

Amazon Products Sales

This is a Product Sales Dataset scraped from the Amazon website which is download from [Kaggle](#).

- Its product data are separated by 142 categories in csv format, along with the full dataset name **Amazon-Products.csv**.
- Each csv files are consisting of 7 columns and each row has products details accordingly

Features

name	description
<i>name</i>	The name of the product
<i>main_category</i>	The main category of the product belong
<i>sub_category</i>	The main category of the product belong
<i>ratings</i>	The ratings given by amazon customers of the product
<i>no of ratings</i>	The number of ratings given to this product in amazon shopping
<i>discount_price</i>	The discount prices of the product
<i>actual_price</i>	The actual MRP of the product

Inspiration

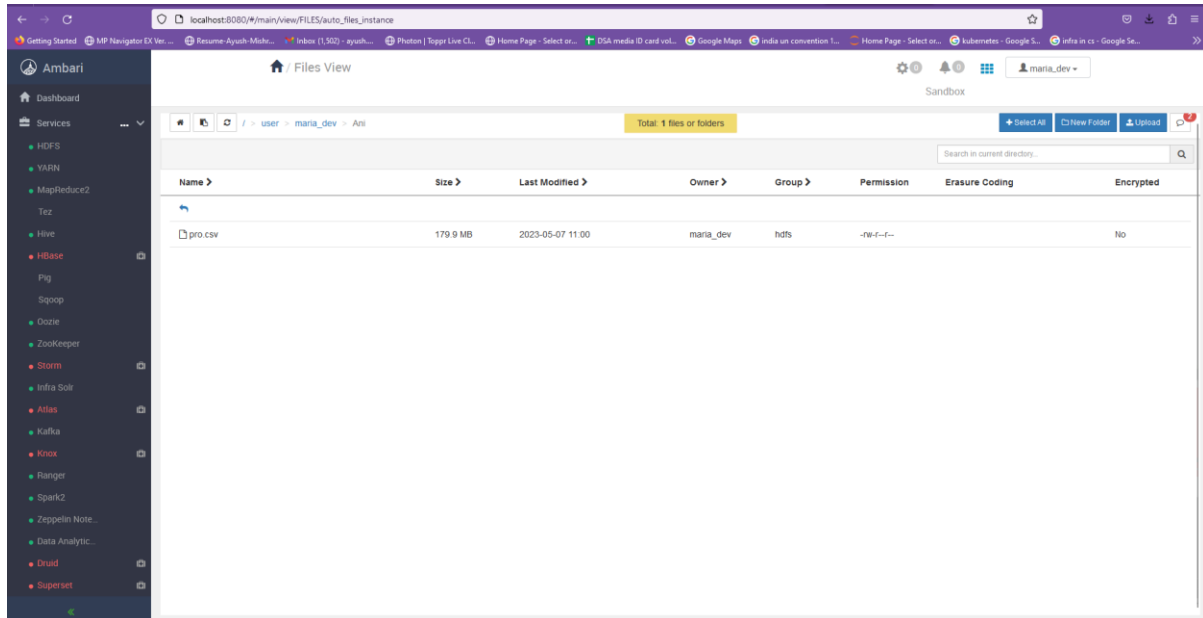
Amazon is an American Tech Multi-National Company whose business interests include E-commerce, where they buy and store the inventory, and take care of everything from shipping and pricing to customer service and returns. I've created this dataset so that people can play with this dataset and do a lot of things as mentioned below

- Dataset Walkthrough
- Data Preprocessing
- Understanding Dataset Hierarchy
- Exploratory Data Analysis
- Data Visualization *Using matplotlib and seaborn*
- Data Visualization *Using BI Tools such as **Tableau**, **PowerBI**, **Kibana**, **Grafana**, **Splunk***
- **Making Recommendation System**
- **Webscraping content of each products in detail**

This is a list of some of that things that you can do on this dataset. It's not definitely limited to the one that is mentioned there but a lot more other things can also be done.

Importing File into HDFS

Uploading File into HDFS using Apache Ambari



```
maria_dev@sandbox-hdp:~  
[maria_dev@sandbox-hdp ~]$ hdfs dfs -copyToLocal Ani/pro.csv pro.csv  
[maria_dev@sandbox-hdp ~]$ hdfs dfs -ls  
Found 3 items  
drwxr-xr-x - maria_dev hdfs 0 2023-05-07 05:30 Ani  
drwxr-xr-x - maria_dev hdfs 0 2023-04-12 18:09 cancer+dataset  
-rw-r--r-- 1 maria_dev hdfs 125141 2023-04-12 18:12 data.csv  
[maria_dev@sandbox-hdp ~]$ ls  
pro.csv temp.csv  
[maria_dev@sandbox-hdp ~]$
```

Changing ownership and permissions of data file

```
[maria_dev@sandbox-hdp ~]$ hdfs dfs -ls Ani/  
Found 1 items  
-rw-r--r-- 1 maria_dev hdfs 44691098 2023-05-07 08:55 Ani/pro.csv  
[maria_dev@sandbox-hdp ~]$ hdfs dfs -ls /user/maria_dev/Ani/  
Found 1 items  
-rw-r--r-- 1 maria_dev hdfs 44691098 2023-05-07 08:55 /user/maria_dev/Ani/pro.csv  
[maria_dev@sandbox-hdp ~]$ sudo -u hdfs hdfs dfs -chown hive /user/maria_dev/Ani/  
[maria_dev@sandbox-hdp ~]$ sudo -u hdfs hdfs dfs -chmod 777 /user/maria_dev/Ani/  
[maria_dev@sandbox-hdp ~]$ hdfs dfs -ls /user/maria_dev/Ani/  
Found 1 items  
-rw-r--r-- 1 maria_dev hdfs 44691098 2023-05-07 08:55 /user/maria_dev/Ani/pro.csv  
[maria_dev@sandbox-hdp ~]$
```

Hive Commands

Launching Hive from HortonWorks

```
maria_dev@sandbox-hdp:-  
# Using username "maria_dev".  
# maria_dev@localhost's password:  
Last login: Sun May 7 05:45:24 2023 from 172.18.0.3  
[maria_dev@sandbox-hdp ~]$ hive  
SLF4J: Class path contains multiple SLF4J bindings.  
SLF4J: Found binding in [jar:file:/usr/hdp/3.0.1.0-187/hive/lib/log4j-slf4j-impl-2.10.0.jar!/org/slf4j/impl/StaticLoggerBinder.class]  
SLF4J: Found binding in [jar:file:/usr/hdp/3.0.1.0-187/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]  
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.  
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]  
Connecting to jdbc:hive2://sandbox-hdp.hortonworks.com:2101/default;password=hive;serviceDiscoveryMode=zooKeeper;user=hive;zooKeeperNamespace=hiveserver2  
23/05/07 06:00:41 [main]: INFO jdbc.HiveConnection: Connected to sandbox-hdp.hortonworks.com:10000  
Connected to: Apache Hive (version 3.1.0.3.0.1.0-187)  
Driver: Hive JDBC (version 3.1.0.3.0.1.0-187)  
Transaction isolation: TRANSACTION_REPEATABLE_READ  
Beeline version 3.1.0.3.0.1.0-187 by Apache Hive  
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2>
```

Creating a Database

- *create database* amazon_products;

```
maria_dev@sandbox-hdp:-  
# Using username "maria_dev".  
# maria_dev@localhost's password:  
Last login: Sun May 7 05:45:24 2023 from 172.18.0.3  
[maria_dev@sandbox-hdp ~]$ hive  
SLF4J: Class path contains multiple SLF4J bindings.  
SLF4J: Found binding in [jar:file:/usr/hdp/3.0.1.0-187/hive/lib/log4j-slf4j-impl-2.10.0.jar!/org/slf4j/impl/StaticLoggerBinder.class]  
SLF4J: Found binding in [jar:file:/usr/hdp/3.0.1.0-187/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]  
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.  
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]  
Connecting to jdbc:hive2://sandbox-hdp.hortonworks.com:2101/default;password=hive;serviceDiscoveryMode=zooKeeper;user=hive;zooKeeperNamespace=hiveserver2  
23/05/07 06:00:41 [main]: INFO jdbc.HiveConnection: Connected to sandbox-hdp.hortonworks.com:10000  
Connected to: Apache Hive (version 3.1.0.3.0.1.0-187)  
Driver: Hive JDBC (version 3.1.0.3.0.1.0-187)  
Transaction isolation: TRANSACTION_REPEATABLE_READ  
Beeline version 3.1.0.3.0.1.0-187 by Apache Hive  
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2> CREATE DATABASE amazon_products;  
INFO : Compiling command(queryId=hive_20230507060156_0f3e5895-86f3-4a5b-9af4-7e834b65e0f6): CREATE DATABASE amazon_products  
INFO : Semantic Analysis Completed (retail = false)  
INFO : Returning Hive schema: Schema(fieldSchemas:null, properties:null)  
INFO : Completed compiling command(queryId=hive_20230507060156_0f3e5895-86f3-4a5b-9af4-7e834b65e0f6); Time taken: 0.032 seconds
```

- *use* amazon_products

```
. . . . .>  
INFO : Compiling command(queryId=hive_20230507060250_dca7a64c-6c9a-4c08-9219-27eec144239e): use amazon_products  
INFO : Semantic Analysis Completed (retail = false)  
INFO : Returning Hive schema: Schema(fieldSchemas:null, properties:null)  
INFO : Completed compiling command(queryId=hive_20230507060250_dca7a64c-6c9a-4c08-9219-27eec144239e); Time taken: 0.016 seconds  
INFO : Executing command(queryId=hive_20230507060250_dca7a64c-6c9a-4c08-9219-27eec144239e): use amazon_products  
INFO : Starting task [Stage:0:DD] in serial mode  
INFO : Completed executing command(queryId=hive_20230507060250_dca7a64c-6c9a-4c08-9219-27eec144239e); Time taken: 0.006 seconds  
INFO : OK  
No rows affected (0.031 seconds)  
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2>
```

Creating Table

```
CREATE TABLE product_sales (  
    name STRING,  
    main_category STRING,  
    sub_category STRING,  
    ratings FLOAT,  
    no_of_ratings INT,  
    discount_price FLOAT,  
    actual_price FLOAT  
)  
  
ROW FORMAT DELIMITED  
FIELDS TERMINATED BY ','  
  
STORED AS TEXTFILE  
  
TBLPROPERTIES("skip.header.line.count"="1");
```

```
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2> CREATE TABLE product_sales (  
    name STRING,  
    main_category STRING,  
    sub_category STRING,  
    image STRING,  
    link STRING,  
    ratings FLOAT,  
    no_of_ratings INT,  
    discount_price FLOAT,  
    actual_price FLOAT  
)  
INFO : Compiling command(queryId=hive_20230507060335_8afa6cfc-b7af-43e8-b6d6-cf0bf9cd37ea): CREATE TABLE product_sales (  
name STRING,  
main_category STRING,  
sub_category STRING,  
image STRING,  
link STRING,  
ratings FLOAT,  
no_of_ratings INT,  
discount_price FLOAT,  
actual_price FLOAT  
)  
INFO : Semantic Analysis Completed (retrial = false)  
INFO : Returning Hive schema: Schema(fieldSchemas:null, properties:null)  
INFO : Completed compiling command(queryId=hive_20230507060335_8afa6cfc-b7af-43e8-b6d6-cf0bf9cd37ea): Time taken: 0.044 seconds  
INFO : Executing command(queryId=hive_20230507060335_8afa6cfc-b7af-43e8-b6d6-cf0bf9cd37ea): CREATE TABLE product_sales (  
name STRING,  
main_category STRING,  
sub_category STRING,  
image STRING,  
link STRING,  
ratings FLOAT,  
no_of_ratings INT,  
discount_price FLOAT,  
actual_price FLOAT  
)  
INFO : Starting task [Stage-0:DDL] in serial mode  
INFO : Completed executing command(queryId=hive_20230507060335_8afa6cfc-b7af-43e8-b6d6-cf0bf9cd37ea): Time taken: 0.093 seconds  
INFO : OK  
No rows affected (0.211 seconds)  
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2>
```

Loading CSV data into HIVE

LOAD DATA INPATH '/path/to/csv/file.csv' OVERWRITE INTO TABLE product_sales;

```
hivecli version 3.13.0.3.0.1.0-287 by Apache Hive
01 jdbc:hive2://sandbox-hdp.hortonworks.com:25: use amazon_products;
INFO : Compiling command(queryId=hive_20230507095828_16e01b99-53de-4fb4-84f5-07a5f014132e): use amazon_products
INFO : Semantic Analysis Completed (retiral = false)
INFO : Returning Hive schema: Schema(fieldSchemas:null, properties:null)
INFO : Completed compiling command(queryId=hive_20230507095828_16e01b99-53de-4fb4-84f5-07a5f014132e): Time taken: 0.023 seconds
INFO : Executing command(queryId=hive_20230507095828_16e01b99-53de-4fb4-84f5-07a5f014132e): use amazon_products
INFO : Starting task [Stage-0:LOG] in serial mode
INFO : Completed executing command(queryId=hive_20230507095828_16e01b99-53de-4fb4-84f5-07a5f014132e): Time taken: 0.006 seconds
INFO : OK
No rows affected (0.107 seconds)
01 jdbc:hive2://sandbox-hdp.hortonworks.com:25: LOAD DATA INPATH '/user/maria_dev/Ani/pro.csv' OVERWRITE INTO TABLE product_sales;
INFO : Compiling command(queryId=hive_20230507095840_09f72cfc-f066-4e7c-b07f-5d0aa4240e6d): LOAD DATA INPATH '/user/maria_dev/Ani/pro.csv' OVERWRITE INTO TABLE product_sales
INFO : Semantic Analysis Completed (retiral = false)
INFO : Returning Hive schema: Schema(fieldSchemas:null, properties:null)
INFO : Completed compiling command(queryId=hive_20230507095840_09f72cfc-f066-4e7c-b07f-5d0aa4240e6d): Time taken: 0.049 seconds
INFO : Executing command(queryId=hive_20230507095840_09f72cfc-f066-4e7c-b07f-5d0aa4240e6d): LOAD DATA INPATH '/user/maria_dev/Ani/pro.csv' OVERWRITE INTO TABLE product_sales
INFO : Starting task [Stage-0:MOVE] in serial mode
INFO : Loading data to table amazon_products.product_sales from hdfs://sandbox-hdp.hortonworks.com:8020/user/maria_dev/Ani/pro.csv
INFO : Starting task [Stage-1:STATS] in serial mode
INFO : Completed executing command(queryId=hive_20230507095840_09f72cfc-f066-4e7c-b07f-5d0aa4240e6d): Time taken: 0.56 seconds
INFO : OK
No rows affected (0.478 seconds)
01 jdbc:hive2://sandbox-hdp.hortonworks.com:25:
```

Table Schema

describe product_sales;

```
01 jdbc:hive2://sandbox-hdp.hortonworks.com:25: DESCRIBE product_sales;
INFO : Compiling command(queryId=hive_20230507095842_333bd844-lbcb-4777-aa0d-548083eab7cf): DESCRIBE product_sales
INFO : Semantic Analysis Completed (retiral = false)
INFO : Returning Hive schema: Schema(fieldSchemas:[FieldSchema(name=col_name, type=string, comment=from deserializer), FieldSchema(name=comment, type=string, comment=from deserializer)], properties=null)
INFO : Completed compiling command(queryId=hive_20230507095842_333bd844-lbcb-4777-aa0d-548083eab7cf): Time taken: 0.108 seconds
INFO : Executing command(queryId=hive_20230507095842_333bd844-lbcb-4777-aa0d-548083eab7cf): DESCRIBE product_sales
INFO : Starting task [Stage-0:LOG] in serial mode
INFO : Completed executing command(queryId=hive_20230507095842_333bd844-lbcb-4777-aa0d-548083eab7cf): Time taken: 0.009 seconds
INFO : OK
+-----+
| col_name | data_type | comment |
+-----+
| name     | string   |         |
| main_category | string  |         |
| sub_category | string  |         |
| ratings  | float    |         |
| no_of_ratings | int     |         |
| discount_price | float  |         |
| actual_price | float   |         |
+-----+
7 rows selected (0.188 seconds)
```

Viewing Data using HiveQL

*Select * from product_sales Limit 20*

```
01 jdbc:hive2://sandbox-hdp.hortonworks.com:25: select * from product_sales Limit 20;
INFO : Compiling command(queryId=hive_20230507123539_d03d67e-2b48-tca0-b03f-ba0b0e0e1ca6): select * from product_sales Limit 20
INFO : Semantic Analysis Completed (retiral = false)
INFO : Returning Hive schema: Schema(fieldSchemas:[FieldSchema(name=product_sales.name, type=string, comment=null), FieldSchema(name=product_sales.main_category, type=string, comment=null), FieldSchema(name=product_sales.sub_category, type=string, comment=null), FieldSchema(name=product_sales.ratings, type=float, comment=null), FieldSchema(name=product_sales.no_of_ratings, type=int, comment=null), FieldSchema(name=product_sales.discount_price, type=float, comment=null), FieldSchema(name=product_sales.actual_price, type=float, comment=null)], properties=null)
INFO : Completed compiling command(queryId=hive_20230507123539_d03d67e-2b48-tca0-b03f-ba0b0e0e1ca6): Time taken: 2.021 seconds
INFO : Executing command(queryId=hive_20230507123539_d03d67e-2b48-tca0-b03f-ba0b0e0e1ca6): select * from product_sales Limit 20
INFO : Completed executing command(queryId=hive_20230507123539_d03d67e-2b48-tca0-b03f-ba0b0e0e1ca6): Time taken: 0.090 seconds
INFO : OK
+-----+
| product_sales.name | product_sales.main_category | product_sales.sub_category | product_sales.ratings | product_sales.no_of_ratings | product_sales.discount_price | product_sales.actual_price |
+-----+
| name | main_category | sub_category | ratings | no_of_ratings | discount_price | actual_price |
+-----+
| "Migoy 1.5 Ton 3 Star Inverter Split AC (5 In 1 Convertible | Copper | Anti-Viral + Pm 2.5 Filter | NULL | NULL | NULL | NULL |
| "Migoy 1.5 Ton 5 Star AI DUAL Inverter Split AC (Copper | Super Convertible 6-in-1 Cooling | HD Filter with Anti-Virus Protection... | NULL | NULL | NULL | NULL |
| "MS 1.5 Ton 4 Star AI Dual Inverter Split AC (Copper | Super Convertible 6-in-1 Cooling | Hd Filter With Anti Virus Protection | NULL | NULL | NULL | NULL |
| "MS 1.5 Ton 3 Star AI DUAL Inverter Split AC (Copper | Super Convertible 6-in-1 Cooling | HD Filter with Anti-Virus Protection... | NULL | NULL | NULL | NULL |
| "Carrier 1.5 Ton 3 Star Inverter Split AC (Copper | ESTER Dual | 4-in-1 Flexicool Inverter | NULL | NULL | NULL | NULL |
| "Voltes 1.4 Ton 3 Star Inverter Split AC(Copper | Adjustable Cooling | Anti-dust Filter | NULL | NULL | NULL | NULL |
| "Migoy 1.5 Ton 3 Star Inverter Split AC (5 In 1 Convertible | Copper | Anti-Viral + Pm 2.5 Filter | NULL | NULL | NULL | NULL |
| "Migoy 1.5 Ton 5 Star Inverter Split AC (5 In 1 Convertible | Copper | Anti-Viral + Pm 2.5 Filter | NULL | NULL | NULL | NULL |
| "Carrier 1.5 Ton 3 Star AI Flexicool Inverter Split AC (Copper | Convertible 4-in-1 Cooling | Dual Filtration with HD & PM 2.5 F... | NULL | NULL | NULL | NULL |
| "MS 1.5 Ton | 5 Star | Inverter Split AC(Copper | NULL | NULL | NULL | NULL |
| "Dalkin 1 Ton 3 Star Inverter Split AC (Copper | PM 2.5 Filter | Triple Display | NULL | NULL | NULL | NULL |
| "Dalkin 1.5 Ton 5 Star Inverter Split AC (Copper | PM 2.5 Filter | 2022 Model | NULL | NULL | NULL | NULL |
| "Panasonic 1.5 Ton 5 Star Wi-Fi Inverter Smart Split AC (Copper Condenser | 7 in 1 Convertible with additional AI Mode | 4 Wa... | NULL | NULL | NULL | NULL |
| "Carrier 1.5 Ton 5 Star AI Flexicool Inverter Split AC (Copper | Convertible 6-in-1 Cooling | Dual Filtration with HD & PM 2.5... | NULL | NULL | NULL | NULL |
| "Wharicool 1.5 Ton 3 Star | Flexicool Inverter Split AC (Copper | Convertible 4-in-1 Cooling Mode | NULL | NULL | NULL | NULL |
| "Samsung 1.5 Ton 3 Star Inverter Split AC (Copper | Convertible 5-in-1 Cooling Mode | Easy Filter Plus (Anti-Bacteria | NULL | NULL | NULL | NULL |
| "Migoy 1.5 Ton 5 Star Inverter Split AC (5 In 1 Convertible | Copper | Anti-Viral + Pm 2.5 Filter | NULL | NULL | NULL | NULL |
| "Migoy 1.5 Ton 5 Star 5-in-1 Convertible | Inverter Split AC (100% Copper | NULL | NULL | NULL | NULL |
| "Migoy 1.5 Ton 3 Star Inverter Split AC Model 2023 (100% Copper | 5-In-1 Convertible | An IR Xi 12TinhVR32-Dual Split | NULL | NULL | NULL | NULL |
| "Migoy 1.5 Ton 3 Star Inverter Split AC Model 2023 (100% Copper | 5-In-1 Convertible | An IR Xi 12TinhVR32-Dual Split | NULL | NULL | NULL | NULL |
+-----+
20 rows selected (2.653 seconds)
01 jdbc:hive2://sandbox-hdp.hortonworks.com:25:
```

Data Analysis

Viewing Number of rows

Select count() from product_sales;*

```
1 row selected (0.710 seconds)
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2> SELECT COUNT(*) FROM product_sales;
INFO : Compiling command(queryId=hive_20230507090116_395d7d2a-581e-4e2e-910d-17e42d008782): SELECT COUNT(*) FROM product_sales
INFO : Semantic Analysis Completed (retrial = false)
INFO : Returning Hive schema: Schema(fieldSchemas:[FieldSchema(name: c0, type:bigint, comment:null)], properties:null)
INFO : Completed compiling command(queryId=hive_20230507090116_395d7d2a-581e-4e2e-910d-17e42d008782); Time taken: 0.741 seconds
INFO : Executing command(queryId=hive_20230507090116_395d7d2a-581e-4e2e-910d-17e42d008782): SELECT COUNT(*) FROM product_sales
INFO : Query ID = hive_20230507090116_395d7d2a-581e-4e2e-910d-17e42d008782
INFO : Total jobs = 1
INFO : Launching Job 1 out of 1
INFO : Starting task [Stage-1:MAPRED] in serial mode
INFO : Subscribed to counters: [] for queryId: hive_20230507090116_395d7d2a-581e-4e2e-910d-17e42d008782
INFO : Tez session hasn't been created yet. Opening session
INFO : Dag name: SELECT COUNT(*) FROM product_sales (Stage-1)
INFO : Status: Running (Executing on YARN cluster with App id application_1683436887119_0002)
```

	VERTICES	MODE	STATUS	TOTAL	COMPLETED	RUNNING	PENDING	FAILED	KILLED
Map 1		container	RUNNING	3	0	2	1	0	0
Reducer 2		container	INITED	1	0	0	1	0	0

VERTICES: 00/02 [>-----] 0% ELAPSED TIME: 10.24 s

	VERTICES	MODE	STATUS	TOTAL	COMPLETED	RUNNING	PENDING	FAILED	KILLED
Map 1	container	SUCCEEDED	3	3	0	0	0	0
Reducer 2	container	SUCCEEDED	1	1	0	0	0	0

VERTICES: 02/02 [=====] 100% ELAPSED TIME: 12.22 s

```
INFO : Status: DAG finished successfully in 12.06 seconds
INFO :
INFO : Query Execution Summary
INFO : -----
INFO : OPERATION                                DURATION
INFO : -----
INFO : Compile Query                             0.74s
INFO : Prepare Plan                             12.29s
INFO : Get Query Coordinator (AM)                0.20s
INFO : Submit Plan                              0.58s
INFO : Start DAG                                1.18s
INFO : Run DAG                                  12.06s
INFO : -----
INFO :
INFO : Task Execution Summary
INFO : -----
INFO : VERTICES    DURATION(ms)    CPU_TIME(ms)    GC_TIME(ms)    INPUT_RECORDS    OUTPUT_RECORDS
INFO : -----
INFO : Map 1        7848.00          8,030          425            335,058          4
INFO : Reducer 2    570.00           580            30              3                0
INFO : -----
INFO :
```

```
INFO : FIRST EVENT RECEIVED: 99
INFO : INPUT RECORDS PROCESSED: 3
INFO : LAST EVENT RECEIVED: 124
INFO : NUM_FAILED_SHUFFLE_INPUTS: 0
INFO : NUM_SHUFFLED_INPUTS: 3
INFO : SHUFFLE BYTES: 84
INFO : SHUFFLE_BYTES_DECOMPRESSED: 42
INFO : SHUFFLE_BYTES_DISK_DIRECT: 84
INFO : SHUFFLE_BYTES_TO_DISK: 0
INFO : SHUFFLE_BYTES_TO_MEM: 0
INFO : SHUFFLE_PHASE_TIME: 167
INFO : TaskCounter_Reducer_2_OUTPUT_out_Reducer_2:
INFO : OUTPUT_RECORDS: 0
INFO : org.apache.hadoop.hive.q1.exec.tez.HiveInputCounters:
INFO : GROUPED INPUT SPLITS Map 1: 3
INFO : INPUT_DIRECTORIES Map 1: 1
INFO : INPUT_FILES Map 1: 1
INFO : RAW_INPUT_SPLITS Map 1: 3
INFO : Completed executing command(queryId=hive_20230507090116_395d7d2a-581e-4e2e-910d-17e42d008782); Time taken: 26.395 seconds
INFO : OK
+-----+
| _c0 |
+-----+
| 335058 |
+-----+
1 row selected (27.311 seconds)
```

Viewing Min ,Max, Avg sales of each department grouped by categories

```
SELECT

    category,

    COUNT(*) AS num_sales,

    AVG(sales) AS avg_sales,

    MIN(sales) AS min_sales,

    MAX(sales) AS max_sales

FROM product_sales

GROUP BY category;
```

```
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2> SELECT
. . . . .> main_category AS category,
. . . . .> COUNT(*) AS num_sales,
. . . . .> AVG(actual_price) AS avg_sales,
. . . . .> MIN(actual_price) AS min_sales,
. . . . .> MAX(actual_price) AS max_sales
. . . . .> FROM product_sales
. . . . .> GROUP BY main_category;
INFO : Compiling command(queryId=hive_20230507090600_eadc45f2-d21a-4f47-8f8c-947515986bbe): SELECT
main_category AS category,
COUNT(*) AS num_sales,
AVG(actual_price) AS avg_sales,
MIN(actual_price) AS min_sales,
MAX(actual_price) AS max_sales
FROM product_sales
GROUP BY main_category
INFO : Semantic Analysis Completed (retrial = false)
INFO : Returning Hive schema: Schema(fieldSchemas:[FieldSchema(name:category, type:string, comment:null), FieldSchema(name:num_sales, type:bigint, c
in_sales, type:float, comment:null), FieldSchema(name:max_sales, type:float, comment:null)], properties:null)
INFO : Completed compiling command(queryId=hive_20230507090600_eadc45f2-d21a-4f47-8f8c-947515986bbe); Time taken: 0.245 seconds
INFO : Executing command(queryId=hive_20230507090600_eadc45f2-d21a-4f47-8f8c-947515986bbe): SELECT
main_category AS category,
COUNT(*) AS num_sales,
AVG(actual_price) AS avg_sales,
MIN(actual_price) AS min_sales,
MAX(actual_price) AS max_sales
FROM product_sales
GROUP BY main_category
INFO : Query ID = hive_20230507090600_eadc45f2-d21a-4f47-8f8c-947515986bbe
INFO : Total jobs = 1
INFO : Launching Job 1 out of 1
INFO : Starting task [Stage-1:MAPRED] in serial mode
INFO : Subscribed to counters: [] for queryId: hive_20230507090600_eadc45f2-d21a-4f47-8f8c-947515986bbe
INFO : Tez session hasn't been created yet. Opening session
INFO : Dag name: SELECT
main_category AS cate...main_category (Stage-1)
INFO : Status: Running (Executing on YARN cluster with App id application_1683436887119_0003)

-----
VERTICES    MODE      STATUS  TOTAL  COMPLETED  RUNNING  PENDING  FAILED  KILLED
-----
Map 1       container  RUNNING    3        0           2         1        0        0
Reducer 2   container  INITED     14        0           0        14        0        0
-----
VERTICES: 00/02  [>-----] 0%  ELAPSED TIME: 12.77 s
-----
```


category	num_sales	avg_sales	min_sales	max_sales
L	18	21.650000005960464	1.0	91.0
L(UK 8-11) Size)"	2	598.0	598.0	598.0
L (Pack of 4) (WSCOMRIB4_4002_L)"	1	799.0	799.0	799.0
L Beige"	1	399.0	399.0	399.0
L Black/Beige"	4	367.0	335.0	399.0
L)"	11	484.4	91.0	690.0
L-12 Inches	1	264.0	264.0	264.0
L-24Inchs	2	56.0	56.0	56.0
L..."	6	NULL	NULL	NULL
LAR-11)"	2	499.0	499.0	499.0
LARGE)"	2	270.0	270.0	270.0
LCD led Fla..."	1	64.0	64.0	64.0
LCD and Plasma TV's"	4	17.0	13.0	21.0
LED	2	3.2999999952316284	3.3	3.3
LED Aircraft Strobe Lights for Motorcycles	1	29.0	29.0	29.0
LED Indicator Light Compatible for All Type-C/micro port(without data transf..."	1	31.0	31.0	31.0
LED Light Compatible with Hero 5 ..."	2	271.0	271.0	271.0
LED Light Up On Ear Kids Wireless Headphones with Mic	1	NULL	NULL	NULL
LED Strip (2 M..."	1	159.0	159.0	159.0
LED..."	1	NULL	NULL	NULL
LG	1	NULL	NULL	NULL
LID HD52-6312PRO H.265 HEVC DVB-S2 FullHD Set-Top Box GET Lifetime Get TV Channels (No Monthly Charge)"	1	5.0	5.0	5.0
LONG & STRONG 400ML"	1	213.0	213.0	213.0
LS2880)"	1	599.0	599.0	599.0
LS3880)"	2	599.0	599.0	599.0
LS3890)"	1	599.0	599.0	599.0
LS4000)"	2	599.0	599.0	599.0
LT. GREY MELANG..."	1	369.0	369.0	369.0
LUX adjustmen..."	2	NULL	NULL	NULL
Lace up Lightweight Shoes Running Shoes for Men's"	2	867.0	845.0	889.0
Lace up Lightweight Shoes for Running	11	3.44545454124312	1.8	3.9
Lace up Lightweight Shoes for Running"	3	537.0	537.0	537.0
Lace-up Lightweight Shoes for Running	12	3.3090908527374268	3.0	3.8
Lace-up Lightweight with Extra Cushion Shoes for Running	5	3.450000047683716	3.4	3.5
Lacquer copper bottle 1 litre	1	3.59999999046325684	3.6	3.6
Ladies Innerwear Panties	1	NULL	NULL	NULL
Ladies Panties	2	NULL	NULL	NULL
Ladies Panties Combo Pack	1	3.7000000047683716	3.7	3.7
Ladies Panty	1	NULL	NULL	NULL
Ladies Printed Pyjama	1	2.0	2.0	2.0
Ladies Purse	4	NULL	NULL	NULL
Ladies Wallet	3	NULL	NULL	NULL
Ladies rhinestones Sparkling Party Handbag Wedding Bag Purse"	1	699.0	699.0	699.0
Ladies's	3	3.60000000635782876	3.4	4.0
Lamp For Kids Room Nig..."	1	545.0	545.0	545.0
Lamp for Kids Room Nig..."	1	499.0	499.0	499.0
Lamp for Kids Room Night B..."	1	392.0	392.0	392.0
Langot	1	245.0	245.0	245.0
Langot For New Born Baby - Pack of 5(Animal Face ..."	1	449.0	449.0	449.0

category	num_sales	avg_sales	min_sales	max_sales
s-3/3 in inches- 36/36	1	NULL	NULL	NULL
s..."	1	500.0	500.0	500.0
sl72-mw-6.30meter"	1	899.0	899.0	899.0
sl83-mw-6.30meter"	1	899.0	899.0	899.0
sapphire	1	NULL	NULL	NULL
short silk slip dresses for women"	1	499.0	499.0	499.0
shoulder bag	1	3.0	3.0	3.0
showpiece False Fake Camera wit..."	2	2.0	2.0	2.0
side box plastic"	2	28.0	15.0	41.0
size -Get-Black"	1	290.0	290.0	290.0
size-Get	2	17.0	17.0	17.0
sky	1	3.2999999952316284	3.3	3.3
slipcover..."	1	NULL	NULL	NULL
small for multicolour sling Bag With Chain/Handbag/Crossbody Sling Bag/Purse/Stylish Bags For ..."	2	298.0	298.0	298.0
sphatik maia Certified Diamond Cut Crystal maia 108	1	3.0	3.0	3.0
sports & fitness	1	663.1200669657092	661.3	999.0
stematend)"	1	199.0	199.0	199.0
stores	19181	691.8844196947101	16.0	999.0
succulents and adenium Plants (2.5 kg) pack"	1	499.0	499.0	499.0
suitable for Municipal water(TDS below 200ppm) Eureka Forbes"	1	NULL	NULL	NULL
synthetic"	1	140.0	140.0	140.0
tablet and accessories with typ..."	2	NULL	NULL	NULL
transparent	2	16.0	16.0	16.0
thank you cards..."	1	599.0	599.0	599.0
tissue pl..."	1	NULL	NULL	NULL
toys & baby products	2391	547.3163016041489	15.0	999.0
toys.digital thermometer) 5 PIECES"	1	612.0	612.0	612.0
travel etc"	1	699.0	699.0	699.0
trendy Latest Girls Sparkling Chain Crossbody Bag Ladies Purse Wallet for Party..."	2	999.0	999.0	999.0
Tummy Twister & Trimmer/slimmer Dynamic Acupressure Disc 5 in 1 Twister	1	3.5	3.5	3.5
tv..."	1	37.0	37.0	37.0
up to..."	2	24.0	24.0	24.0
upper lip hair remover for women hair removal trimmer for women with LED Light for Women - R..."	1	479.0	479.0	479.0
Use All Colours (Not for Dent & Deep Scratches) +AAA 200gms extra882"	1	445.0	445.0	445.0
v3	1	4.0	4.0	4.0
via DSLR Camcorder Action Cam for High Definition ..."	1	NULL	NULL	NULL
vikram movie rolex surya earring	6	NULL	NULL	NULL
vivo	1	5.0	5.0	5.0
vivo Y31	2	NULL	NULL	NULL
wallet pouch and card holder- Extra Spacious"	1	949.0	949.0	949.0
walking Shoes	1	10.0	10.0	10.0
wash Cloth for Babies	3	NULL	NULL	NULL
wedding	3	3.0	1.0	4.0
wedding gowns for w..."	1	NULL	NULL	NULL
wedding gowns for women bridal	3	2.0	2.0	2.0
weight machine for Home kitchen Digital weighing hook scale	3	52.0	52.0	52.0
weight machine kata	3	21.0	21.0	21.0
white	2	3.7999999952316284	3.8	3.8
white layer pyramids"	1	195.0	195.0	195.0
white"	2	NULL	NULL	NULL
white)"	1	499.0	499.0	499.0
with 10mm Driver	1	3.2999999952316284	3.3	3.3
with 2 Dome Camera	1	NULL	NULL	NULL
with 4 Pcs Nipple Covers Reusable	1	3.2000000047683716	3.2	3.2
With Adjustable Dividers	1	14.0	14.0	14.0
with Cable"	1	799.0	799.0	799.0
with Charm Tassel"	1	NULL	NULL	NULL
with Heavy Bass	1	5.0	5.0	5.0
with Insert	1	3.90000000953674316	3.9	3.9
with Lens-Shielded Design	1	1.0	1.0	1.0
with Long Wrist Support Hand Safety"	1	198.0	198.0	198.0

category	num_sales	avg_sales	min_sales	max_sales				
Medium and ..."	1	NULL	NULL	NULL				
Medium and Large Check in- Cyan Hardsided Luggage (RAY 3P Combo 4W Cyan) (RAY3..." 1	1	597.0	597.0	597.0		NULL	NULL	
Medium tote Cotton Handbag..."	1	597.0	597.0	597.0				
Medium tote Cotton Handbag..."	2	597.0	597.0	597.0				
Medium)"	1	299.0	299.0	299.0				
Medjoul Khajoor"	1	721.0	721.0	721.0				
Mehndi)"	1	249.0	249.0	249.0				
Memory Foam Cushion	1	5.0	5.0	5.0				
Memory Slot	1	5.0	5.0	5.0				
Men	3	26.899999976158142	3.8	50.0				
Men & School Kids Women's Jute Bag for Shopping Small Jute..." 1	1	249.0	249.0	249.0		249.0		
Men ..."	2	299.0	299.0	299.0				
Men & Card Holder Wallet	3	1.666666666666667	1.0	2.0				
Men And ..."	2	299.0	299.0	299.0				
Men And K..."	3	299.0	299.0	299.0				
Men And Ki..."	2	299.0	299.0	299.0				
Men And Kids (..."	2	299.0	299.0	299.0				
Men And Kids (Me..."	3	299.0	299.0	299.0				
Men And Kids..."	3	299.0	299.0	299.0				
Men Chain Pendant Creative Compass Pendants Jewelry with Gift Pack..." 2	2	488.5	443.0	534.0				
Men Hand bag Eco Friendly Jute Bags	1	NULL	NULL	NULL				
Men Quick Beard Straightener Styler Comb	1	3.0	3.0	3.0				
Men's Shorts	1	24.0	24.0	24.0				
Men's Sleeveless Round Neck Cotton Vests	1	2.0	2.0	2.0				
Men's Women's Wetsuit Boots Quick Dry Water Pool Trainer Sport Shoes for Swim Surf Yoga B..." 1	1	999.0	999.0	999.0				
Mens Polo Tshirt with Pock..."	1	449.0	449.0	449.0				
Mens)"	1	NULL	NULL	NULL				
Mens) 6 mm Thickness"	1	339.0	339.0	339.0				
Mermaid Party Decorations	1	NULL	NULL	NULL				
Messenger Bag Chest Bag Side Bag Shoulder Bag	2	1.0	1.0	1.0				
Metal	1	165.0	165.0	165.0				
Metal 01 Necklace Ch..."	1	199.0	199.0	199.0				
Metal Blade) Tools for Soil Tilling Rust-Get Khurpi for Garden Plant T..." 1	1	NULL	NULL	NULL		NULL	NULL	
Metal Dog Leash Dog Chain with Handle for Small & Medium Large Size Dogs (Medium)" 1	1	299.0	299.0	299.0		299.0	299.0	
Metal Dog Leash Dog Chain with Handle for Small & Medium Size Dogs (Medium)" 1	1	261.0	261.0	261.0				
Metal Flash Light Rechargeable	4	3.149999976158142	2.6	3.9				
Metal Magnetic Earbud..."	1	12.0	12.0	12.0				
Metal Necklace Chain for Men and Women"	2	249.0	249.0	249.0				
Metal Pendant for Unisex"	2	248.0	248.0	248.0				
Metal)"	1	225.0	225.0	225.0				
Metal)"	4	616.0	450.0	699.0				
Metal) (Ac)"	1	998.0	998.0	998.0				
Metric Ratchet Wrench Set with 4-14mm CR-V Sockets	3	NULL	NULL	NULL				
Mic Buttons Magnetic Fit for Gym Run..."	1	1.0	1.0	1.0				
Mic(White)"	1	2.0	2.0	2.0				
Micro USB	2	NULL	NULL	NULL				
Micro USB & Lightni..."	1	4.0	4.0	4.0				
Micro USB OTG Micro USB + c c Type	1	4.5	4.5	4.5				
Micro-SD	1	4.0	4.0	4.0				
Microfiber Cloth	1	NULL	NULL	NULL				
Microfiber Towel Cap Twist Wrap Absorbent Quickly Dry Hair Turban for Kids and Women (Pink+Pur..." 1	1	395.0	395.0	395.0				
Mid Rise No Show Laser Cut Hipster Panties	3	195.33333333333334	64.0	261.0				
Middle Get silver	3	449.0	449.0	449.0				
Mild & Gentle with No Tears or Soap Get	1	NULL	NULL	NULL				
Military Dog Belt (Large-1.25 inch	1	8.0	8.0	8.0				
Military Grade Certified	1	NULL	NULL	NULL				
Military Green and Blue"	1	NULL	NULL	NULL				
Military Style	1	299.0	299.0	299.0				
Mini Cute Women Wallets Fashion Ladies Purses Ko..." 2	2	365.0	365.0	365.0				
Mini Jewellery Box	1	NULL	NULL	NULL				

category	num_sales	avg_sales	min_sales	max_sales				
Medium and ..."	1	NULL	NULL	NULL				
Medium and Large Check in- Cyan Hardsided Luggage (RAY 3P Combo 4W Cyan) (RAY3..." 1	1	597.0	597.0	597.0		NULL	NULL	
Medium tote Cotton Handbag..."	1	597.0	597.0	597.0				
Medium tote Cotton Handbag..."	2	597.0	597.0	597.0				
Medium)"	1	299.0	299.0	299.0				
Medjoul Khajoor"	1	721.0	721.0	721.0				
Mehndi)"	1	249.0	249.0	249.0				
Memory Foam Cushion	1	5.0	5.0	5.0				
Memory Slot	1	5.0	5.0	5.0				
Men	3	26.899999976158142	3.8	50.0				
Men & School Kids Women's Jute Bag for Shopping Small Jute..." 1	1	249.0	249.0	249.0		249.0		
Men ..."	2	299.0	299.0	299.0				
Men & Card Holder Wallet	3	1.666666666666667	1.0	2.0				
Men And ..."	2	299.0	299.0	299.0				
Men And K..."	3	299.0	299.0	299.0				
Men And Ki..."	2	299.0	299.0	299.0				
Men And Kids (..."	2	299.0	299.0	299.0				
Men And Kids (Me..."	3	299.0	299.0	299.0				
Men And Kids..."	3	299.0	299.0	299.0				
Men Chain Pendant Creative Compass Pendants Jewelry with Gift Pack..." 2	2	488.5	443.0	534.0				
Men Hand bag Eco Friendly Jute Bags	1	NULL	NULL	NULL				
Men Quick Beard Straightener Styler Comb	1	3.0	3.0	3.0				
Men's Shorts	1	24.0	24.0	24.0				
Men's Sleeveless Round Neck Cotton Vests	1	2.0	2.0	2.0				
Men's Women's Wetsuit Boots Quick Dry Water Pool Trainer Sport Shoes for Swim Surf Yoga B..." 1	1	999.0	999.0	999.0				
Mens Polo Tshirt with Pock..."	1	449.0	449.0	449.0				
Mens)"	1	NULL	NULL	NULL				
Mens) 6 mm Thickness"	1	339.0	339.0	339.0				
Mermaid Party Decorations	1	NULL	NULL	NULL				
Messenger Bag Chest Bag Side Bag Shoulder Bag	2	1.0	1.0	1.0				
Metal	1	165.0	165.0	165.0				
Metal 01 Necklace Ch..."	1	199.0	199.0	199.0				
Metal Blade) Tools for Soil Tilling Rust-Get Khurpi for Garden Plant T..." 1	1	NULL	NULL	NULL		NULL	NULL	
Metal Dog Leash Dog Chain with Handle for Small & Medium Large Size Dogs (Medium)" 1	1	299.0	299.0	299.0		299.0	299.0	
Metal Dog Leash Dog Chain with Handle for Small & Medium Size Dogs (Medium)" 1	1	261.0	261.0	261.0				
Metal Flash Light Rechargeable	4	3.149999976158142	2.6	3.9				
Metal Magnetic Earbud..."	1	12.0	12.0	12.0				
Metal Necklace Chain for Men and Women"	2	249.0	249.0	249.0				
Metal Pendant for Unisex"	2	248.0	248.0	248.0				
Metal)"	1	225.0	225.0	225.0				
Metal)"	4	616.0	450.0	699.0				
Metal) (Ac)"	1	998.0	998.0	998.0				
Metric Ratchet Wrench Set with 4-14mm CR-V Sockets	3	NULL	NULL	NULL				
Mic Buttons Magnetic Fit for Gym Run..."	1	1.0	1.0	1.0				
Mic(White)"	1	2.0	2.0	2.0				
Micro USB	2	NULL	NULL	NULL				
Micro USB & Lightni..."	1	4.0	4.0	4.0				
Micro USB OTG Micro USB + c c Type	1	4.5	4.5	4.5				
Micro-SD	1	4.0	4.0	4.0				
Microfiber Cloth	1	NULL	NULL	NULL				
Microfiber Towel Cap Twist Wrap Absorbent Quickly Dry Hair Turban for Kids and Women (Pink+Pur..." 1	1	395.0	395.0	395.0				
Mid Rise No Show Laser Cut Hipster Panties	3	195.33333333333334	64.0	261.0				
Middle Get silver	3	449.0	449.0	449.0				
Mild & Gentle with No Tears or Soap Get	1	NULL	NULL	NULL				
Military Dog Belt (Large-1.25 inch	1	8.0	8.0	8.0				
Military Grade Certified	1	NULL	NULL	NULL				
Military Green and Blue"	1	NULL	NULL	NULL				
Military Style	1	299.0	299.0	299.0				
Mini Cute Women Wallets Fashion Ladies Purses Ko..." 2	2	365.0	365.0	365.0				
Mini Jewellery Box	1	NULL	NULL	NULL				

Calculating Top 10 selling Categories

SELECT

main_category AS category,

AVG(actual_price) AS avg_sales

FROM product_sales

GROUP BY main_category

ORDER BY avg_sales DESC

LIMIT 10;

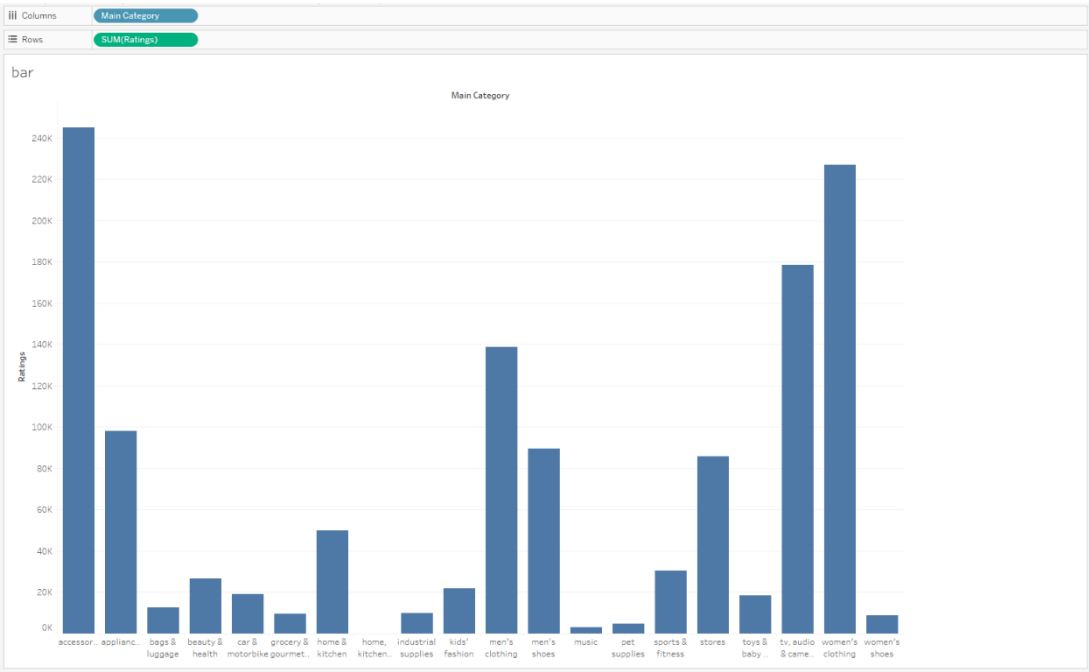
```
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2> SELECT
. . . . .> main_category AS category,
. . . . .> AVG(actual_price) AS avg_sales
. . . . .> FROM product_sales
. . . . .> GROUP BY main_category
. . . . .> ORDER BY avg_sales DESC
. . . . .> LIMIT 10;
INFO : Compiling command(queryId=hive_20230507091353_7e263943-4b08-49d0-8f6c-ff76eb80b2e2): SELECT
main_category AS category,
AVG(actual_price) AS avg_sales
FROM product_sales
GROUP BY main_category
ORDER BY avg_sales DESC
LIMIT 10
INFO : Semantic Analysis Completed (retrial = false)
INFO : Returning Hive schema: Schema(fieldSchemas:[FieldSchema(name:category, type:string, comment:null), FieldSchema(name:avg_sales, type:double, comment:null)], properties:null)
INFO : Completed compiling command(queryId=hive_20230507091353_7e263943-4b08-49d0-8f6c-ff76eb80b2e2); Time taken: 0.172 seconds
INFO : Executing command(queryId=hive_20230507091353_7e263943-4b08-49d0-8f6c-ff76eb80b2e2): SELECT
main_category AS category,
AVG(actual_price) AS avg_sales
FROM product_sales
GROUP BY main_category
ORDER BY avg_sales DESC
LIMIT 10
INFO : Query ID = hive_20230507091353_7e263943-4b08-49d0-8f6c-ff76eb80b2e2
INFO : Total jobs = 1
INFO : Launching Job 1 out of 1
INFO : Starting task [Stage-1:MAPRED] in serial mode
INFO : Subscribed to counters: {} for queryId: hive_20230507091353_7e263943-4b08-49d0-8f6c-ff76eb80b2e2
INFO : Session is already open
INFO : Dag name: SELECT
main_category AS category,
AVG(a...10 (Stage-1)
INFO : Status: Running (Executing on YARN cluster with App id application_1683436887119_0003)

-----
VERTICES      MODE      STATUS  TOTAL  COMPLETED  RUNNING  PENDING  FAILED  KILLED
-----
Map 1         container  RUNNING    3         0           2         1         0         0
Reducer 2     container  INITED      14         0          14         0         0         0
Reducer 3     container  INITED      1         0           0         1         0         0
-----
VERTICES: 00/03  [>-----] 0% ELAPSED TIME: 3.34 s
-----

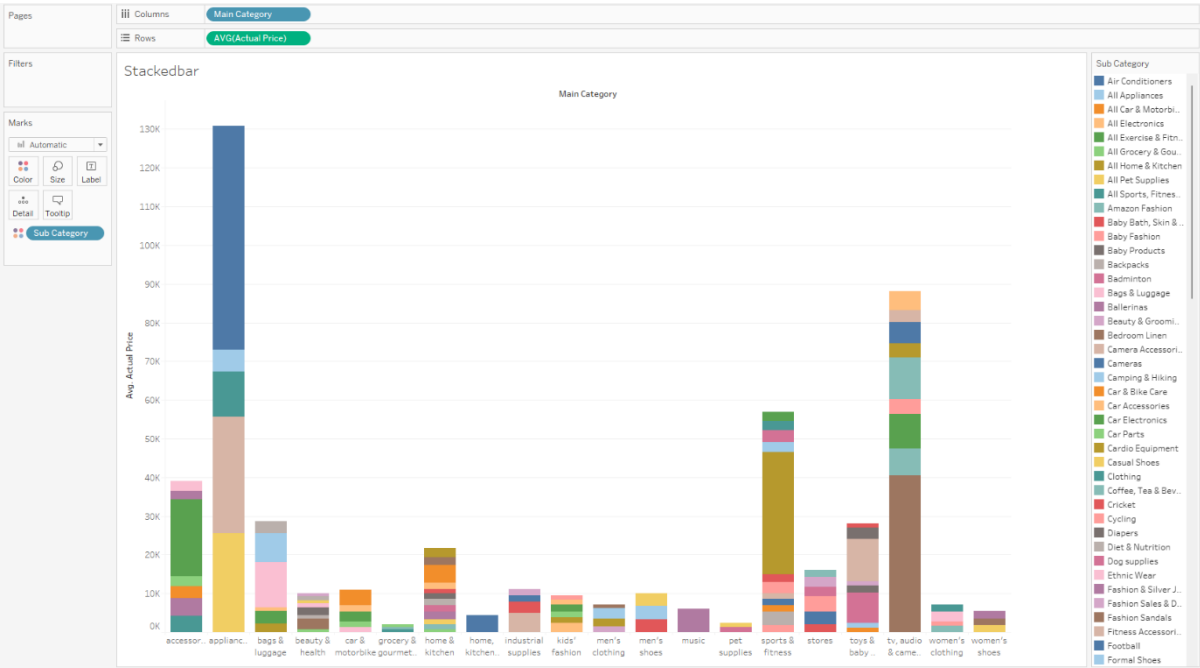
-----
|          category          | avg_sales |
-----
| 7130                       | 7112.0    | | | | |
| B3100                      | 5100.0    |
| 1012                       | 3050.0    |
| T6                         | 3050.0    |
| SKX 3401                   | 2160.0    |
| M1005                      | 1022.0    |
| Flexible & Breathable Casual Male Footwear Comfortable Gentle Fisherman... | 999.0    |
| 12 mm Heavy Padded Lights W... | 999.0    |
| 10 Feet Bedsheet || Super King Size with 2 Pillow Covers || 240 TC ... | 999.0    |
| (Metal)                    | 999.0    |
-----
10 rows selected (12.456 seconds)
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2>
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2> -- Display the results as a bar chart
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2> SET hive.cli.print.header=true;
Error: Error while processing statement: Cannot modify hive.cli.print.header at runtime. It is not in list of params that are allowed to be modified at runtime (state=42000,code=1)
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2> SET hive.cli.print.row.to.vertical=true;
Error: Error while processing statement: hive configuration hive.cli.print.row.to.vertical does not exists. (state=42000,code=1)
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2> !echo;
Unknown command: !echo;
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2> !echo "Top 10 Categories by Average Sales";
Unknown command: !echo "Top 10 Categories by Average Sales";
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2> !echo "=====";
Unknown command: !echo "=====";
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2> !echo;
Unknown command: !echo;
0: jdbc:hive2://sandbox-hdp.hortonworks.com:2> !hive -e "SELECT main_category AS category, AVG(actual_price - discount_price) AS avg_sales FROM product_sales GROUP BY main_category ORDER BY avg_sales DESC LIMIT 10" | tr -s '\t' ' ' |
"/ /s/g" | awk '{print $1 " " $2 " " $3}' | sed '1 s//Category | Avg Sales | \n/' | sed 's/ / /g' | awk '{printf "%-30s %-15s %15s", $1, $2, $3}' | python -c 'import matplotlib.pyplot as plt; import sys; x = [1; y = [1; sys
bin.readline()]; Top line in app.stdin: parts = line.strip().split("\t"); x.append(parts[0]); y.append(float(parts[1])); plt.bar(x, y); plt.xticks(rotation=90); plt.show();'
String index out of range: -1
Closing: 0: jdbc:hive2://sandbox-hdp.hortonworks.com:2181/default;password=hive;serviceDiscoveryMode=zooKeeper;user=hive;zooKeeperNamespace=hiveserver2
hadoop_dev@sandbox-hdp -11
```

DATA VISUALIZATION

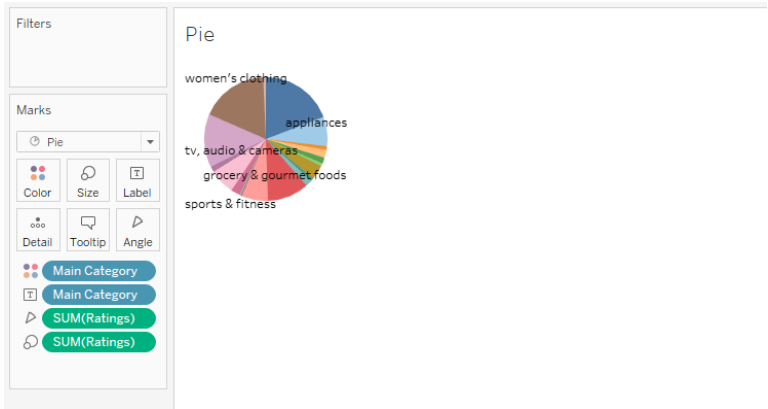
Bar Chart



Stacked Bar Chart



PIE Chart



Heatmap

