

EDA With SQL

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/* comparison between competitors per category*/
SELECT Product_Category,AVG(unit_price)as price,AVG(Competitor1_Unit_Price)as c1,
AVG(Competitor2_Unit_Price)as c2,AVG(Competitor3_Unit_Price)as c3
FROM retail_price
GROUP BY Product_Category
```

	Product_Category	price	c1	c2	c3
1	bed_bath_table	78.6292791522917	86.2666358322394	100.015623999424	44.2996287111376
2	computers_accessories	119.482322803442	139.455176422561	142.721838799076	102.599731224171
3	consoles_games	27.0337663130327	27.1015151630748	26.9660174629905	27.0337663130327
4	cool_stuff	107.857512490791	96.4831729018897	120.832184105589	86.5203890884132
5	furniture_decor	60.1542633374532	75.8836391766866	38.7262506484985	86.7008446057637
6	garden_tools	80.0946998119354	58.0585471391678	58.1940543413162	59.8845501184463
7	health_beauty	132.309868621826	32.9702663861788	90.5877890073336	59.7308069669283
8	perfumery	89.3488134237436	59.68610059298	119.011526254507	89.3488134237436
9	watches_gifts	164.88000643832	135.52803046958	129.618112212246	172.50640720997

```
/*number of weekdays and weekends relation with sales and demand*/
SELECT Month_Weekdays,AVG(unit_price)as price,AVG(Competitor1_Unit_Price)as c1,
AVG(Competitor2_Unit_Price)as c2,AVG(Competitor3_Unit_Price)as c3,
AVG(Quantity)AS Quantity_Sold,AVG(Customers_Demand)AS Demand
FROM retail_price
GROUP BY Month_Weekdays
ORDER BY Month_Weekdays
```

	Month_Weekdays	price	c1	c2	c3	Quantity_Sold	Demand
1	20	112.556232138856	82.2930038399892	100.290576359997	92.1795662657855	14	77
2	21	104.882650037117	81.1147310416687	90.9003814734849	81.0373528955018	13	76
3	22	106.17444041196	78.8892259878271	92.6872337565703	85.77427110485	15	87
4	23	106.247285550954	77.2576886293839	92.5436130445831	82.8052250998361	14	79

```
/*number of holidays relation with sales and demand*/
SELECT Month_Holidays,AVG(unit_price)as price,AVG(Competitor1_Unit_Price)as c1,
AVG(Competitor2_Unit_Price)as c2,AVG(Competitor3_Unit_Price)as c3,
AVG(Quantity)AS Quantity_Sold,AVG(Customers_Demand)AS Demand
FROM retail_price
GROUP BY Month_Holidays
ORDER BY Month_Holidays
```

	Month_Holidays	price	c1	c2	c3	Quantity_Sold	Demand
1	0	97.013803027925	71.2865329924084	79.6802033923921	75.737586520967	11	73
2	1	106.008520383291	79.9356182473929	95.1623275539418	82.6276070688673	12	69
3	2	111.996015339363	83.6928124893002	97.6369808708749	90.7864158211685	14	82
4	3	100.167249393463	67.2321253299713	77.0968819618225	76.468527507782	22	132
5	4	105.089355208657	78.3068060007962	82.84468720176	88.2845032431863	23	138

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/*volum and weight relation with price*/
SELECT Product_Category,AVG(unit_price)as
price,AVG(volume_cm3)volume,AVG(Product_Weight_g)weight,AVG(Competitor1_Unit_Price)as c1,
AVG(Competitor2_Unit_Price)as c2,AVG(Competitor3_Unit_Price)as c3
FROM retail_price
GROUP BY Product_Category
ORDER BY volume

```

Results Messages							
	Product_Category	price	volume	weight	c1	c2	c3
1	consoles_games	27.0337663130327	2304	127	27.1015151630748	26.9660174629905	27.0337663130327
2	watches_gifts	164.88000643832	3254	1101	135.52803046958	129.618112212246	172.50640720997
3	perfumery	89.3488134237436	4026	325	59.68610059298	119.011526254507	89.3488134237436
4	computers_accessories	119.482322803442	5026	1991	139.455176422561	142.721838799076	102.599731224171
5	health_beauty	132.309868621826	5181	440	32.9702663861788	90.5877890073336	59.7308069669283
6	furniture_decor	60.1542633374532	12770	1692	75.8836391766866	38.7262506484985	86.7008446057637
7	bed_bath_table	78.6292791522917	13347	1732	86.2666358322394	100.015623999424	44.2996287111376
8	cool_stuff	107.857512490791	18767	2313	96.4831729018897	120.832184105589	86.5203890884132
9	garden_tools	80.0946998119354	20007	3817	58.0585471391678	58.1940543413162	59.8845501184463

```

/*max & min unit price*/
SELECT Product_Category,MAX(unit_price)as MAXprice,MIN(unit_price)as MINprice,
MAX(Competitor1_Unit_Price)as c1_max,MIN(Competitor1_Unit_Price)as c1_min,
MAX(Competitor2_Unit_Price)as c2_max,MIN(Competitor2_Unit_Price)as c2_min,
MAX(Competitor3_Unit_Price)as c3_max,MIN(Competitor3_Unit_Price)as c3_min,
CEILING(SUM(Quantity))Quantity_sold,CEILING(SUM(total_price))Revenue,SUM(Customers_Demand
)demand
FROM retail_price
GROUP BY Product_Category

```

Results Messages												
	Product_Category	MAXprice	MINprice	c1_max	c1_min	c2_max	c2_min	c3_max	c3_min	Quantity_sold	Revenue	demand
1	bed_bath_table	215	39.2400016784668	89.9000015258789	74	215	39.2400016784668	89.9000015258789	39.2400016784668	1026	95085	3313
2	computers_accessories	178.057144165039	66.3421401977539	178.057144165039	94.9000015258789	178.057144165039	94.9000015258789	178.057144165039	77.9000015258789	1167	142098	4807
3	consoles_games	36.2000007629395	19.8999996185303	36.2000007629395	19.8999996185303	36.2000007629395	19.8999996185303	36.2000007629395	19.8999996185303	239	5801	439
4	cool_stuff	176.990005493164	29.5	99.989978637695	35	129.990005493164	29.5	176.990005493164	29.5	558	57957	2168
5	furniture_decor	103.233329772949	34.5811767578125	103.233329772949	38.4000015258789	99.9000015258789	35	99.9000015258789	38.4000015258789	894	56926	2495
6	garden_tools	187.854278564453	49.9000015258789	179.990005493164	49.9000015258789	179.990005493164	49.9000015258789	179.990005493164	49.9000015258789	2398	163583	17618
7	health_beauty	364	19.989999771182	349.899993896484	19.989999771182	349.899993896484	19.989999771182	64.9899978637695	58.7995223999023	1842	212410	13765
8	perfumery	142.5	49.9900016784668	119.900001525879	49.9900016784668	142.5	56.9900016784668	142.5	49.9900016784668	244	20313	427
9	watches_gifts	348.799987792969	77.8214263916016	339.899993896484	78	346.157989501953	78	255.610000610352	132.53125	1431	207583	9743

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/*max&min delivery cost*/
SELECT Product_Category,MAX(Delivery_Cost)as MAXprice,MIN(Delivery_Cost)as MINprice,
MAX(Competitor1_Delivery_Cost)as c1_max,MIN(Competitor1_Delivery_Cost)as c1_min,
MAX(Competitor2_Delivery_Cost)as c2_max,MIN(Competitor2_Delivery_Cost)as c2_min,
MAX(Competitor3_Delivery_Cost)as c3_max,MIN(Competitor3_Delivery_Cost)as c3_min
FROM retail_price
GROUP BY Product_Category

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	Product_Category	MAXprice	MINprice	c1_max	c1_min	c2_max	c2_min	c3_max	c3_min
1	bed_bath_table	24.6900005340576	4.40999984741211	23.005651473999	12.9399995803833	24.6900005340576	4.40999984741211	20.4174995422363	10.2563161849976
2	computers_accessories	53.6255569458008	10.3900003433228	53.6255569458008	15.8400001525879	48.1083335876465	10.3900003433228	48.1083335876465	10.3900003433228
3	consoles_games	22.1800003051758	11.8500003814697	22.1800003051758	12.8737497329712	22.1800003051758	11.8500003814697	22.1800003051758	11.8500003814697
4	cool_stuff	57.2299995422363	11.7299995422363	57.2299995422363	13.6374998092651	57.2299995422363	11.7299995422363	57.2299995422363	11.7299995422363
5	furniture_decor	29.7900009155273	3.80163049697876	29.7900009155273	3.80163049697876	20.6466674804688	7.78000020980835	28.8907699584961	7.78000020980835
6	garden_tools	79.76000021362305	5.28173923492432	36.6433334350586	5.28173923492432	36.6433334350586	13.5103445053101	40.8012504577637	12.9799995422363
7	health_beauty	44.6300010681152	7.67000007629395	37.0915374755859	7.98857164382935	26.9274997711182	11.0600004196167	22.6783332824707	7.67000007629395
8	perfumery	21.6499996185303	9.1899995803833	18.4524993896484	11.75	21.6499996185303	9.1899995803833	21.6499996185303	9.1899995803833
9	watches_gifts	29.4768753051758	0.0954385995864868	21.8799991607666	0.0954385995864868	24.9387493133545	6.80999994277954	21.8972721099854	14.2124996185303

```

/* Total sales per category*/
SELECT Product_Category,round(SUM(Total_Price),2)as
total_sales,ROUND(AVG(unit_price),2)price
FROM retail_price
GROUP BY Product_Category
ORDER BY total_sales DESC

```

	Product_Category	total_sales	price
1	health_beauty	212409.24	132.31
2	watches_gifts	207582.17	164.88
3	garden_tools	163582.54	80.09
4	computers_accessories	142097.95	119.48
5	bed_bath_table	95084.52	78.63
6	cool_stuff	57956.3	107.86
7	furniture_decor	56925.16	60.15
8	perfumery	20312.52	89.35
9	consoles_games	5800.7	27.03

```

/*Top Selling Products comaprison with prices*/
SELECT Top 5
Product_ID,CEILING(AVG(Unit_Price))Unite_price,CEILING(AVG(Competitor1_Unit_Price))C1,
CEILING(AVG(Competitor2_Unit_Price))C2,CEILING(AVG(Competitor3_Unit_Price))C3,
CEILING(SUM(Quantity))Quantity_sold,CEILING(SUM(total_price))Revenue
FROM retail_price
GROUP BY Product_ID
ORDER BY Quantity_sold DESC, Revenue DESC

```

	month	Year	Demand	avgPrice	Quantity_Sold
1	11	2017	138	105.089355208657	23
2	5	2018	132	100.167249393463	22
3	1	2018	101	109.686024506887	18
4	2	2018	106	107.690421435298	17
5	3	2018	105	101.809616165161	16

```

/*Lowest Selling Products comaprison with prices*/
SELECT Top 5
Product_ID,CEILING(AVG(Unit_Price))Unite_price,CEILING(AVG(Competitor1_Unit_Price))C1,
CEILING(AVG(Competitor2_Unit_Price))C2,CEILING(AVG(Competitor3_Unit_Price))C3,
CEILING(SUM(Quantity))Quantity_sold,CEILING(SUM(total_price))Revenue
FROM retail_price
GROUP BY Product_ID
ORDER BY Quantity_sold , Revenue

```

	Product_ID	Unite_price	C1	C2	C3	Quantity_sold	Revenue
1	consoles2	26	26	26	26	97	2385
2	furniture3	37	74	37	84	97	3508
3	cool5	99	100	126	80	97	9628
4	furniture4	97	79	43	97	101	9647
5	computers3	144	154	147	130	103	15112

```
/*Top selling months*/
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```
SELECT top 5 month,Year,Product_ID, AVG(Customers_Demand)AS Demand,AVG(Unit_Price)AS
Price,AVG(Quantity)AS Quantity_Sold
FROM retail_price
GROUP BY Month,Year,Product_ID
ORDER BY Quantity_Sold DESC,price
```

Results		Messages				
	month	Year	Product_ID	Demand	Price	Quantity_Sold
1	1	2018	furniture2	125	69.9953308105469	122
2	5	2018	watches6	260	103.792526245117	114
3	5	2018	furniture2	95	69.9000015258789	92
4	11	2017	garden6	339	52.4069442749023	91
5	11	2017	garden10	339	53.6482810974121	87

```
/*Lowest selling months*/
```

```
SELECT top 5 month,Year, AVG(Customers_Demand)AS Demand,AVG(Unit_Price)AS
avgPrice,AVG(Quantity)AS Quantity_Sold
FROM retail_price
GROUP BY Month,Year
ORDER BY Quantity_Sold ,avgprice
```

Results		Messages			
	month	Year	Demand	avgPrice	Quantity_Sold
1	2	2017	8	127.827142715454	3
2	1	2017	9	207.444995880127	4
3	3	2017	18	122.586614902203	7
4	8	2018	56	95.2164704172235	8
5	4	2017	20	119.28866742452	8