Good morning, thank you for (TA’s name) joining our demo. We’re excited to present what we come up for this project.

In this project, we used **Python**as our programming language to build a web application. MySQL is the database we used in this project. Django is our main backend framework. Our frontend framework uses bootstrap.

To demo the web application, we type the command in cmd: py manage.py runserver and it gives us this link. Copy and paste it to the browser. This is how the interface looks like. The basic 5 statistics are displayed here including count of stores offering childcare, count of products, count of distinct advertising campaigns, count of stores, count of stores offering food. These five statistics will help the user to get a glance of their data and also as a checkpoint to make sure that the data is accurate before viewing reports. The following are 9 reports and 2 maintenances including population and holiday maintenance as required by the project spec. I’ll show you the maintenance functions first, and then the 9 reports.

There are two maintenances: Population and holiday maintenance.

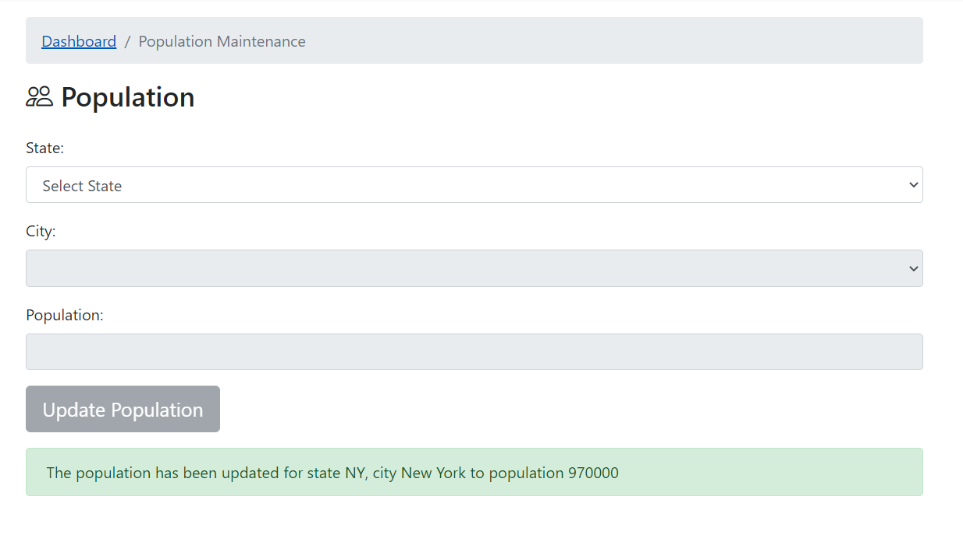
1. Click on population link, if there is no selection, update population button is disabled. User can select state, city and it shows the population.

2. The update population button will only become enabled when the user updates the population to a different number.

Note: population length should be between 0- 10 digits.

3. If at any time, the user changes the selected state, then the city and population will be reset. If the user changes the city, then the population will be reset to reflect the correct for that location. And the update button stays disabled until the user changes population to a different number.

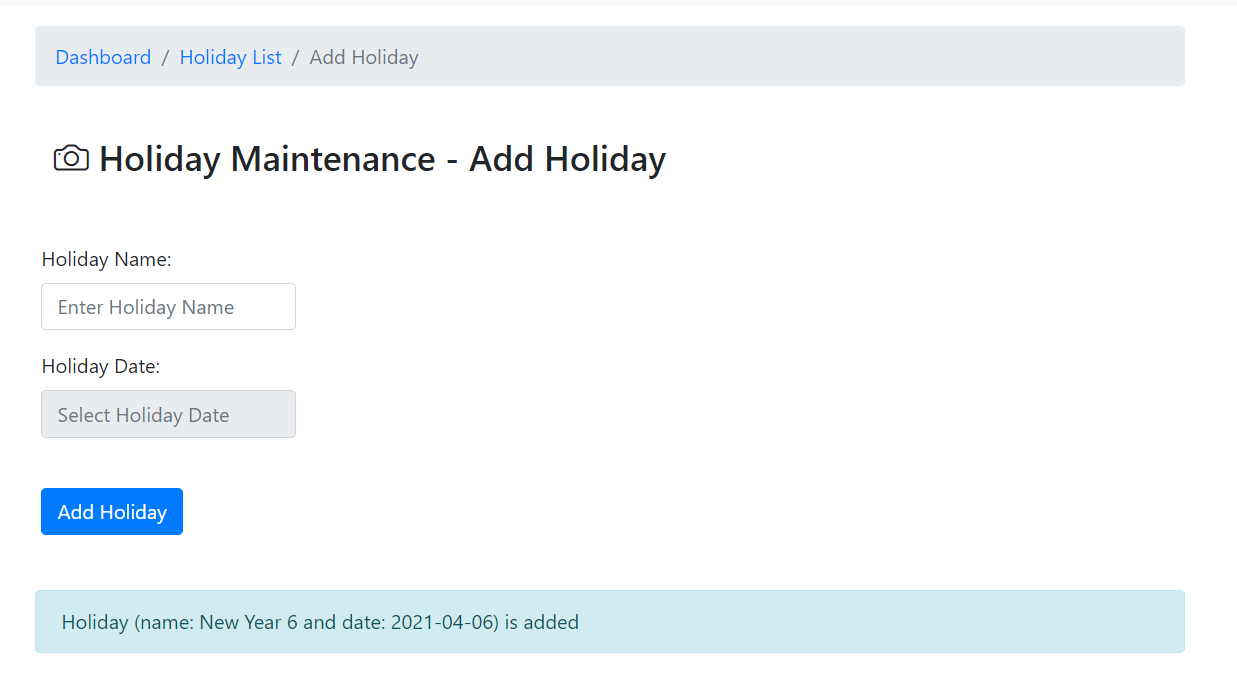
4. Once the update is successful, you will receive a success message at the bottom.



Click here and we go back to the dashboard.

Next, click on the holiday maintenance link: 1. it shows the holiday list. Note: A date can have multiple holiday names.

2. If the user wants to add holiday, click add holiday button. If no selection, add holiday button is disabled. User needs to input Holiday Name and Select Holiday Date from DateTimePicker. And the holiday is added. Note: The Date Text box is read only and only support the time picker to reduce the error handling cost. And when we go back to holiday list you can see the holiday is added.



3. If a holiday has already existed with the same name and same date, it shows a message to remind you this. For example:

Now let’s go over to the reports. Report 1 is the category report. The purpose of this report is to show a summary of the products in each category.

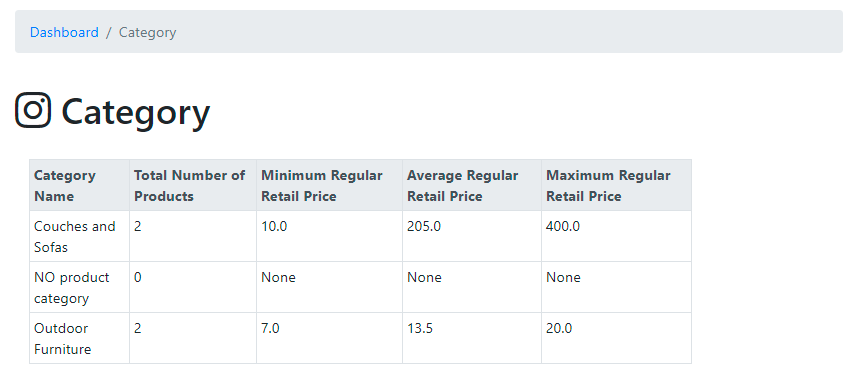
1. Once the user clicks on this link, it returns this table. Columns include category name, total number of products, Min & Average & Max retail price of products.

2. All categories in the database including those without products are listed here.

3. This report is sorted by category name in ascending order.

4. From the results, we can see that bar furniture category…pet furniture category.

5. Click the “Dashboard” here, you can return to main menu.



Report 2 is the report about actual versus predicted revenue for couches and sofas. The purpose of this report is to predict whether offering items at a discount actually helps to increase revenue by encouraging a higher volume of sales. This report compares how much revenue was actually generated from a product’s sales versus if the product were never discounted. Once the user clicks this link, it returns this table.

1. This report is only for the products in the category of couches and sofas.

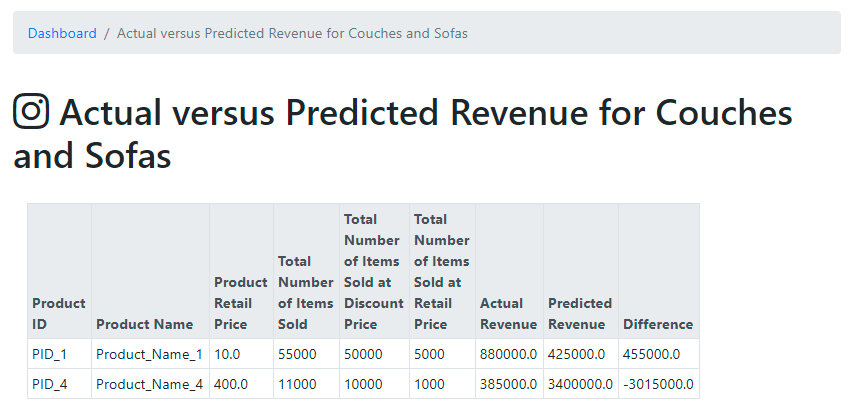
2. The columns in this table include product ID, name, retail price, total number of items sold, total number of items sold at discount price, total number of items sold at retail price, actual revenue, predicted revenue, and the difference between actual and predicted revenue.

3. Predicted revenue assumes that the product is never offered at a discount. It is calculated based on 75% original volume selling at a retail price on discounted days.

4. As required by the spec, difference is calculated by subtracting predicted revenue from the actual revenue. Only differences greater than $5000 (either positive or negative) are displayed here and the report is sorted by differences in descending order.

5. From the results, we can see offering discount for these products can result in huge differences. If the difference is positive, it means that the actual revenue is higher, and we are better off offering this product at the discounted price. If the difference is negative, it means that offering the product at regular price and selling at 75% of the sales volume is better.

This is the report 2. Again, click “Dashboard” and return the main menu.



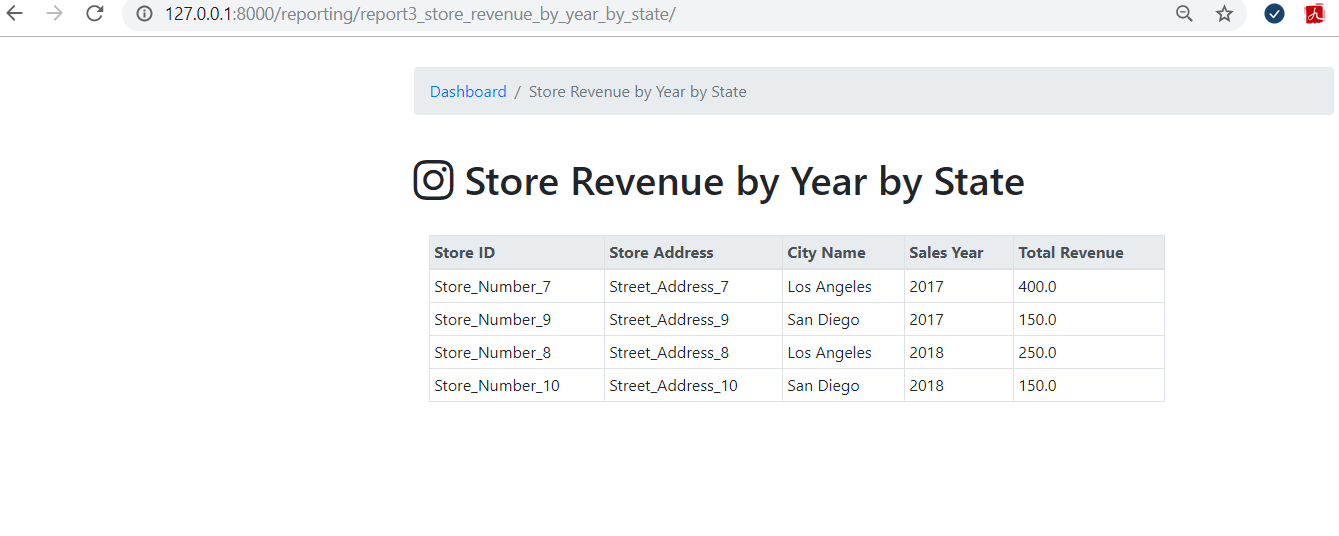
Report 3 is the store revenue by year by states report. It shows the revenue collected by stores per state grouped by year.

1. When clicking this link, states available for querying is displayed in the drop-down box. User can select a state and then click Run Report button. Note, here if you don’t select any state, run report button is disabled. Once we select a state and click the button, it goes to this table.

2. Columns include store ID, Store Address, city name, sales year and total revenue.

3. The report is sorted first by year in ascending order and then by revenue in descending order.

4. From the results we can tell for XX state, there are XX stores with sales from XX year to XX year. Store XX has the highest revenue in year XXX. For the year 2000, we can tell that stores 528, 847 and 848 have the highest sales revenue.



Report 4 presents outdoor furniture revenue on Groundhog Day. The goal of this report is to prove if the outdoor furniture sales spikes on Groundhog Day.

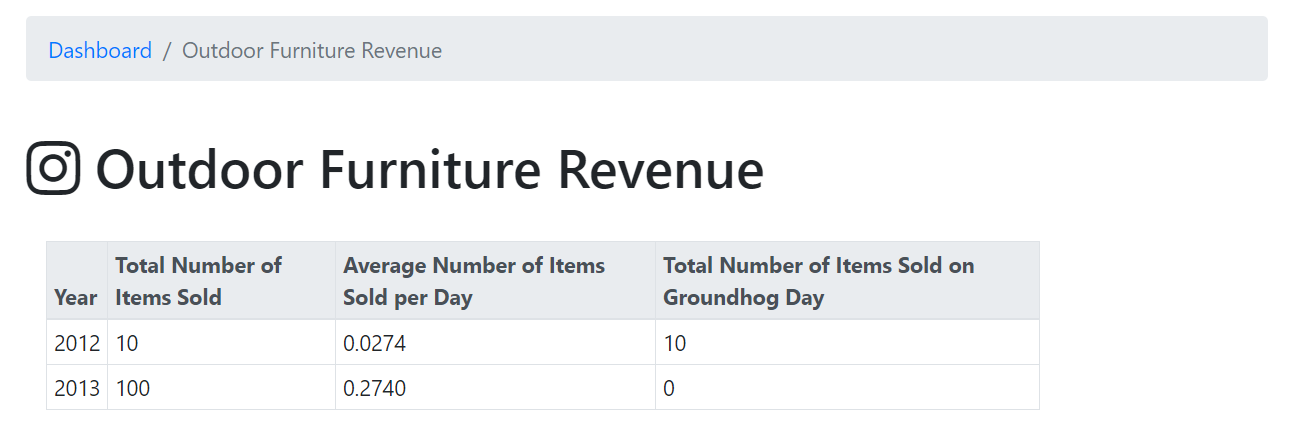
1. This report only queries for products in the category of outdoor furniture.

2. It returns the table with columns of year, total number of items sold, average number of items sold per day (calculated by total units sold/365…assuming 365 days), total number of items sold on Groundhog Day (Feb.2).

3. The report is sorted by year in ascending order.

4. From the results, we can tell in most years, total number of items sold on Groundhog Day is significantly higher than the average number of items sold per day which proves the spike sale on Groundhog Day.

For most years, outdoor furniture sales are better on Groundhog Day than the daily average.



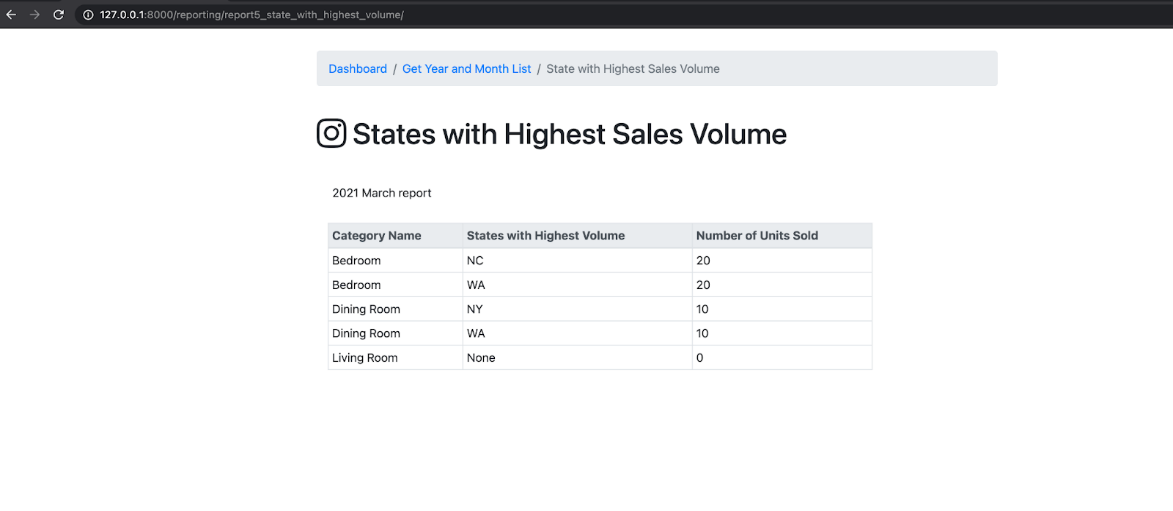
Report 5 is the State with Highest Volume Report. In this report, this report will help users who want to know all stores in the states that sell the greatest number of units for each category.

1. This is a monthly report, so we need to select year and month first. If no selection, Run Report button is disabled. Then, it returns this table with the column of the category name, the states that sold the highest number of units in that category (include items sold by all stores in the state), and the number of units that were sold by stores in that state.

2. The table is sorted by category name ascending.

3. Note: This report queries for all categories. Each category will only be listed once unless there are more than one state with the highest sales units.

4. From the results, we can tell in XXX, XXXX, XX state has the highest sales volume for XXXX category. MO and MT both have the highest sales volume for Aquarium furniture category.



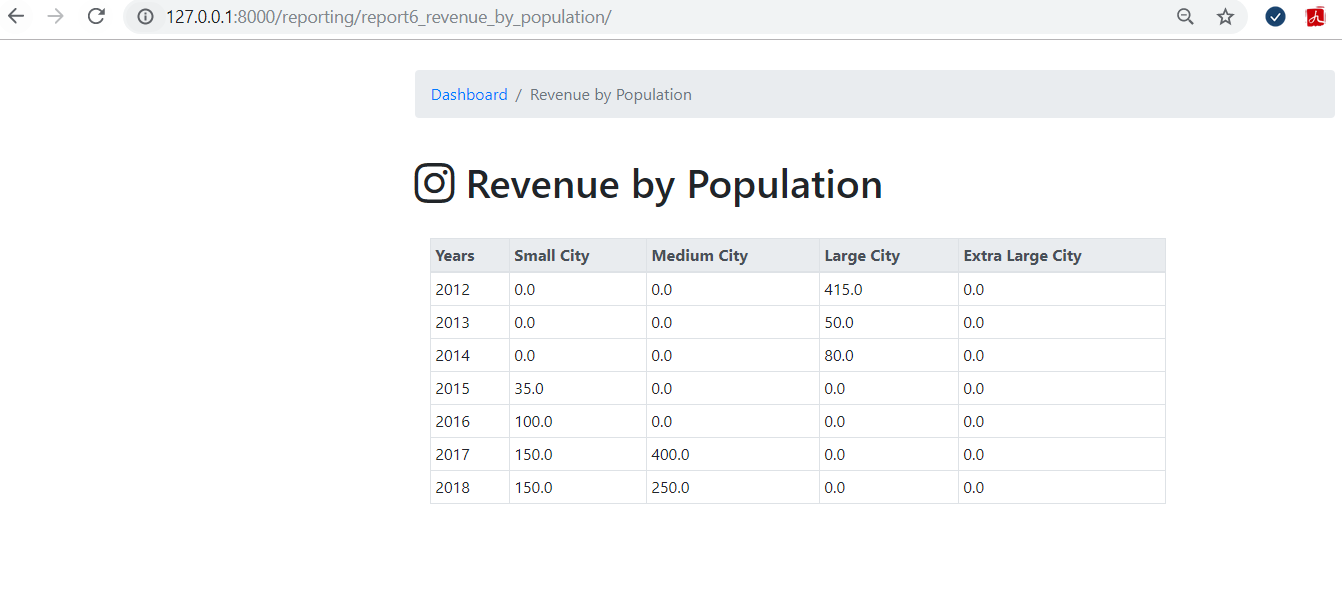
Report 6 is the revenue by population report. To help forecast expansions into other cities, users want to see what the total revenue is for specific population categories, and to see if there is a trend for growth, the revenue should be broken down on an annual basis. The user clicks report 6 link and goes to this table.

1. Each row represents a year, while each column represents a city size category. The categories are based on the population ranges as indicated in the column headers.

2. Both rows and columns are in ascending order, from the oldest to newest year and from smallest to largest city size categories.

3. From the results, we can see in most of the years, medium city size has higher revenue, comparing with other city sizes. So, users should consider expansions into medium size cities. Also, with the increase of year, there is not a trend for growth for each city size categories. (or maybe not, depending on results).

4. Note: when population is updated in the Population Maintenance, the city size category in this report will also be updated simultaneously. (Try New York city, make it become the extra large city)

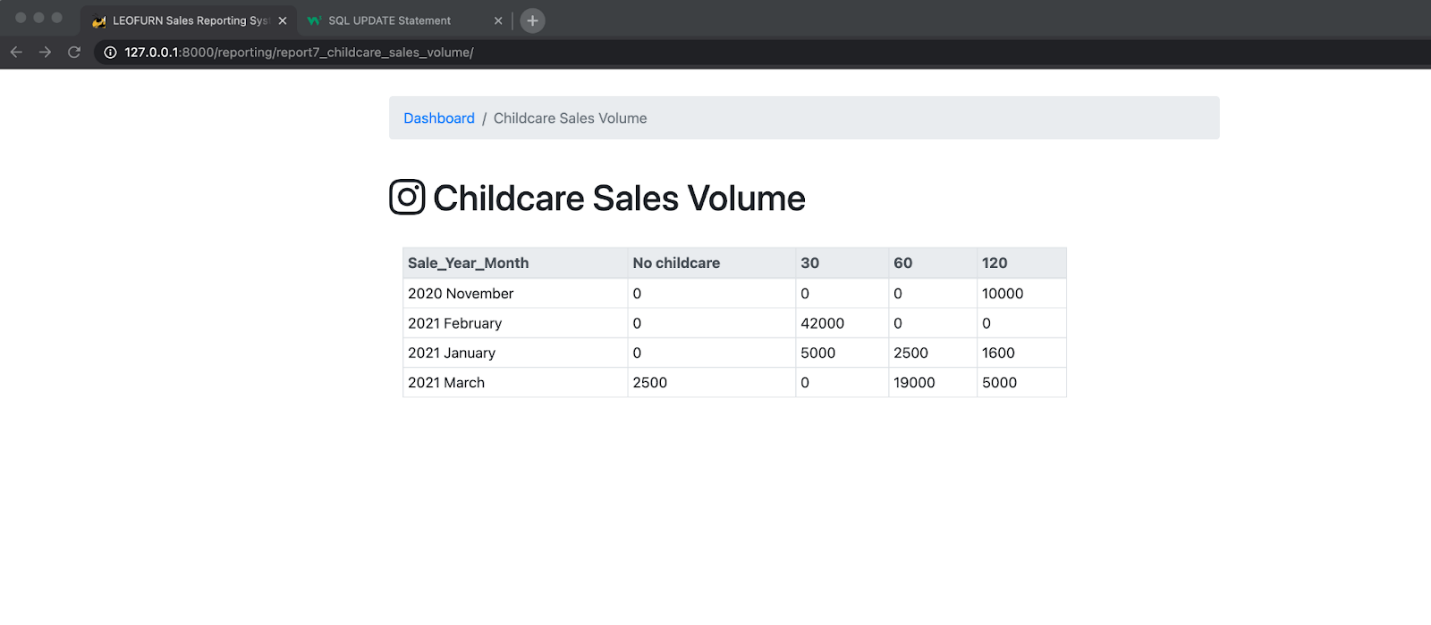


Report 7 is the report about childcare sales volumes. This report will help users to understand how offering childcare has an impact on sales.

1. Once the user clicks on the Childcare Sale Volume, it returns all available sales data for the last 12 months and for each childcare time limit.

2. Each column represents all available childcare limits provided by stores including a column for stores with no childcare service. Each row represents a month.

3. From the results, there is not a clear indication that providing more childcare will lead to higher sales volume. As we can see, during some months, providing no childcare brings in similar sales volume or higher than providing childcare. 2012-04, 2012-05, 2012-06.

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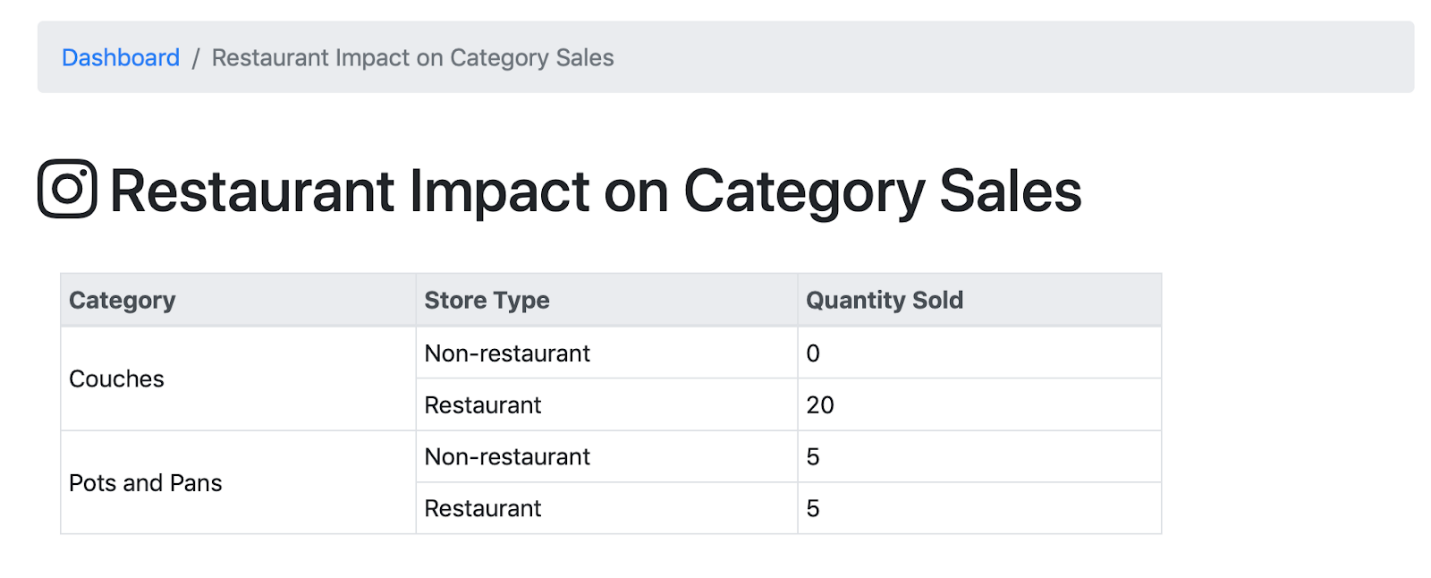
Report 8 is about the Restaurant Impact on Category Sales. In this report, users want to know if the presence of a restaurant can result in less sales in certain items such as dining room furniture, while more sales in other items such as beds, etc.

Click the link and shows this table. 1. The columns include category, store type, quantity sold. Categories are presented as grouped rows with store type separated into non-restaurant and restaurant.

2. The report is ordered by category name ascendingly, with non-restaurant store data listed first.

3. For the Store Type that has no quantity sold, 0 will be shown in the quantity sold column.

4. Note: any categories that are not assigned products is not included in this report as their information is not useful here. From the results, we can see there are more sales with the presence of restaurant for each category, while there are less sales without a restaurant for each category.



Report 9 is advertising campaign analysis report. Users would like to know whether an advertising campaign affects product sales volume if the product is discounted.

1. This report queries for all products, and when a discount price is in effect. For each product, we are showing product ID, product name, units sold during campaign, units old outside campaign and the difference (the difference column is calculated by subtracting the sold outside campaign from the sold during campaign).

2. The results are sorted by difference in descending (highest to lowest) order. And only the top 10, followed by the bottom 10 from the results are shown in this report.

3. From the results, we can see for these products, advertising campaign has a positive effect on product sales volume when a discount price is in effect as there are significantly more discounted products sold during a campaign than outside of a campaign.



For all reports, if there are no data meet the report criteria, “No Records!” will be shown.

End~

That concludes all the functionalities in our dashboard. Any questions? Again, thank you for joining us. We’ve learnt a lot from this course. Thanks! Have a good weekend……