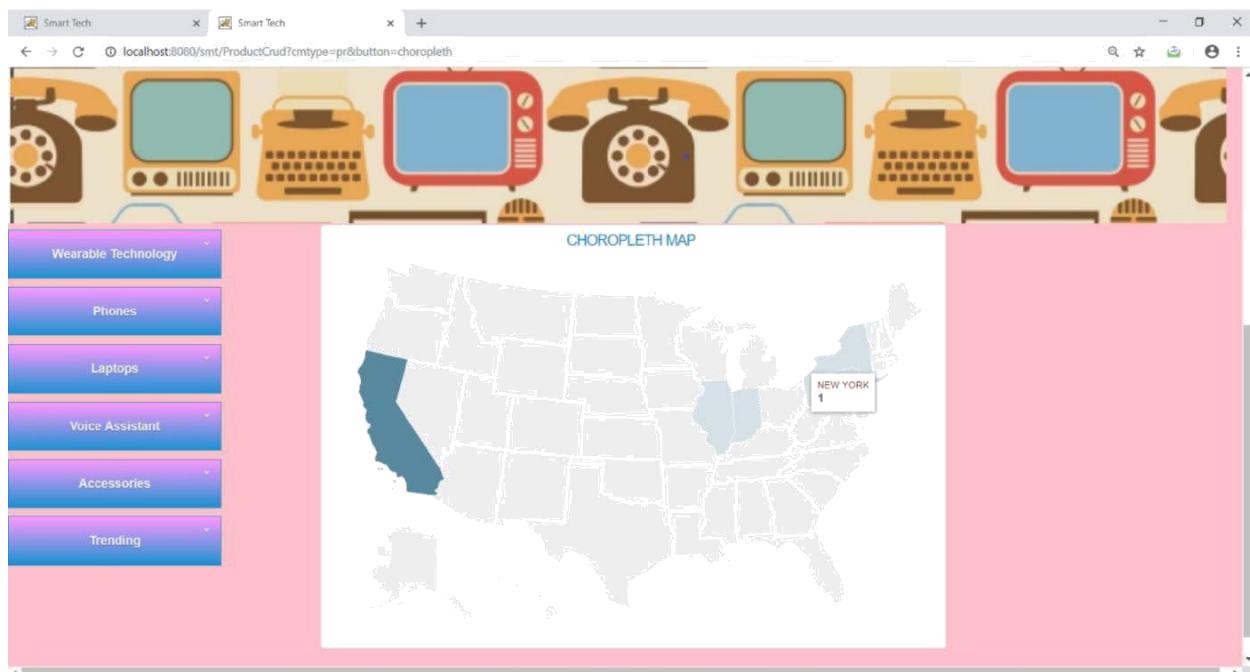
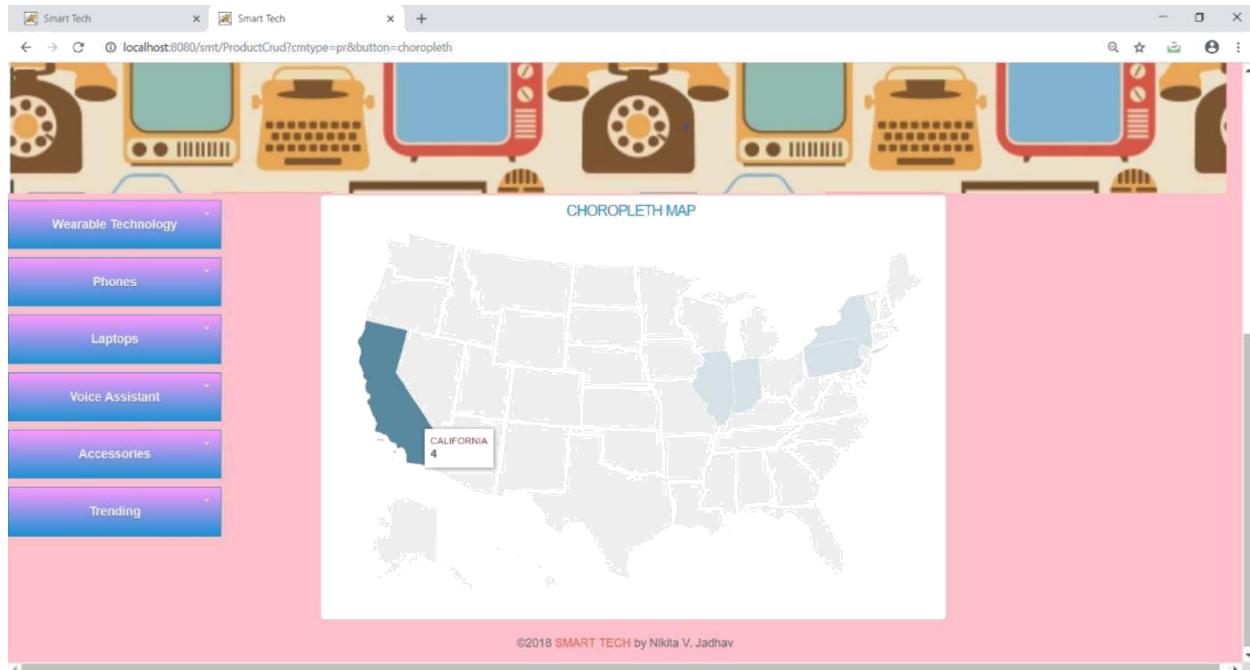
31. Choropleth feature Implementation

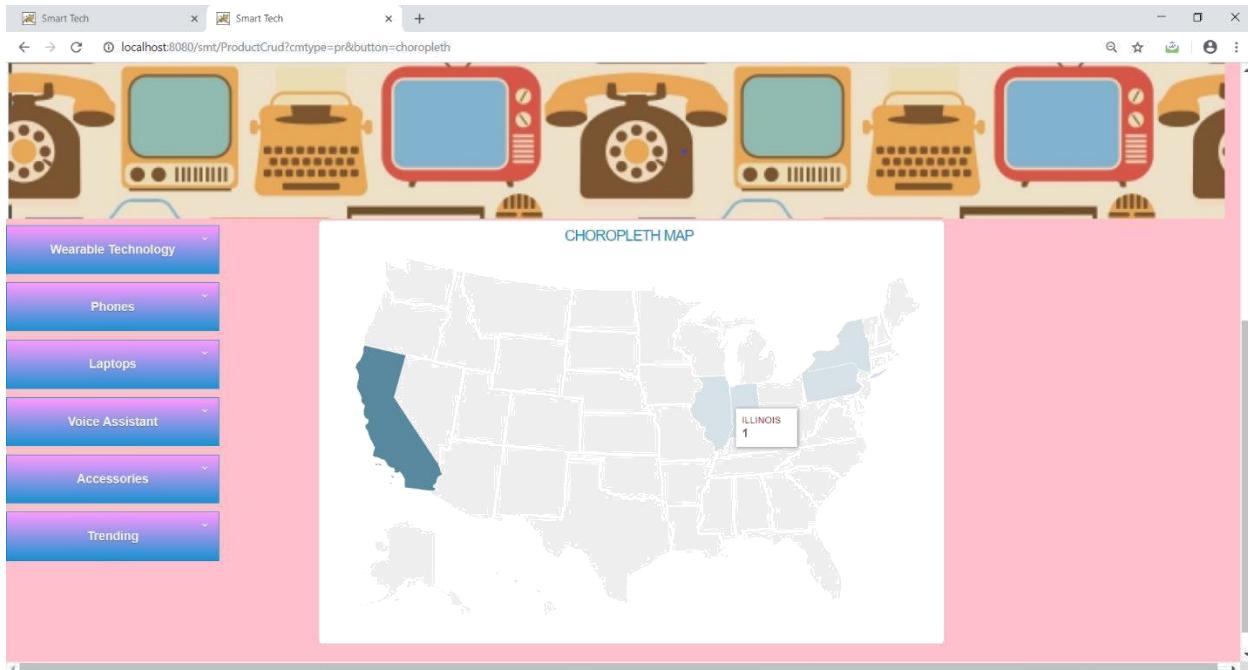


32. Menu of the Choropleth Map



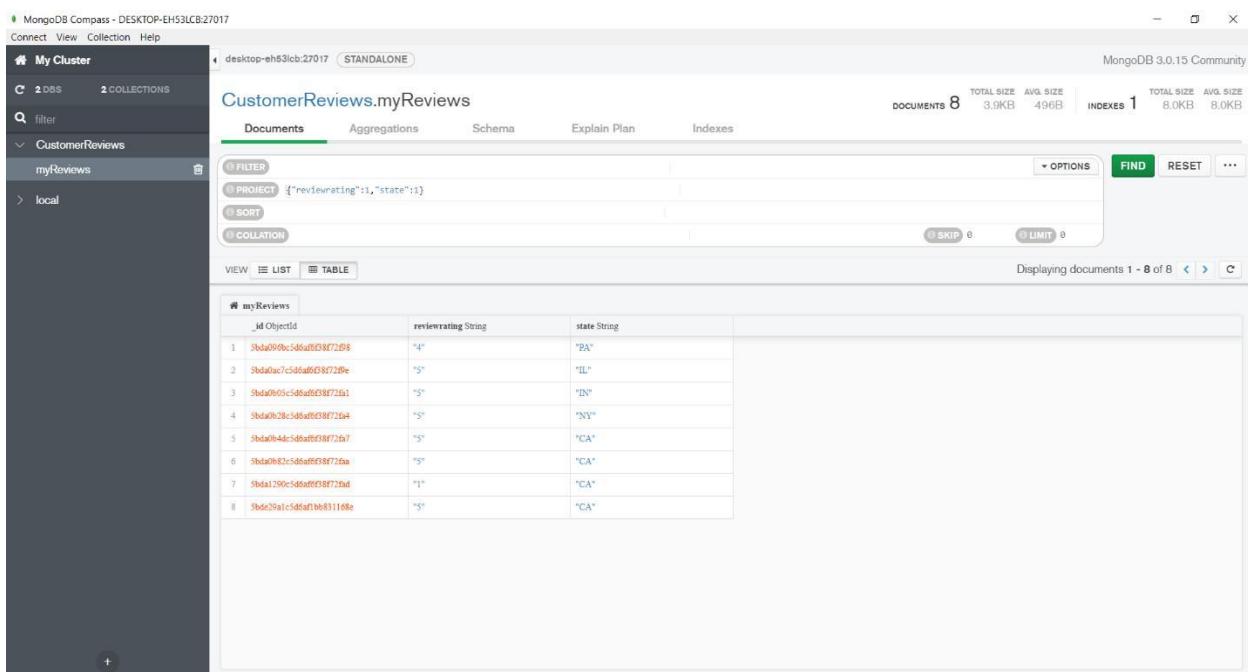
33. Choropleth Map showing the products reviewed per state



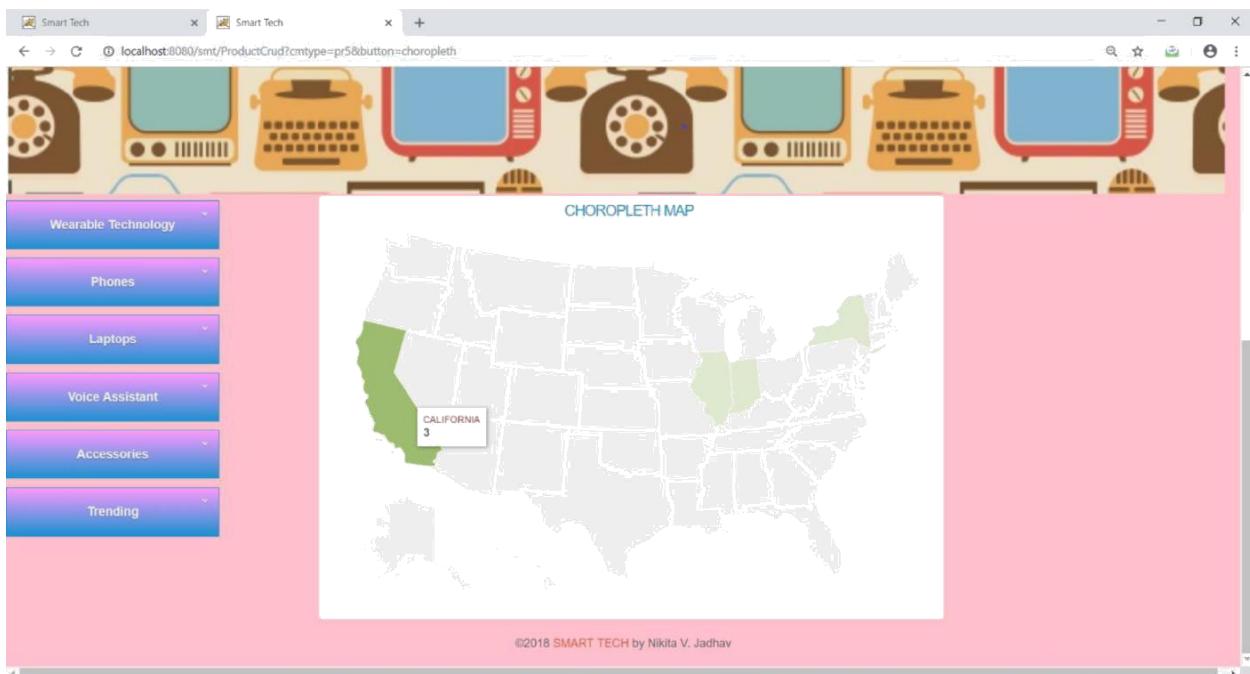
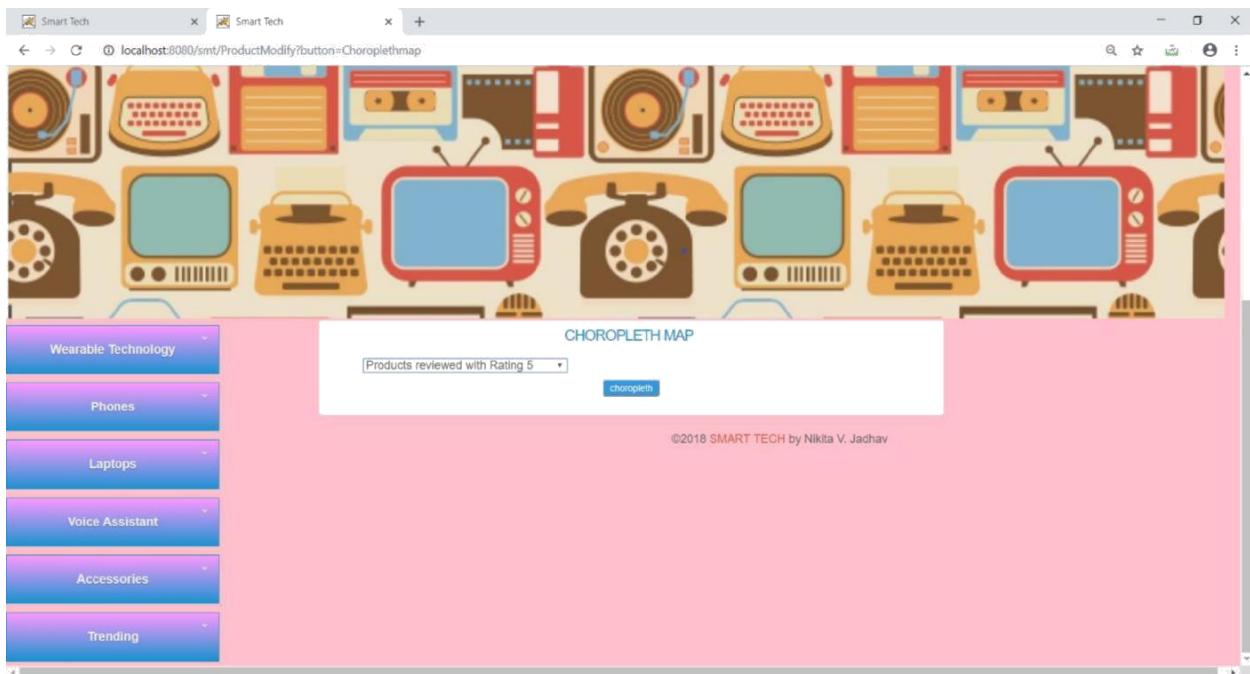


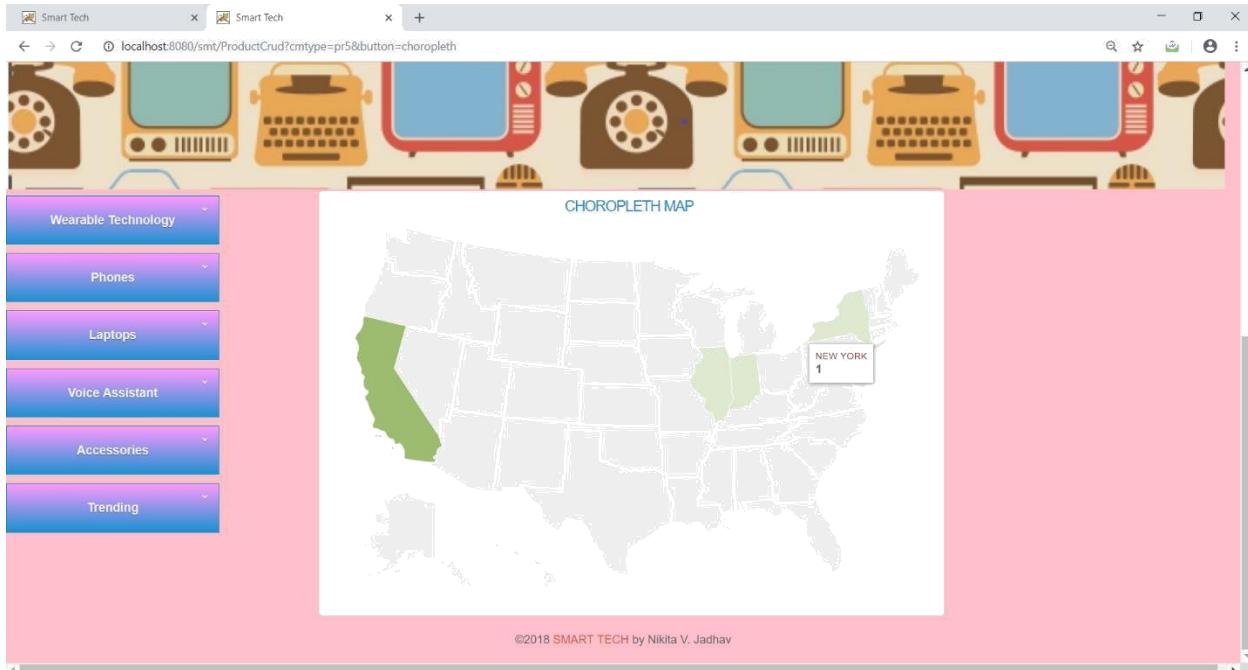
MongoDB Reviews Table indicating the number of products reviewed

Query used for coding: db.myReviews.aggregate([{"\$group": {"_id": "\$state", "count": {"\$sum": 1}}});



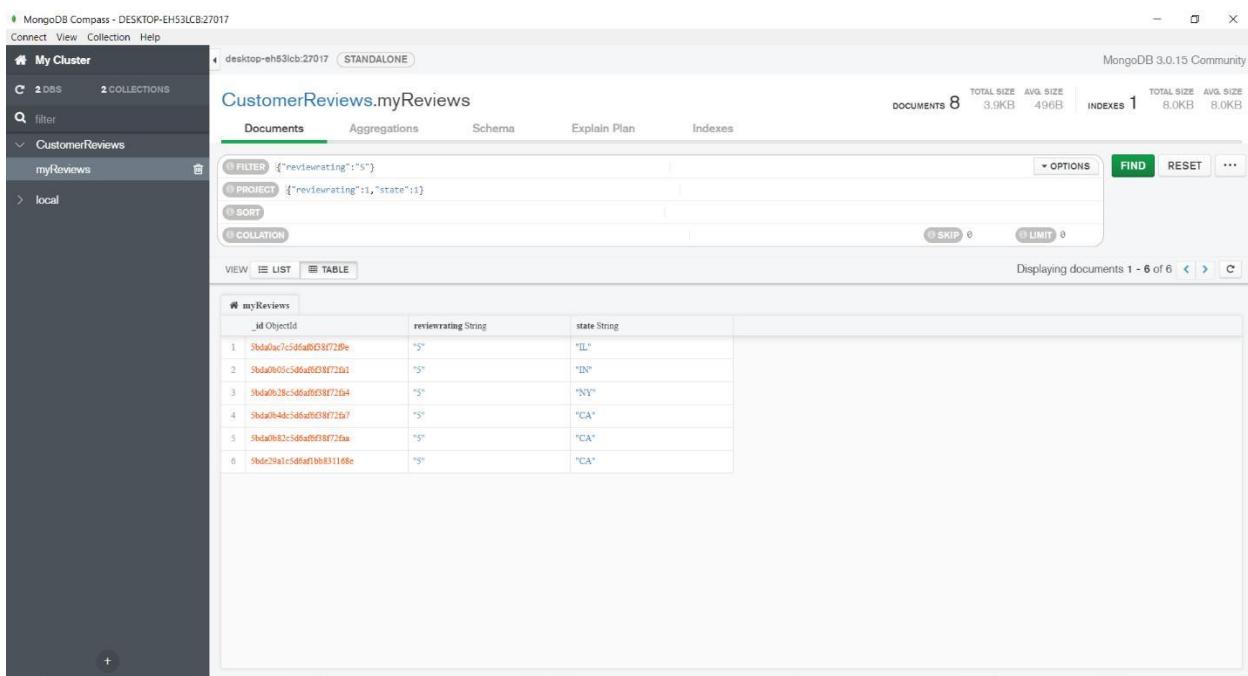
34. Choropleth Map showing the number of products reviewed with the rating as 5



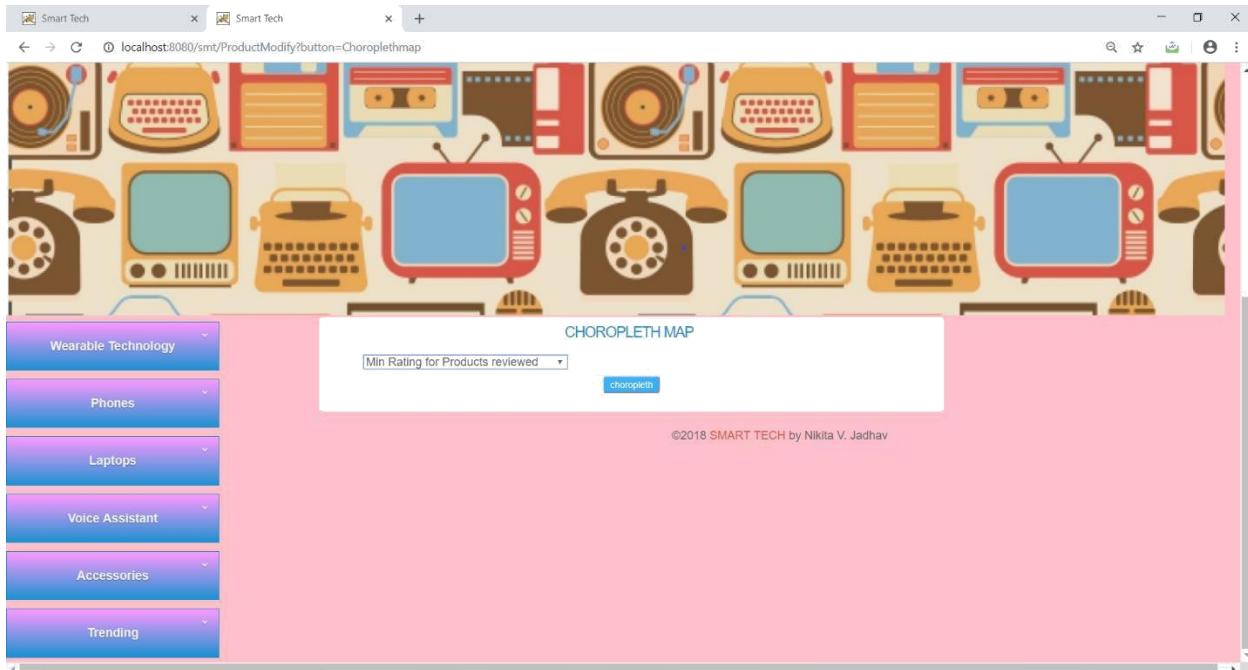


MongoDB database showing the number of products reviewed with the rating as 5

Query used for coding: db.myReviews.aggregate({ \$match : { reviewrating : "5" } },{\$group: {_id: \$state", count:{\$sum:1}}});

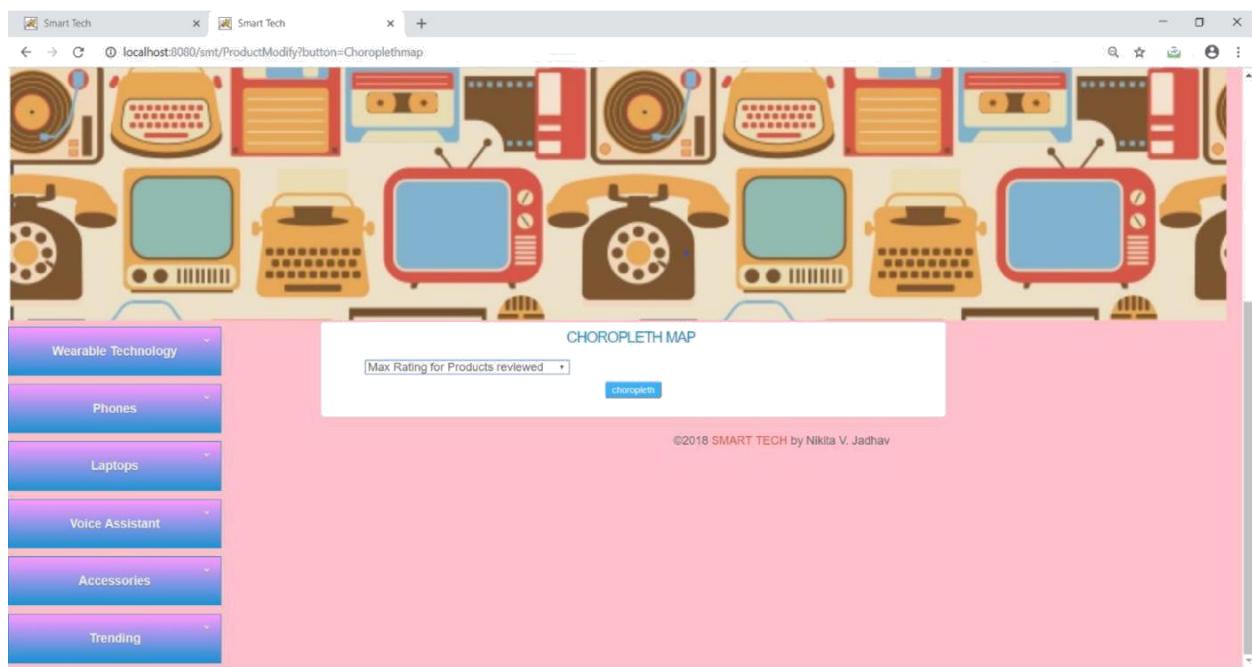
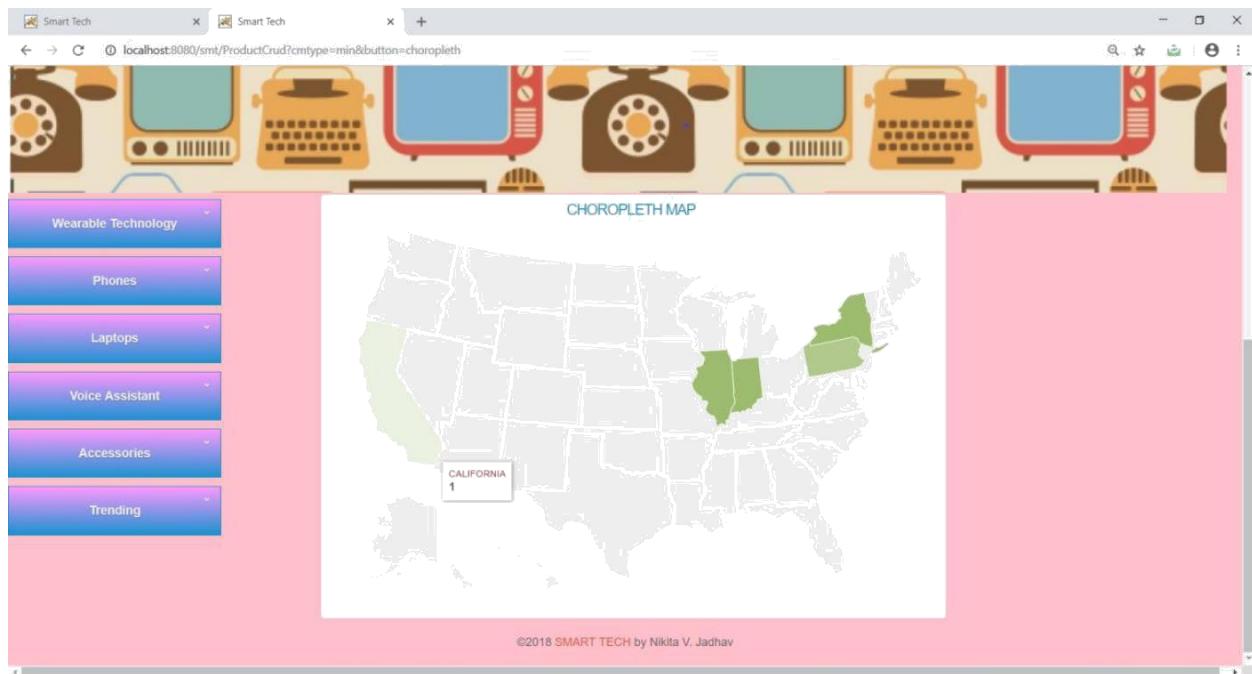


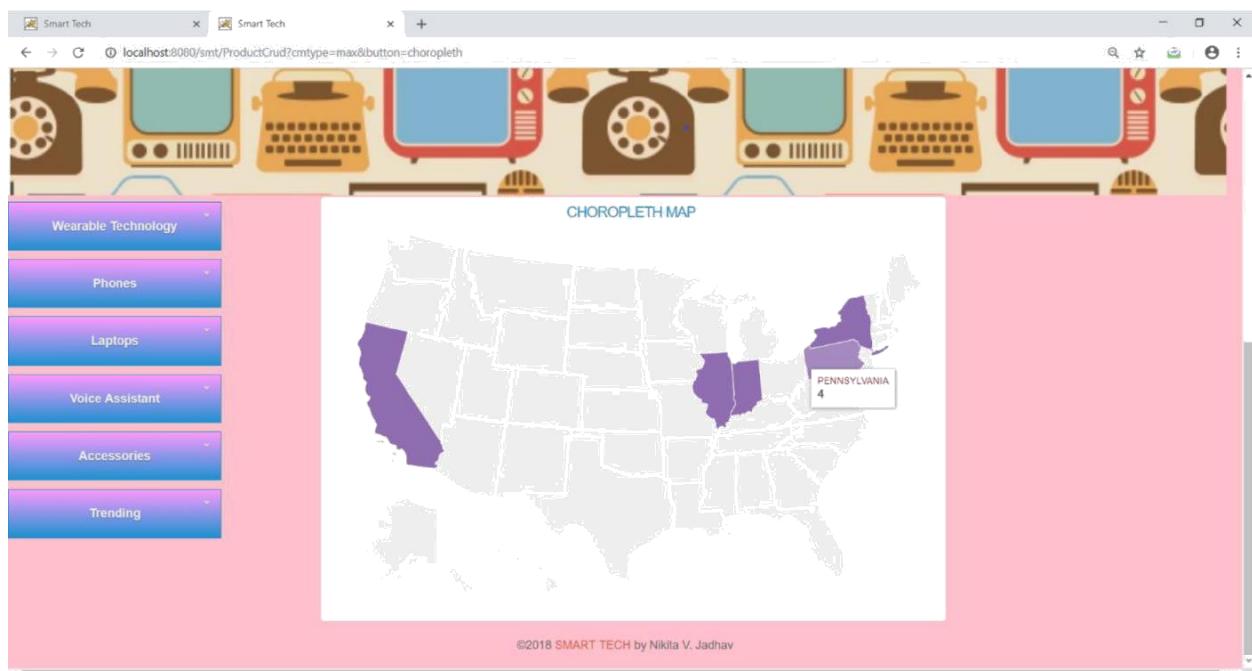
35. Min, Max & Avg Rating Based on Products reviewed per state

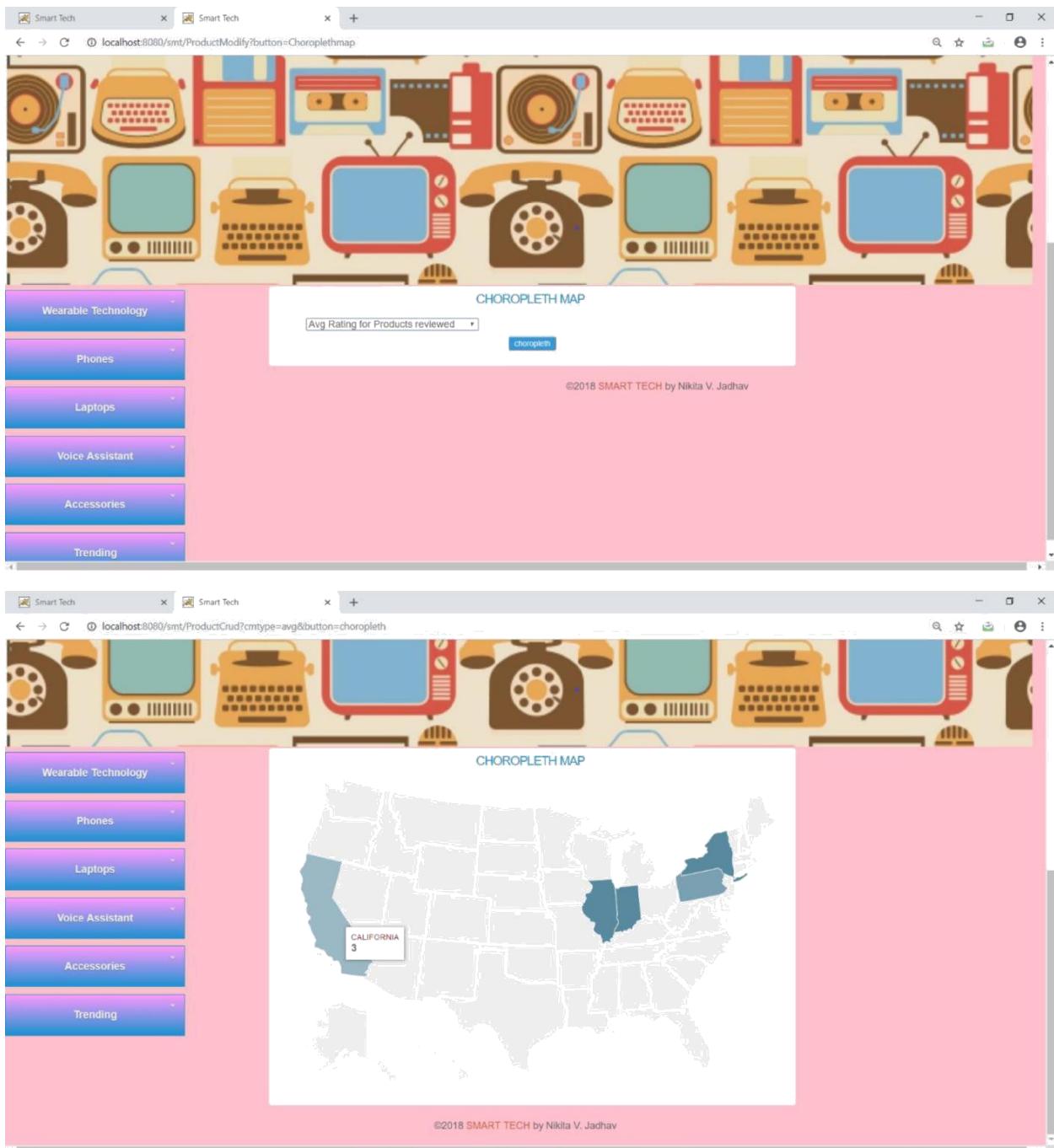


Query used for coding: db.myReviews.aggregate({ \$match : { reviewrating : "5" } },{\$group: {_id:"\$state", sum_rating: {\$sum: "\$reviewrating"},average_rating: {\$avg: "\$reviewrating"},min_rating: {\$min:"\$reviewrating"},max_rating: {\$max: "\$reviewrating"}}});

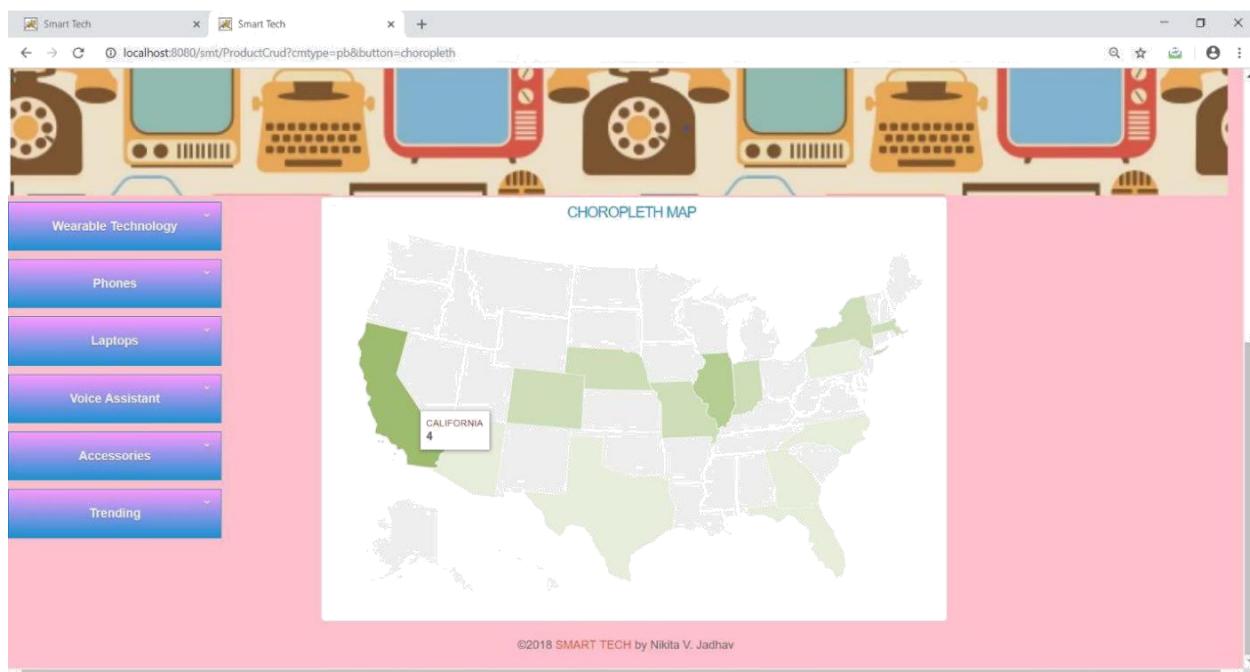
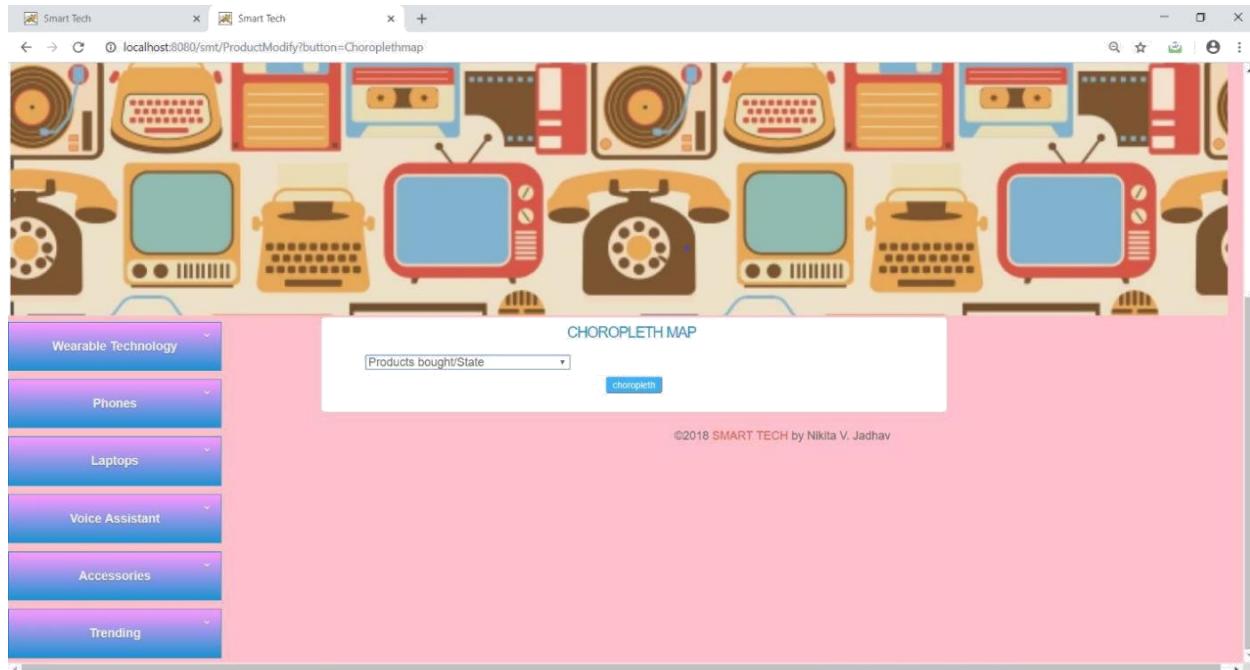
_id	reviewrating	state
5ba090c5d6a0f887268	"5"	"PA"
5ba0a0c5d6a0f88726e	"5"	"IL"
5ba0b05c5d6a0f887261	"5"	"IN"
5ba0c28c5d6a0f887264	"5"	"NY"
5ba0d4dc5d6a0f887267	"5"	"CA"
5ba0f03c5d6a0f88726a	"5"	"CA"
5ba1290c5d6a0f88726d	"5"	"CA"
5bd29a1c5d6a1fb6831168e	"5"	"CA"

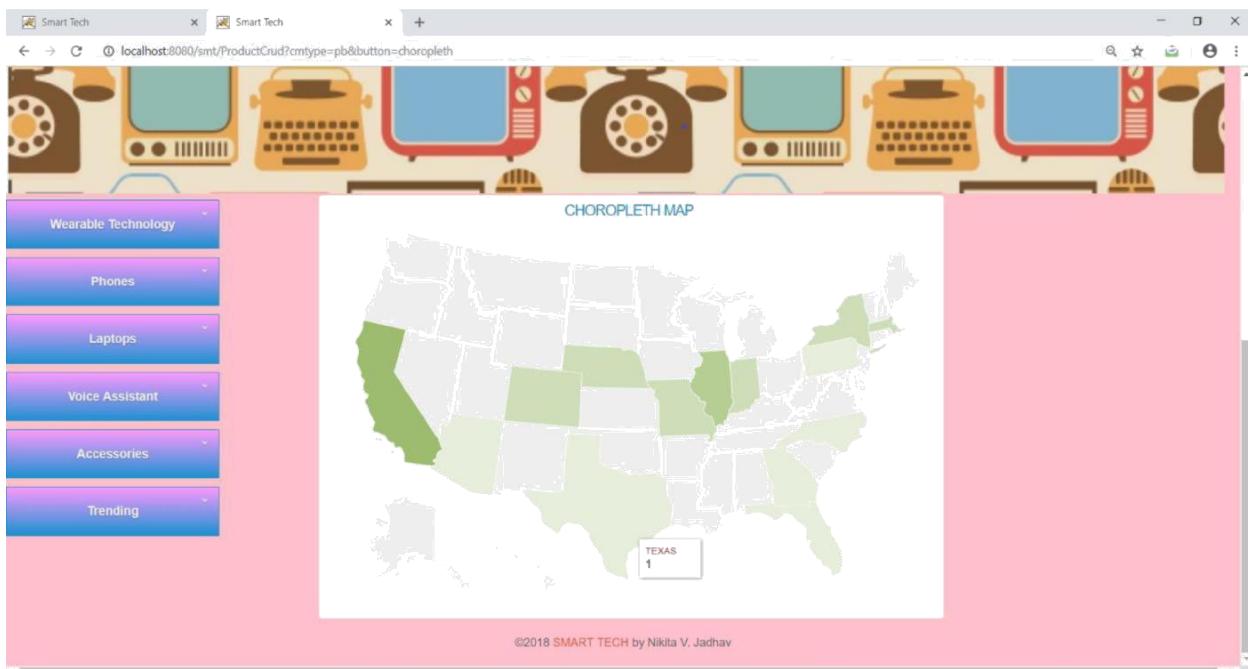
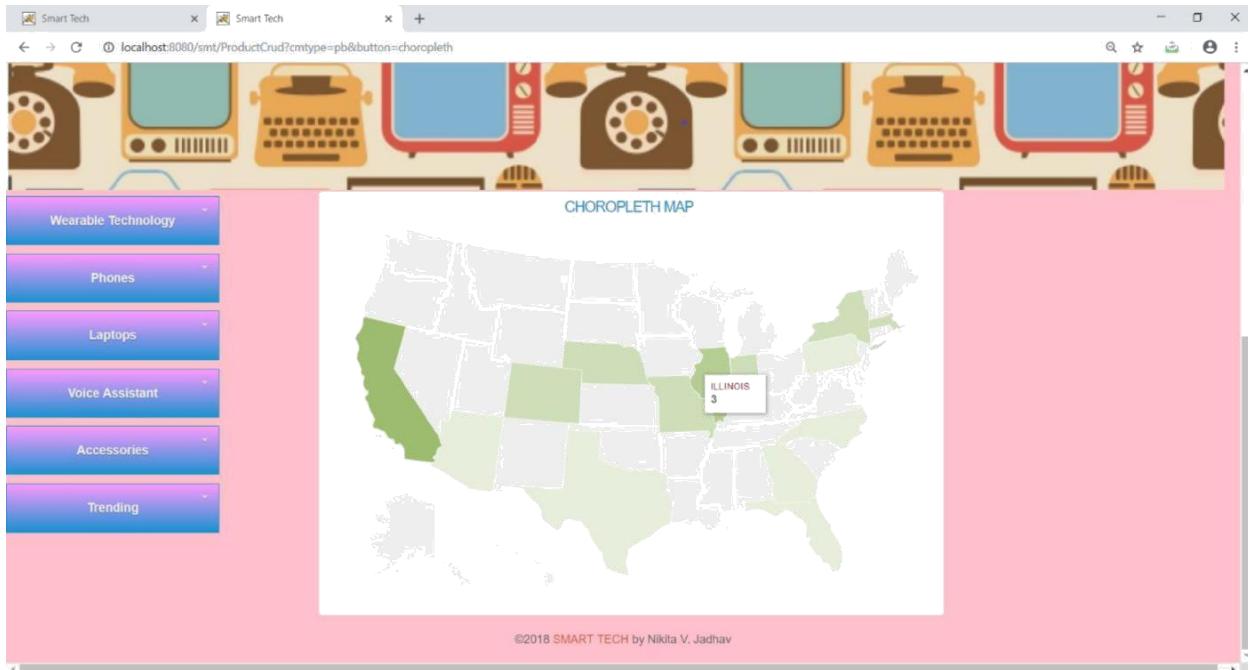






36. Choropleth Map showing the total number of products bought per state





SQL database showing the number of products brought per state

MySQL Workbench

Local instance MySQL Router

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

- Filter objects
- Functions
- mydb
- sakila
- smarttechdb**
- Tables
 - customerorders
 - product
 - product_accessories
 - productdetails
 - registration
 - Views
 - Stored Procedures

Information

Table: customerorders

Columns:

orderID	int(11) PK
username	varchar(40) PK
orderName	varchar(40) PK

Object Info Session

```

use smarttechdb;
1. select count(orderID),state,orderName,orderPrice from customerorders group by state;
2. select orderName,state from customerorders group by state;
3. select state,Avg(orderPrice) as Avgsales from customerorders group by state;
4. select state,SUM(orderPrice) as Totalsales from customerorders group by state;
5. select * from registration;
6. select * from Productdetails;
7. select * from customerorders;
8. select * from customerorders;

```

Result Grid

count(orderID)	state	orderName	orderPrice
1	AZ	Handfree Car Kit with Siri	14.99
4	CA	Apple iPhoneX	1176
2	CO	HTC VIVE VR System	149.99
1	FL	HTC VIVE VR System	149.99
1	GA	Handfree Car Kit with Siri	14.99
3	IL	Oculus Go Standalone VR Headset	199
2	IN	Handfree Car Kit with Siri	14.99
2	MA	DELL 5000 series	626.99
2	MO	Fitbit2 HearRate	129
1	NC	Echo Dot (2nd Gen)	39.99
2	NE	HP ENVY x2 12" Detachable	702.26
2	NY	Findster Duo and Pettracker	149.99
1	PA	Apple Ear Pods with Lightning con...	27.88
1	TX	Samsung Galaxy S8	549.88
2	VA	Apple iPhoneX	1176

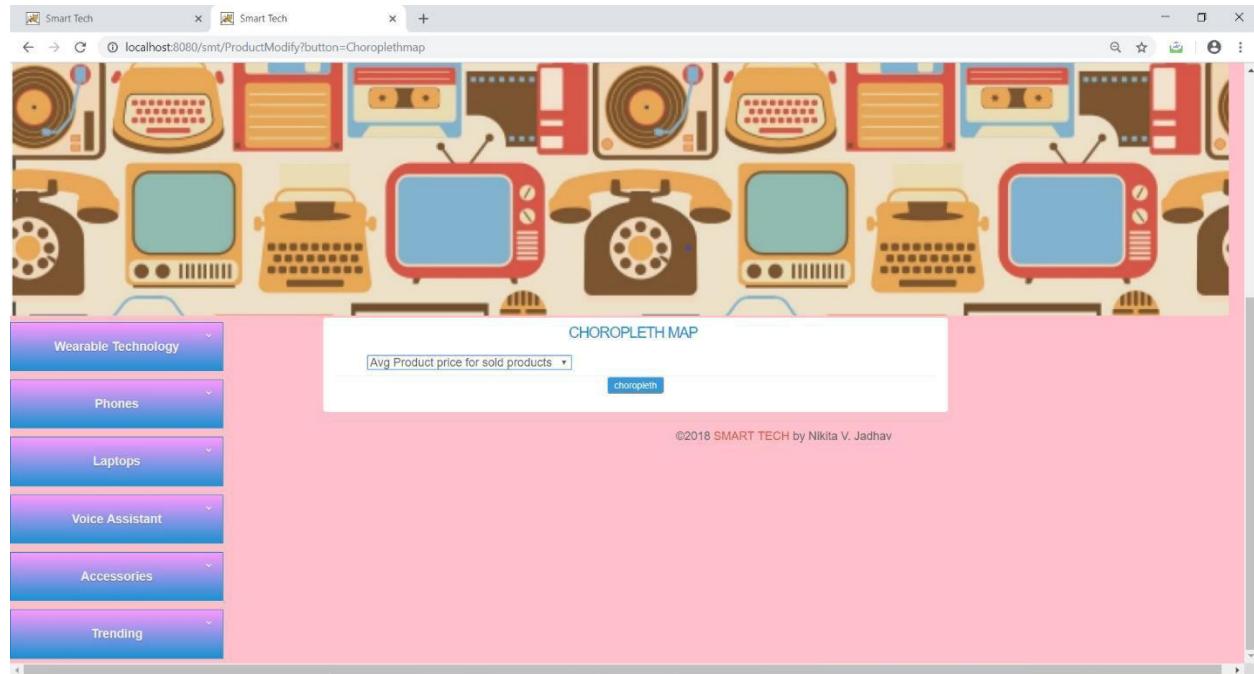
Result 290 x customerorders 291 Result 292 Result 293 registration 294 Productdetails 295 customerorders 296 product_accessories297 | Read Only

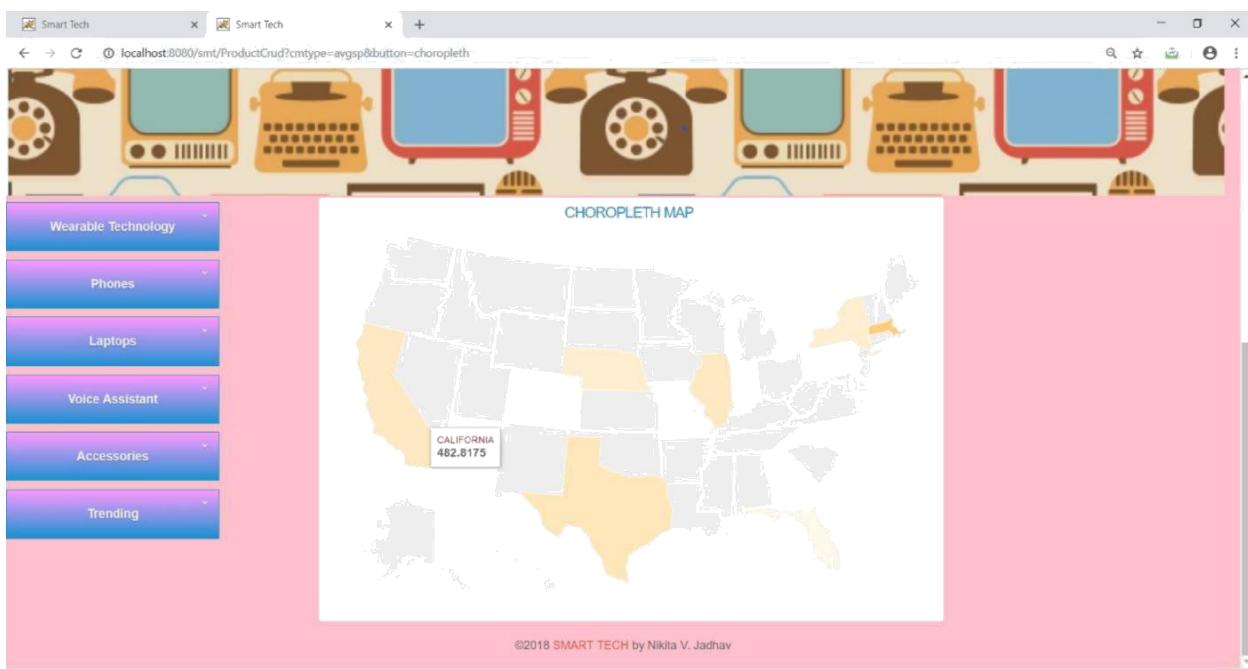
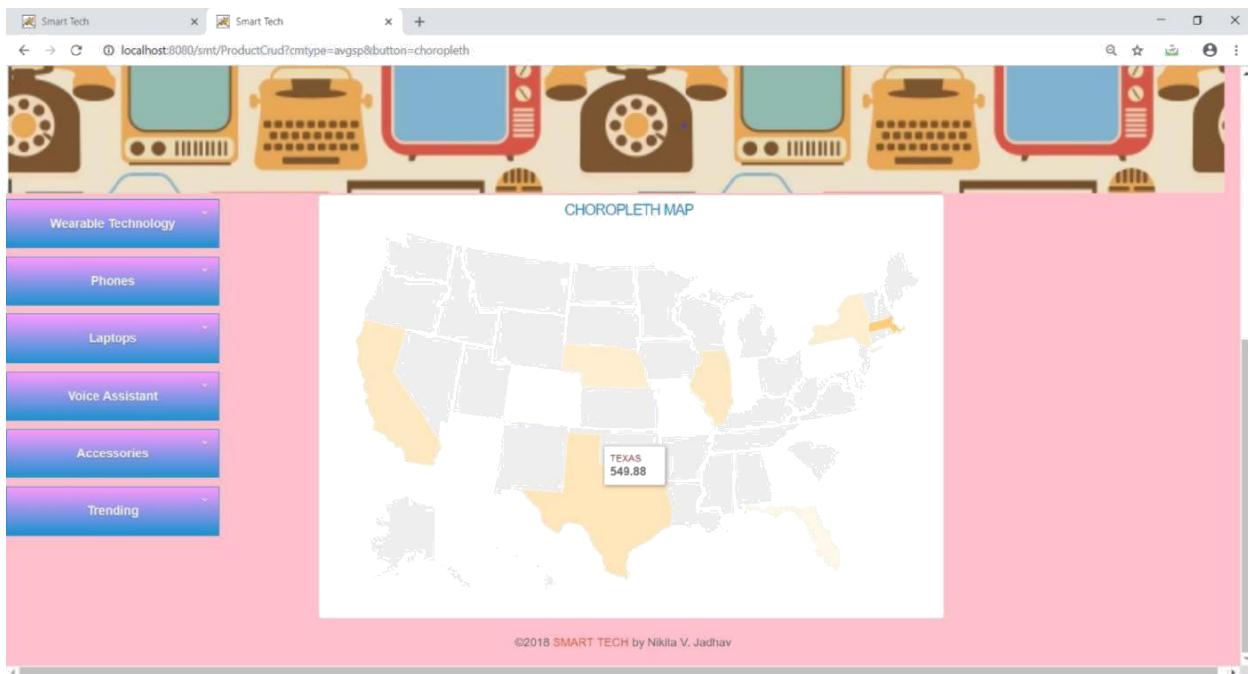
Context Help Snippets

Action Output

#	Time	Action	Message	Duration / Fetch
393	22:37:44	select state.Avg(orderPrice) as Avgsales from customerorders group by state LIMIT 0, 1000	14 row(s) returned	0.000 sec / 0.000 sec
394	22:37:44	select state.SUM(orderPrice) as Totalsales from customerorders group by state LIMIT 0, 1000	14 row(s) returned	0.000 sec / 0.000 sec
395	22:37:44	select * from registration LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
396	22:37:44	select * from Productdetails LIMIT 0, 1000	57 row(s) returned	0.000 sec / 0.000 sec
397	22:37:44	select * from customerorders LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec
398	22:37:44	select * from product_accessories LIMIT 0, 1000	13 row(s) returned	0.000 sec / 0.000 sec

. Choropleth Map showing average product prices for products sold in every state





SQL database showing Average product prices for products sold in every state

MySQL Workbench

Local instance MySQL Router

File Edit View Query Database Server Tools Scripting Help

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

Filter objects

- Functions
- mrdb
- sakila
- smartechdb
- Tables
- customerorders
- product
- product_accessories
- productdetails
- registration
- Views
- Stored Procedures

Table: customerorders

Columns:

orderID	int(11) PK
username	varchar(40) PK
orderName	varchar(40) PK

Object Info Session

SQL File 4* | SQL File 4* | SQL File 4* | SQL File 5* | SQL File 6* | SQL File 7* | SQL File 8* | SQL File 9* | SQL File 10* | SQL File 11* | SQL File 12* | SQL Additions

```

1. use smartechdb;
2. select count(orderID),state,orderName,orderPrice from customerorders group by state;
3. select orderName,state from customerorders group by state;
4. select state,Avg(orderPrice) as Avgsales from customerorders group by state;
5. select state,SUM(orderPrice) as Totalsales from customerorders group by state;
6. select * from registration;
7. select * from Productdetails;
8. select * from customerorders;

```

Result Grid | Filter Rows | Export: | Wrap Cell Content: | Result Grid | Form Editor | Field Types | Query Stats | Context Help | Snippets

state Avgsales

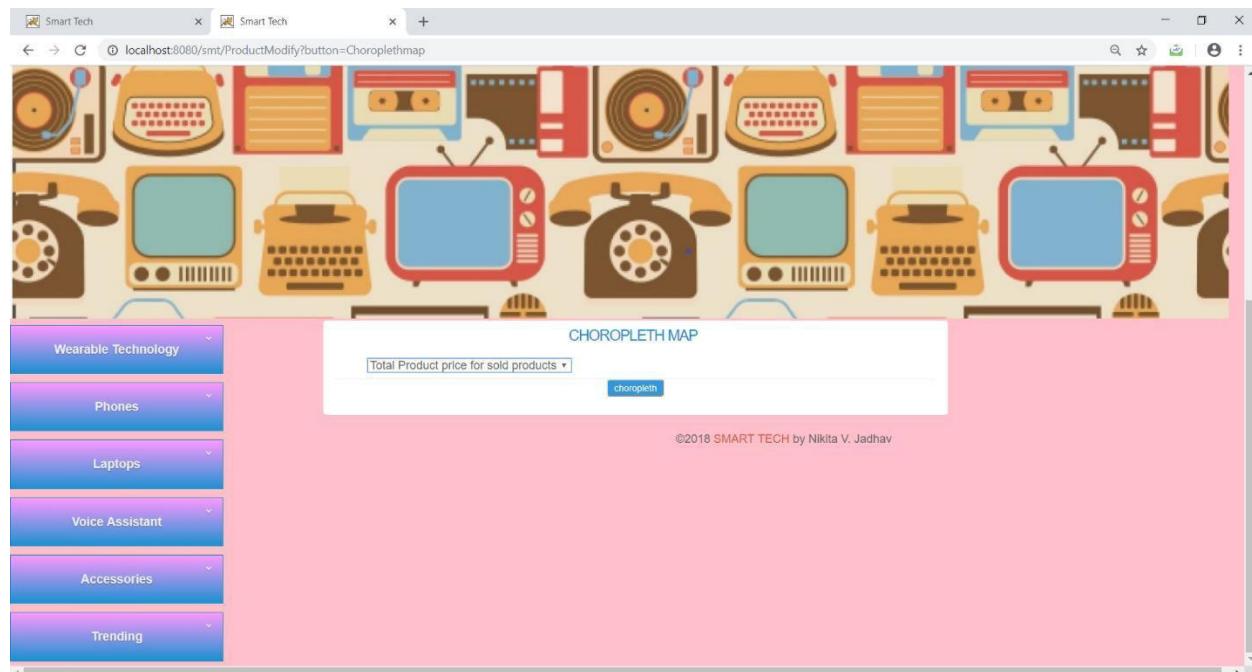
AZ	14.99
CA	482.4176
CO	89.99000000000001
FL	149.99
GA	14.99
IL	491.6633333333336
IN	95.635
MA	1064.495
MO	114.495
NC	39.99
NE	378.275
NY	377.445
PA	27.88
TX	549.88
VA	676.14

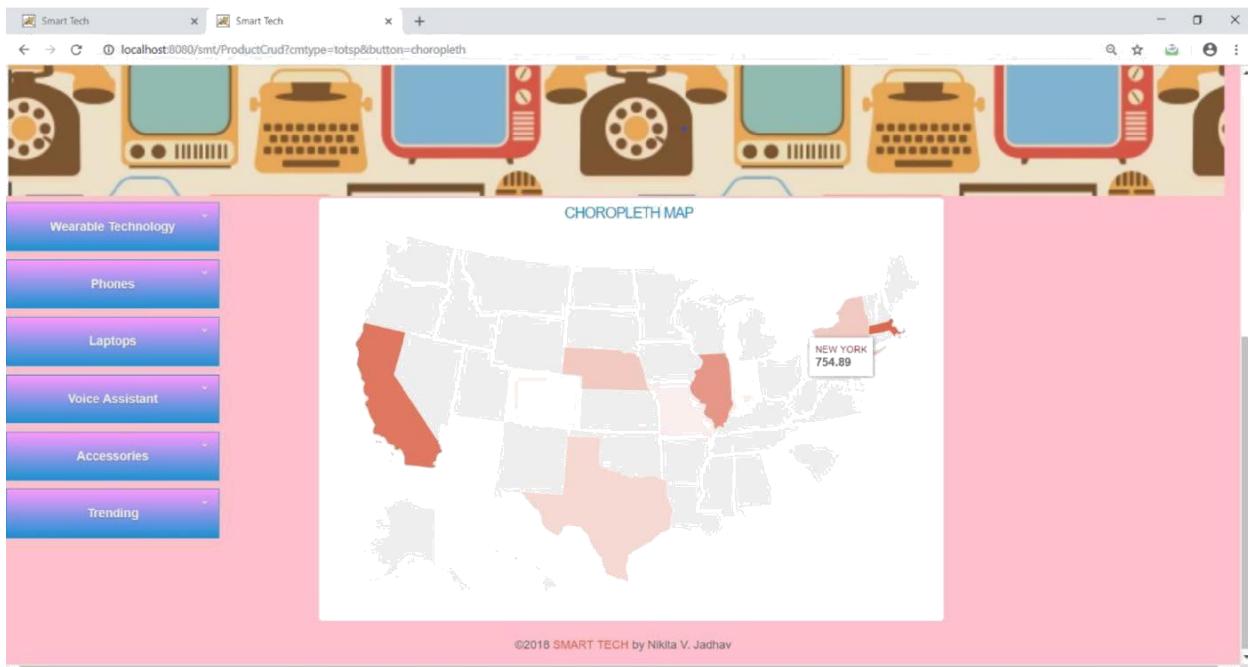
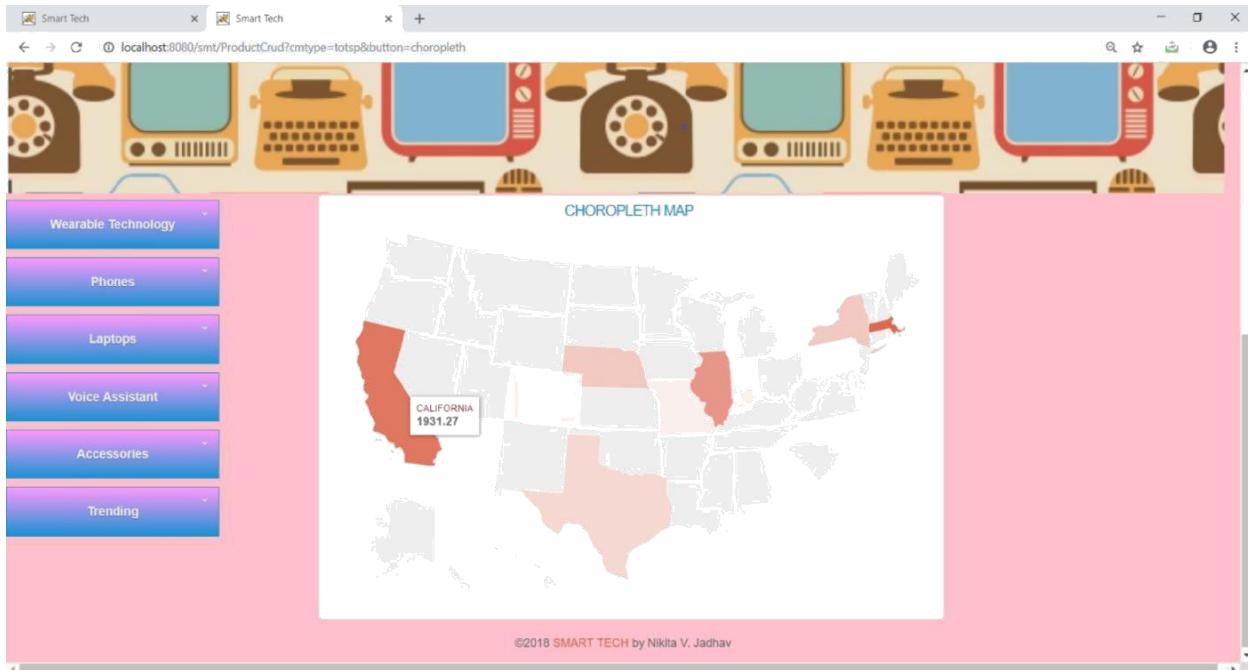
Result 299 | Action Output | Read Only

Action Output

#	Time	Action	Message	Duration / Fetch
396	22:37:44	select * from Productdetails LIMIT 0, 1000	57 row(s) returned	0.000 sec / 0.000 sec
397	22:37:44	select * from customerorders LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec
398	22:37:44	select * from product_accessories LIMIT 0, 1000	13 row(s) returned	0.000 sec / 0.000 sec
399	22:37:44	select * from product LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
400	23:19:48	select state,Avg(orderPrice) as Avgsales from customerorders group by state LIMIT 0, 1000	15 row(s) returned	0.000 sec / 0.000 sec

37. Choropleth Map showing Total price of products sold in every state





SQL database showing Total price of products sold in every state

MySQL Workbench

Local instance MySQL Router

File Edit View Query Database Server Tools Scripting Help

Navigator: MANAGEMENT, INSTANCE, SCHEMAS, INFORMATION, Table: customerorders, Column: orderid, userame, orderName, orderPrice

SQL File 4* | SQL File 4* | SQL File 4* | SQL File 5* | SQL File 6* | SQL File 7* | SQL File 8* | SQL File 9* | SQL File 10* | SQL File 11* | SQL File 12* | SQL Additions

```

1. use smartechdb;
2. select count(orderID),state,orderName,orderPrice from customerorders group by state;
3. select orderName,state from customerorders group by state;
4. select state,Avg(orderPrice) as Avgsales from customerorders group by state;
5. select state,SUM(orderPrice) as Totalsales from customerorders group by state;
6. select * from registration;
7. select * from Productdetails;
8. select * from customerorders;

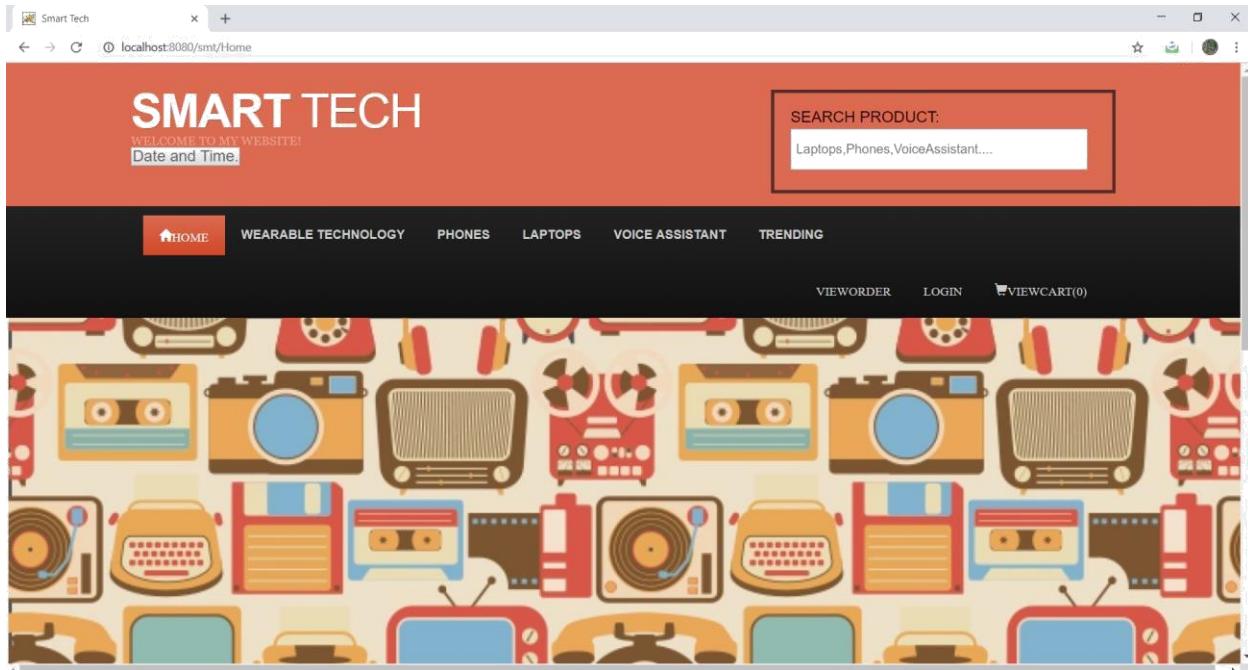
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Result 300 | Read Only | Context Help | Snippets

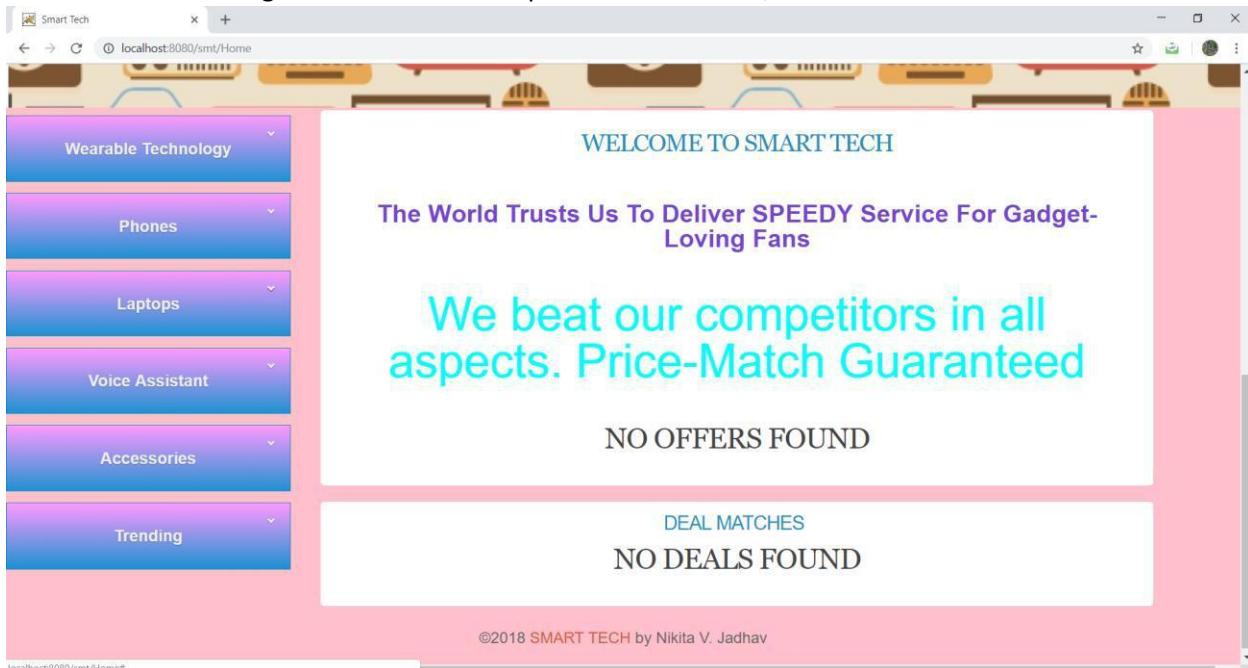
state	Totalsales
AZ	14.99
CA	1931.27
CO	179.98000000000002
FL	149.99
GA	14.99
IL	1474.99
IN	151.27
MA	2128.99
MO	228.99
NC	39.99
NE	756.55
NY	754.89
PA	27.88
TX	549.88
VA	1352.28

Action Output

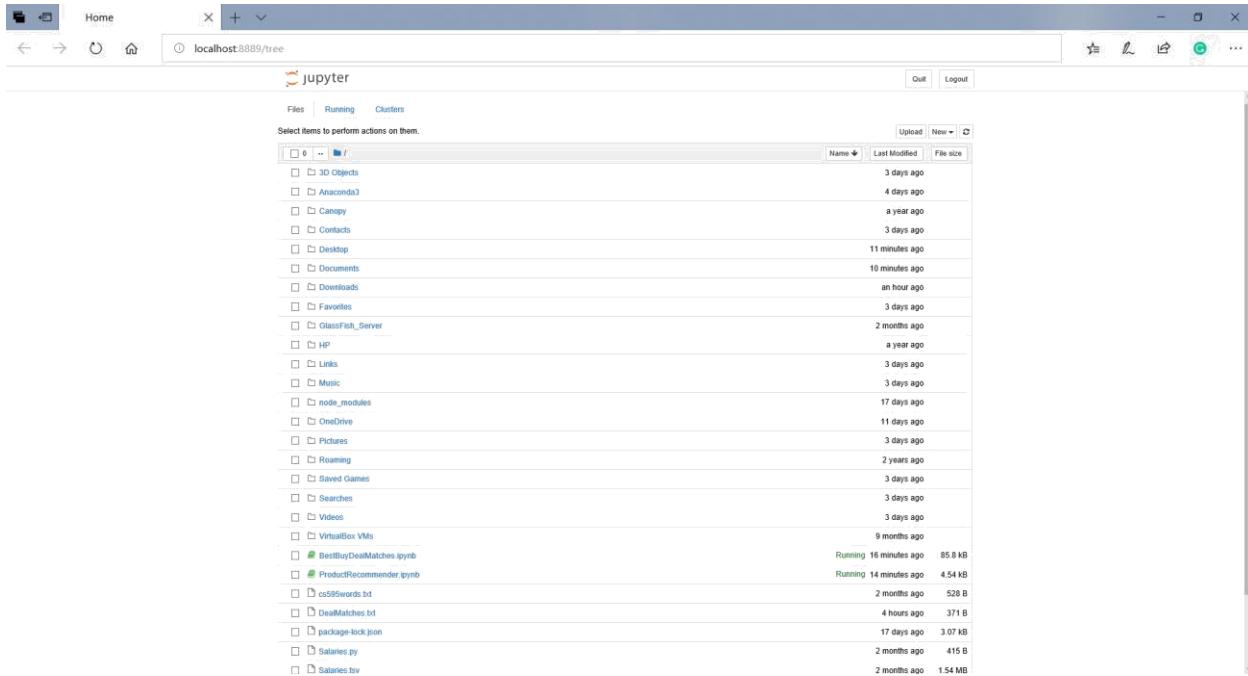
Action	Time	Message	Duration / Fetch
select * from customerorders LIMIT 0, 1000	397 22:37:44	25 row(s) returned	0.000 sec / 0.000 sec
select * from product_accessories LIMIT 0, 1000	398 22:37:44	13 row(s) returned	0.000 sec / 0.000 sec
select state LIMIT 0, 1000	399 22:37:44	0 row(s) returned	0.000 sec / 0.000 sec
select state.AVG(orderPrice) as Avgsales from customerorders group by state LIMIT 0, 1000	400 23:19:48	15 row(s) returned	0.000 sec / 0.000 sec
select state.SUM(orderPrice) as Totalsales from customerorders group by state LIMIT 0, 1000	401 23:20:45	15 row(s) returned	0.000 sec / 0.000 sec



38. Before the running the dealmatches script it shows no deals/offers found



39. Jupyter notebook loaded with BestBuyDealMatches & ProductRecommender.ipynb script files



40. After running the BestBuyDealMatches.ipynb we get 3 products on which best buy offers deals out which we will show 2 products on the website as seen in point 5

```

In [27]: # Get BestBuyDeals timeline ...
screen_name = "BestBuy_Deals"
timeline = [tweet for tweet in twitter.request('statuses/user_timeline',
                                              {'screen_name': screen_name,
                                               'count': 200})]
print ('got %d tweets for user %s' % (len(timeline), screen_name))
got 200 tweets for user BestBuy_Deals

In [28]: # Print time got created.
          timeline[0]['created_at']
Out[28]: 'Mon Nov 19 14:00:02 +0000 2018'

In [29]: # Print the text.
          print ('\n\n'.join(t['text'] for t in timeline))
Save $100 on the Sharp 43" Class LED 1080p Smart HDTV Roku TV. #Deal

Save $150 on the Lenovo Yoga 730 2 in 1 15.6" Touch Screen Laptop Intel Core i5 8GB Memory 256GB Solid State Drive - Iron Gray. #Deal

RT @BestBuy: ❤️ this tweet to get the best deals on the perfect gifts! We will alert you as soon as new #BestBuyBlackFriday deals arrive.

Save $20 on the Insignia 19" Class LED 720p HDTV. #Deal

Save $400 on the Lenovo Yoga 920 2 in 1 13.9" 4K Ultra HD Touch Screen Laptop Intel Core i7 16GB Memory 512GB SSD - Platinum. #Deal

```

```

File Edit View Insert Cell Kernel Widgets Help
Logout Trusted Python 3
Home BestBuyDealMatches + < > ⌂ localhost:8889/notebooks/BestBuyDealMatches.ipynb
Jupyter BestBuyDealMatches Last Checkpoint: 2 hours ago (unsaved changes)
Find the deals in the BestBuy_Deal tweets that match products in SmartPortables MySQL product table
In [32]: import re
import pymysql
cnx = pymysql.connect(user='root', password='niku123',
host='127.0.0.1',
database='smarttechdb')
cursor = cnx.cursor()
query = ("SELECT productName FROM ProductDetails")
cursor.execute(query)

dealMatchGuaranteed=[]
for product in cursor:
    for tweet in timeline:
        deal = (tweet['text']).encode('ascii','ignore')
        if (len(re.findall(r'\b'+product[0]+'\b',deal.decode('utf-8')))>=1):
            dealMatchGuaranteed.append(deal.decode('utf-8'))

```

```

In [33]: # Verify Test that we got some deals
dealMatchGuaranteed[13]
Out[33]: "Save $150 on the Apple MacBook Air 13.3" Display Intel Core i5 8GB Memory 256GB Flash Storage - Silver. #deal",
"Save $100 on the HP 2 in 1 12.3" Touch Screen Chromebook Intel Core M 4GB Memory 32GB - Ceramic White. #deal",
"Save $250 on the Dell 2 in 1 15.6" 4K Ultra HD Touch Screen Laptop Intel Core i7 16GB Memory NVIDIA GeForce MX130 5 https://t.co/PW%faield"

```

```

Create and write the deals into DealMatches.txt file that will be used by web-app
of SmartPortables to display two deal matches
In [34]: dealMatchfile = open('C:/tomcat-7.0.34-preconfigured/apache-tomcat-7.0.34/webapps/smt/DealMatches.txt', 'w')
for deal in dealMatchGuaranteed:
    dealMatchfile.write("%s\n" % deal)
dealMatchfile.close()

```

41. The same is reflected in the DealMatches.txt file in the folder smt

```

DealMatches.txt - Notepad
File Edit Format View Help
Save $150 on the Apple MacBook Air 13.3" Display Intel Core i5 8GB Memory 256GB Flash Storage - Silver. #
Save $100 on the HP 2 in 1 12.3" Touch Screen Chromebook Intel Core M 4GB Memory 32GB - Ceramic White. #
Save $250 on the Dell 2 in 1 15.6" 4K Ultra HD Touch Screen Laptop Intel Core i7 16GB Memory NVIDIA GeForce MX130 5 https://t.co/PW%faield"

```

42. On loading our website, we can see the see the deals offered by best buy as well as the deal matches

Smart Tech

localhost:8080/smt/Home

WELCOME TO SMART TECH

The World Trusts Us To Deliver SPEEDY Service For Gadget-Loving Fans

We beat our competitors in all aspects. Price-Match Guaranteed

Save \$250 On The Dell 2 In 1 15.6" 4K Ultra HD Touch Screen Laptop Intel Core i7 16GB Memory NVIDIA GeForce MX130 5
<Https://T.Co/PMvRfaWwld>

Save \$100 On The HP 2 In 1 12.3" Touch Screen Chromebook Intel Core M 4GB Memory 32GB - Ceramic White. #Deal

Smart Tech

localhost:8080/smt/Home

<Https://T.Co/PMvRfaWwld>

Save \$100 On The HP 2 In 1 12.3" Touch Screen Chromebook Intel Core M 4GB Memory 32GB - Ceramic White. #Deal

DEAL MATCHES

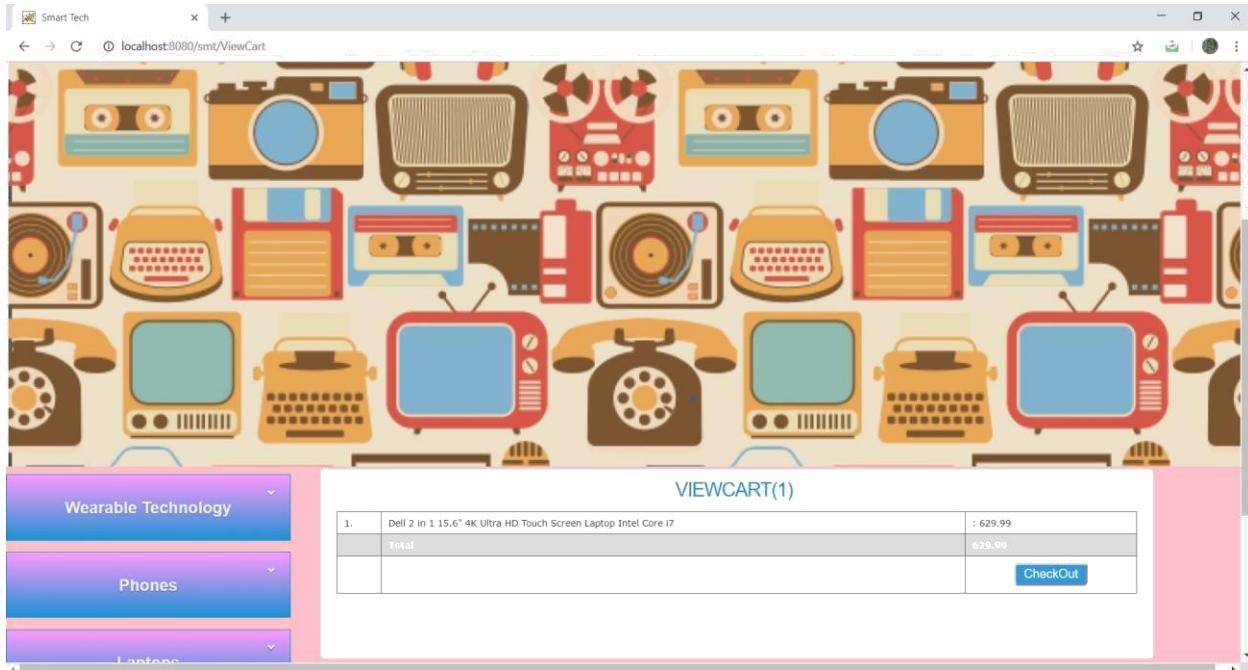
Dell 2 In 1 15.6" 4K Ultra HD Touch Screen Laptop Intel Core i7
629.99\$

Buy Now
WriteReview
ViewReview

HP 2 In 1 12.3" Touch Screen Chromebook Intel Core M 4GB Memory 32GB
798.6\$

Buy Now
WriteReview
ViewReview

43. We can even make a purchase for the same



44. We shall run the productrecommender.ipynb script file and we get results of the products recommended for the 2 users NIKITA & SHRIYA based on the logic of the script file

```

In [35]: import os
import csv
from surprise import BaselineOnly
from surprise import Dataset
from surprise import Reader
from surprise import SVD
from surprise import SVDpp
from surprise import accuracy
from surprise.model_selection import cross_validate
from surprise.model_selection import train_test_split
from collections import defaultdict

In [36]: pr_file_path = "/tomcat-7.0.24-preconfigured/apache-tomcat-7.0.34/webapps/sat/"
os.chdir('C:/Program Files/MongoDB/Server/3.0/bin')
os.system('mongodump --db CustomerReviews --collection myReviews --type=csv >pr_file_path/mongodata_train.csv')
with open(pr_file_path + "mongodata_train.csv", "r") as f:
    reader = csv.DictReader(f, delimiter=',')
    with open(pr_file_path + "mongodata_test.csv", "w", newline='') as f_out:
        writer = csv.DictWriter(f_out, fieldnames=reader.fieldnames, delimiter=',')
        for row in reader:
            writer.writerow(row)

file_path = os.path.expanduser(pr_file_path + "/mongodata_test.csv")

# As we're loading a custom dataset, we need to define a reader. In the
# movieLens100k dataset, each line has the following format:
# user item rating
# So let's define a simple Reader for our data.
reader = Reader(line_format='user item rating', sep=',')
dset = Dataset.load_from_file(file_path, reader=reader)

def get_top_N(predictions, n=10):
    """Return the top-N recommendation for each user from a set of predictions.

    Args:
        predictions(list of Prediction objects): The list of predictions,
            returned by the test method of an algorithm.
        n(int): The number of recommendation to output for each user. Default
            is 10.

    Returns:
        A dict where keys are user (raw) ids and values are lists of tuples:
        [(raw item id, rating estimation), ...] of size n.
    """

    # First map the predictions to each user.
    top_n = defaultdict(list)
    for uid, iid, true_r, est, _ in predictions:
        top_n[iid].append((uid, est))

    return top_n

```

```

# Returns:
# A dict where keys are user (raw) ids and values are lists of tuples:
# [(raw item id, rating estimation), ...] of size n.
...
# First map the predictions to each user.
top_n = defaultdict(list)
for uid, iid, true_r, est, _ in predictions:
    top_n[iid].append((uid, est))

# Then sort the predictions for each user and retrieve the k highest ones.
for uid, user_ratings in top_n.items():
    user_ratings.sort(key=lambda x:x[1], reverse=True)
    top_n[uid] = user_ratings[:n]

return top_n

# First train an SVD algorithm on the movieLens dataset.
data = Dataset.load_from_file(file_path, reader=reader)
trainset = data.build_full_trainset()
algo = SVD()
algo.fit(trainset)

# Then predict ratings for all pairs (u, i) that are NOT in the training set.
testset = trainset.build_anti_testset()
predictions = algo.test(testset)

top_n = get_top_n(predictions, n=3)

# Print the recommended items for each user
for uid, user_ratings in top_n.items():
    print(uid, [iid for (iid, _) in user_ratings])

out = open(pr_file_path, 'output.csv', 'w', newline='')
output = csv.writer(out)
output.writerow([uid, [iid for (uid, _) in user_ratings]])
out.close()

NIKITA ['sam3', 'app3', 'lap2']
SHRIYA ['vol1', 'sam2', 'hplap3']

```

CustomerReviews.myReviews

	_id	username	productname	reviewrating
1	5ba098e1d8a0f087268	"NIKITA"	"app2"	"4"
2	5ba0a07c5d8a0f087264	"NIKITA"	"sam1"	"5"
3	5ba0b28c5d8a0f087264	"NIKITA"	"hplap1"	"5"
4	5ba0b4dc5d8a0f087267	"NIKITA"	"gh1"	"5"
5	5ba0b82c5d8a0f0872fa	"NIKITA"	"vol"	"5"
6	5ba1290c5d8a0f0872bd	"NIKITA"	"lap1"	"1"
7	5ba1ef05d8a0f087311	"SHRIYA"	"sam3"	"5"
8	5baed4b5d8a0f087316	"SHRIYA"	"lap2"	"1"
9	5baee2c5d8a0f087319	"SHRIYA"	"gh1"	"5"
10	5bafe64c5d8a0f08731c	"SHRIYA"	"app3"	"5"

45. 3 files are written onto the smt folder named mongodata_test.csv, mogodata_train.csv 7 extracted from the mongoDB and output.csv generated after running the productrecommender.ipynb script

File Home Share View

Search smt

Name	Date modified	Type	Size
US-map4.htm	10/31/2018 8:08 PM	HTM File	49 KB
US-map5.htm	10/31/2018 8:04 PM	HTM File	49 KB
US-mapavg.htm	10/31/2018 7:47 PM	HTM File	49 KB
US-mapmax.htm	10/31/2018 7:43 PM	HTM File	49 KB
US-mapmin.htm	10/31/2018 7:39 PM	HTM File	49 KB
US-map2.htm	10/31/2018 2:17 PM	HTM File	49 KB
US-map3.htm	10/31/2018 2:12 PM	HTM File	49 KB
US-map1.htm	10/31/2018 2:07 PM	HTM File	49 KB
Header.html	10/28/2018 10:00 ...	HTML File	4 KB
Left_Nav.html	10/20/2018 7:35 PM	HTML File	5 KB
Content.html	9/23/2018 8:07 PM	HTML File	3 KB
Footer.html	9/22/2018 7:44 PM	HTML File	1 KB
img12.jpg	9/19/2018 12:00 AM	JPG File	171 KB
data.xlsx	6/11/2015 12:16 AM	Microsoft Excel 97...	37 KB
mongodata_test.csv	11/20/2018 4:47 PM	Microsoft Excel Co...	1 KB
mongodata_train.csv	11/20/2018 4:47 PM	Microsoft Excel Co...	1 KB
output.csv	11/20/2018 4:47 PM	Microsoft Excel Co...	1 KB
DealMatches.txt	11/20/2018 4:40 PM	Text Document	1 KB
credentials.txt	11/14/2018 4:19 PM	Text Document	1 KB
PaymentDetails.txt	10/13/2018 2:32 AM	Text Document	3 KB
UserDetails.txt	10/6/2018 12:29 PM	Text Document	1 KB
NIKITA			
NIKITA	app2	4	
NIKITA	sam2	5	
NIKITA	hlap3	5	
NIKITA	gh1	5	
NIKITA	vo1	5	
NIKITA	lap1	1	
SHRIYA	sam3	5	
SHRIYA	lap2	1	
SHRIYA	gh1	3	
SHRIYA	app3	5	

59 items 3 items selected 396 bytes

Autosave (OFF)

mongodata_test.csv - Excel

File Home Insert Draw Page Layout Formulas Data Review View Help Tell me

Clipboard Font Alignment Number Styles Cells Editing

NIKITA

A	B	C
1	NIKITA	app2
2	NIKITA	sam2
3	NIKITA	hlap3
4	NIKITA	gh1
5	NIKITA	vo1
6	NIKITA	lap1
7	SHRIYA	sam3
8	SHRIYA	lap2
9	SHRIYA	gh1
10	SHRIYA	app3

mongodata_test

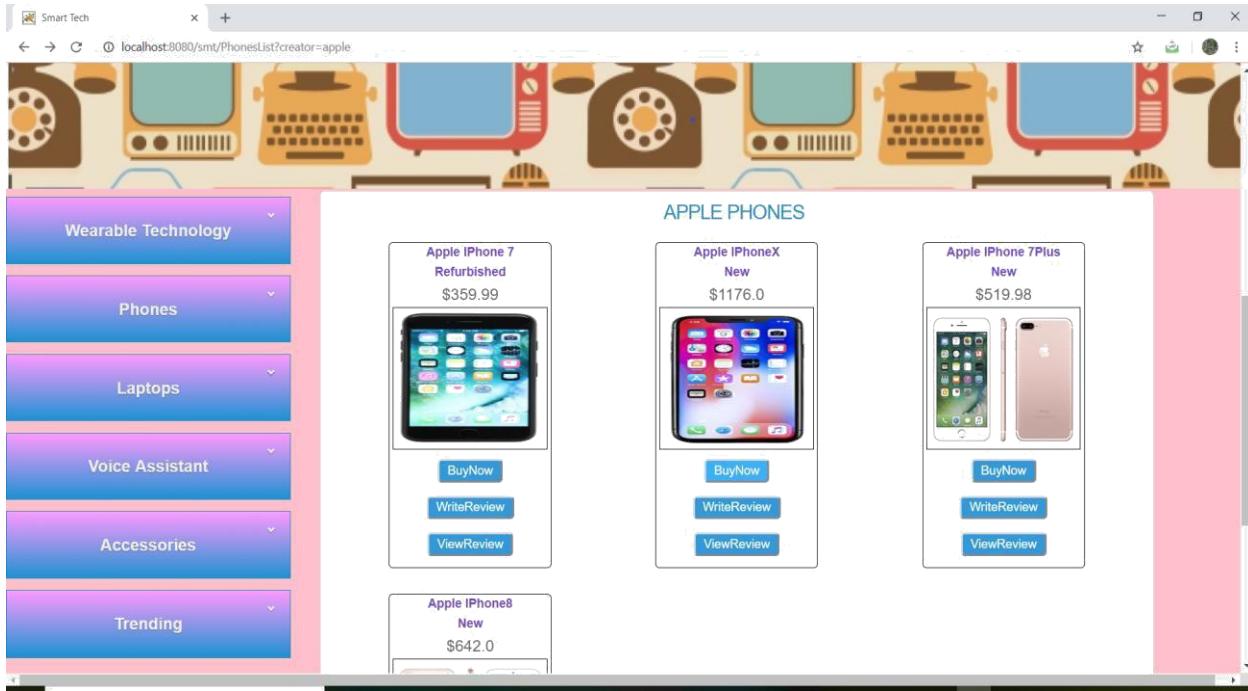
mongodata_train.csv - Excel

username	productna	review	rating
NIKITA	app2		4
NIKITA	sam2		5
NIKITA	hplap3		5
NIKITA	gh1		5
NIKITA	vo1		5
NIKITA	lap1		1
SHRIYA	sam3		5
SHRIYA	lap2		1
SHRIYA	gh1		3
SHRIYA	appp3		5

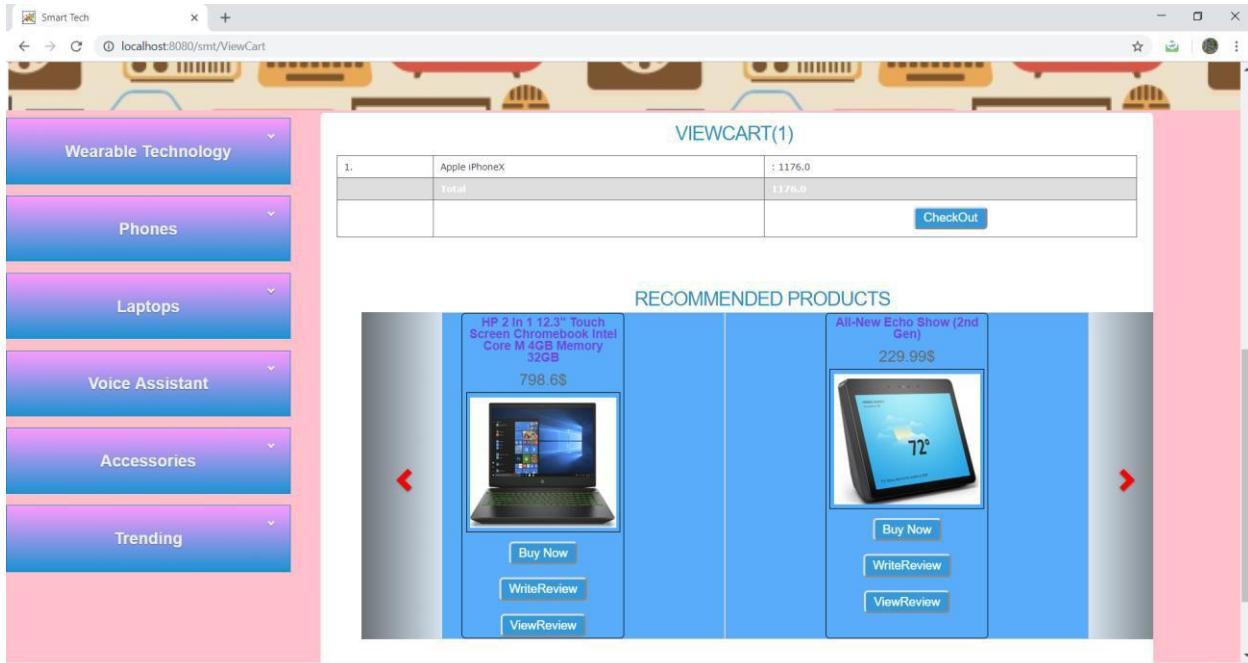
output.csv - Excel

NIKITA	['sam3', 'appp3', 'lap2']
SHRIYA	['vo1', 'sam2', 'hplap3']

46. We go for purchasing Apple iPhone X



47. Here we can see the carousel consisting 3 recommended products based on the input data from mongoDB. P.N: Input data from the mongoDB is shown in point 7 & 8



48. We can purchase for instance Samsung Note8 as well as review it shown as follows

Smart Tech

localhost:8080/smt/ViewCart

Wearable Technology

Phones

Laptops

Voice Assistant

Accessories

Trending

VIEWCART(1)

1.	Apple iPhoneX	: 1176.0
	Total	: 1176.0
		CheckOut

RECOMMENDED PRODUCTS

All-New Echo Show (2nd Gen)
229.99\$
72°
[Buy Now](#)
[WriteReview](#)
[ViewReview](#)

Samsung Note8
604.9\$
[Buy Now](#)
[WriteReview](#)
[ViewReview](#)

localhost:8080/smt/ViewCart#myCarousel0

Smart Tech

localhost:8080/smt/ViewCart

Wearable Technology

Phones

Laptops

Voice Assistant

Accessories

Trending

VIEWCART(2)

1.	Apple iPhoneX	: 1176.0
2.	Samsung Note8	: 604.9
	Total	: 1780.9
		CheckOut

RECOMMENDED PRODUCTS

All-New Echo Show (2nd Gen)
229.99\$
72°
[Buy Now](#)
[WriteReview](#)
[ViewReview](#)

Samsung Note8
604.9\$
[Buy Now](#)
[WriteReview](#)
[ViewReview](#)

Smart Tech

localhost:8080/smt/CheckOut



Wearable Technology

Phones

Laptops

Voice Assistant

Accessories

Trending

ORDER

Customer Name:	SRIYA
Product Purchased:	Apple iPhoneX
Product Price:	1176.0
Product Purchased:	Samsung Note8
Product Price:	604.9
Total Order Cost	1780.9

Credit/accountNo

Customer Address

State

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Smart Tech

localhost:8080/smt/Payment



Wearable Technology

Phones

Laptops

Voice Assistant

Accessories

ORDER

YOUR ORDER IS STORED
YOUR ORDER NO IS 30

Your Order Date is 11/20/2018

Estimated delivery date: 12/04/2018

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Smart Tech

localhost:8080/smt/ViewCart

Wearable Technology

Phones

Laptops

Voice Assistant

Accessories

Trending

VIEWCART(1)

1.	Apple iPhoneX	: 1176.0
	Total	1176.0

CheckOut

RECOMMENDED PRODUCTS

All-New Echo Show (2nd Gen)
229.99\$

Buy Now
WriteReview
ViewReview

Samsung Note8
604.9\$

Buy Now
WriteReview
ViewReview

This screenshot shows the 'ViewCart' page of a web application. On the left, a sidebar lists categories: Wearable Technology, Phones, Laptops, Voice Assistant, Accessories, and Trending. The main area displays a table with one item: 'Apple iPhoneX' at \$1176.00, with a 'CheckOut' button. Below this is a section titled 'RECOMMENDED PRODUCTS' featuring two items: 'All-New Echo Show (2nd Gen)' and 'Samsung Note8', each with a 'Buy Now' button and 'WriteReview/ViewReview' links.

Smart Tech

localhost:8080/smt/WriteReview

Laptops

Voice Assistant

Accessories

Trending

UserId:	SHRIYA
Product on Sale:	Yes
Review Date:	11/20/2018

Review Rating: 1+

RetailerName: HP

Retailer State: IL

Retailer City: Chicago

Retailer Zip: 60616

User age: 20

Gender: female

Occupation: CS

State: IL

Review Text: Bad

SubmitReview

This screenshot shows the 'WriteReview' page. On the left, a sidebar lists categories: Laptops, Voice Assistant, Accessories, and Trending. The main area contains a table with user information: UserId (SHRIYA), Product on Sale (Yes), and Review Date (11/20/2018). Below this is a form for writing a review, including fields for Review Rating (set to 1+), Retailer Name (HP), Retailer State (IL), Retailer City (Chicago), Retailer Zip (60616), User age (20), Gender (female), Occupation (CS), State (IL), and Review Text (Bad). A 'SubmitReview' button is at the bottom.

Smart Tech

localhost:8080/smt/SubmitReview

REVIEW

REVIEW FOR HP 2 IN 1 12.3" TOUCH SCREEN CHROMEBOOK INTEL CORE M 4GB MEMORY 32GB STORED

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- Wearable Technology
- Phones
- Laptops
- Voice Assistant
- Accessories