

# IBM COGNOS DATA ANALYTICS ASSIGNMENT-1

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## ➤ Uploading the dataset and creating a data module and cleaning the dataset

### 1. Created a column “total revenue”

| ↑↓ | Total Revenue | Row Id | Invoice ID  | Branch | City      | Customer type | Gender |
|----|---------------|--------|-------------|--------|-----------|---------------|--------|
|    | 548.97        | 1      | 750-67-8428 | A      | Yangon    | Member        | Female |
|    | 80.22         | 2      | 226-31-3081 | C      | Naypyitaw | Normal        | Female |
|    | 340.53        | 3      | 631-41-3108 | A      | Yangon    | Normal        | Male   |
|    | 489.05        | 4      | 123-19-1176 | A      | Yangon    | Member        | Male   |
|    | 634.38        | 5      | 373-73-7910 | A      | Yangon    | Normal        | Male   |
|    | 627.62        | 6      | 699-14-3026 | C      | Naypyitaw | Normal        | Male   |
|    | 433.69        | 7      | 355-53-5943 | A      | Yangon    | Member        | Female |
|    | 772.38        | 8      | 315-22-5665 | C      | Naypyitaw | Normal        | Female |
|    | 76.15         | 9      | 665-32-9167 | A      | Yangon    | Member        | Female |
|    | 172.75        | 10     | 692-92-5582 | B      | Mandalay  | Member        | Female |
|    | 60.82         | 11     | 351-62-0822 | B      | Mandalay  | Member        | Female |
|    | 107.14        | 12     | 529-56-3974 | B      | Mandalay  | Member        | Male   |
|    | 246.49        | 13     | 365-64-0515 | A      | Yangon    | Normal        | Female |

### 2. Round figured decimal value by 2 digits

| cogs   | gross margin percentage | gross income | Rating |
|--------|-------------------------|--------------|--------|
| 522.83 | 4.76                    | 26.14        | 9.1    |
| 76.4   | 4.76                    | 3.82         | 9.6    |
| 324.31 | 4.76                    | 16.22        | 7.4    |
| 465.76 | 4.76                    | 23.29        | 8.4    |
| 604.17 | 4.76                    | 30.21        | 5.3    |
| 597.73 | 4.76                    | 29.89        | 4.1    |
| 413.04 | 4.76                    | 20.65        | 5.8    |
| 735.6  | 4.76                    | 36.78        | 8      |
| 72.52  | 4.76                    | 3.63         | 7.2    |
| 164.52 | 4.76                    | 8.23         | 5.9    |
| 57.92  | 4.76                    | 2.90         | 4.5    |
| 102.04 | 4.76                    | 5.10         | 6.8    |
| 234.75 | 4.76                    | 11.74        | 7.1    |

### 3. Splitted the date columns into individual columns as year, month, day and created a column “day of the week”

| Date       | Year | Month | Day | Day of the week |
|------------|------|-------|-----|-----------------|
| 2019-01-05 | 2019 | 1     | 5   | Saturday        |
| 2019-03-08 | 2019 | 3     | 8   | Friday          |
| 2019-03-03 | 2019 | 3     | 3   | Sunday          |
| 2019-01-27 | 2019 | 1     | 27  | Sunday          |
| 2019-02-08 | 2019 | 2     | 8   | Friday          |
| 2019-03-25 | 2019 | 3     | 25  | Monday          |
| 2019-02-25 | 2019 | 2     | 25  | Monday          |
| 2019-02-24 | 2019 | 2     | 24  | Sunday          |
| 2019-01-10 | 2019 | 1     | 10  | Thursday        |
| 2019-02-20 | 2019 | 2     | 20  | Wednesday       |
| 2019-02-06 | 2019 | 2     | 6   | Wednesday       |
| 2019-03-09 | 2019 | 3     | 9   | Saturday        |
| 2019-02-12 | 2019 | 2     | 12  | Tuesday         |

### 4. Splitted the time column into hours, minutes

| Time     | Hour | Minute |
|----------|------|--------|
| 13:08:00 | 13   | 8      |
| 10:29:00 | 10   | 29     |
| 13:23:00 | 13   | 23     |
| 20:33:00 | 20   | 33     |
| 10:37:00 | 10   | 37     |
| 18:30:00 | 18   | 30     |
| 14:36:00 | 14   | 36     |
| 11:38:00 | 11   | 38     |
| 17:15:00 | 17   | 15     |
| 13:27:00 | 13   | 27     |
| 18:07:00 | 18   | 7      |
| 17:03:00 | 17   | 3      |
| 10:25:00 | 10   | 25     |

5. Here tax and gross income are having same data values we can delete any of them based on our need or we can ignore them

| Tax 5% |
|--------|
| 26.14  |
| 3.82   |
| 16.22  |
| 23.29  |
| 30.21  |
| 29.89  |
| 20.65  |
| 36.78  |
| 3.63   |
| 8.23   |
| 2.90   |
| 5.10   |
| 11.74  |

| gross income |
|--------------|
| 26.14        |
| 3.82         |
| 16.22        |
| 23.29        |
| 30.21        |
| 29.89        |
| 20.65        |
| 36.78        |
| 3.63         |
| 8.23         |
| 2.90         |
| 5.10         |
| 11.74        |

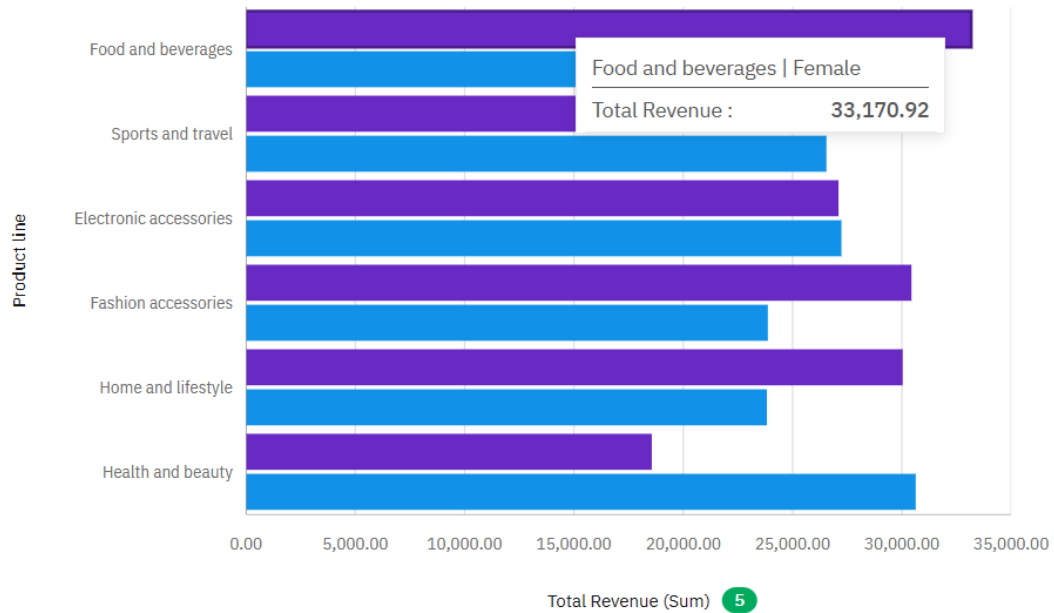
## ➤ EXPLORATIONS

### 1. Bar chart

#### Total Revenue by Product line coloured by Gender

Total Revenue by Product line colored by Gender

Gender  
● Female ● Male



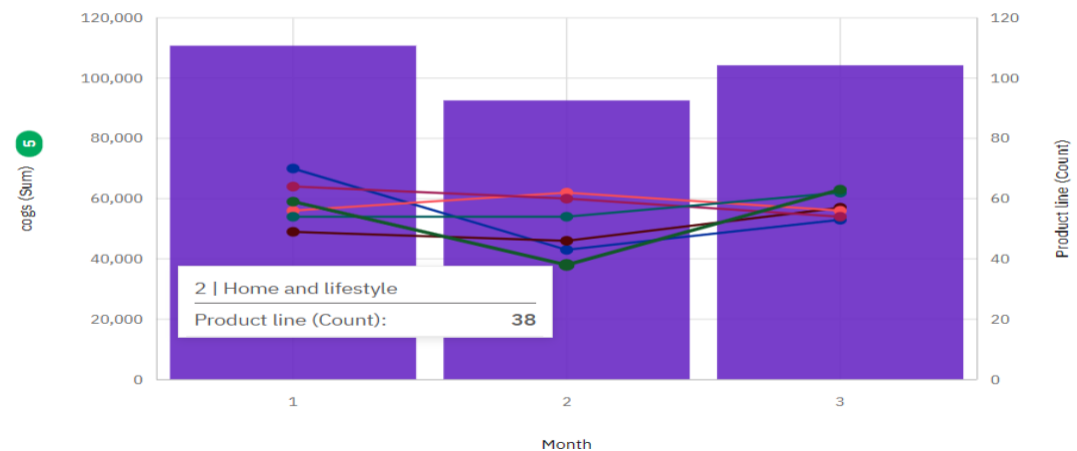
### 2. Line and column chart

#### Product line and cogs for Month colored by Product line

Product line and cogs for Month colored by Product line

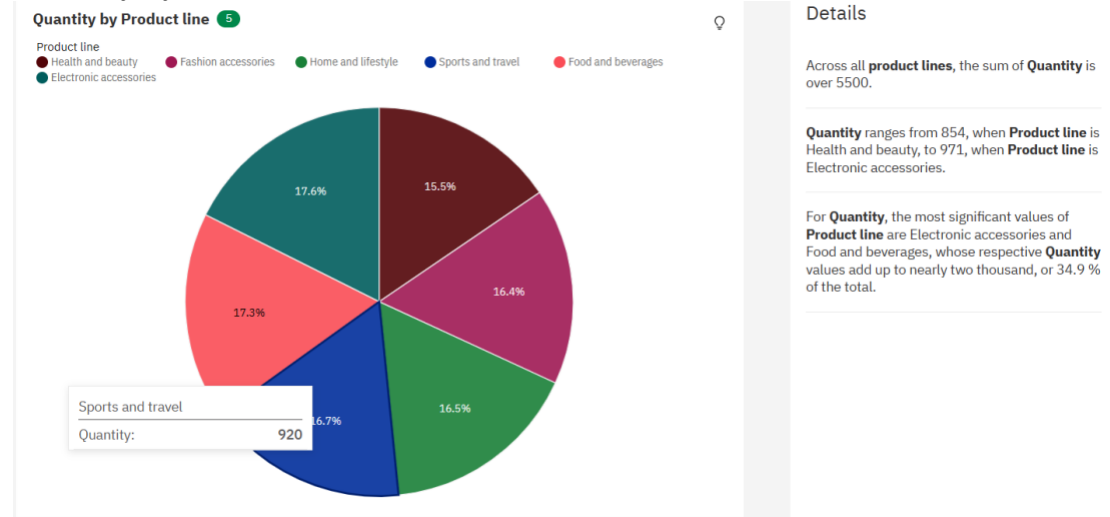
Column  
● cogs (Sum)

Product line  
● Electronic accessories ● Fashion accessories ● Food and beverages ● Health and beauty  
● Home and lifestyle ● Sports and travel



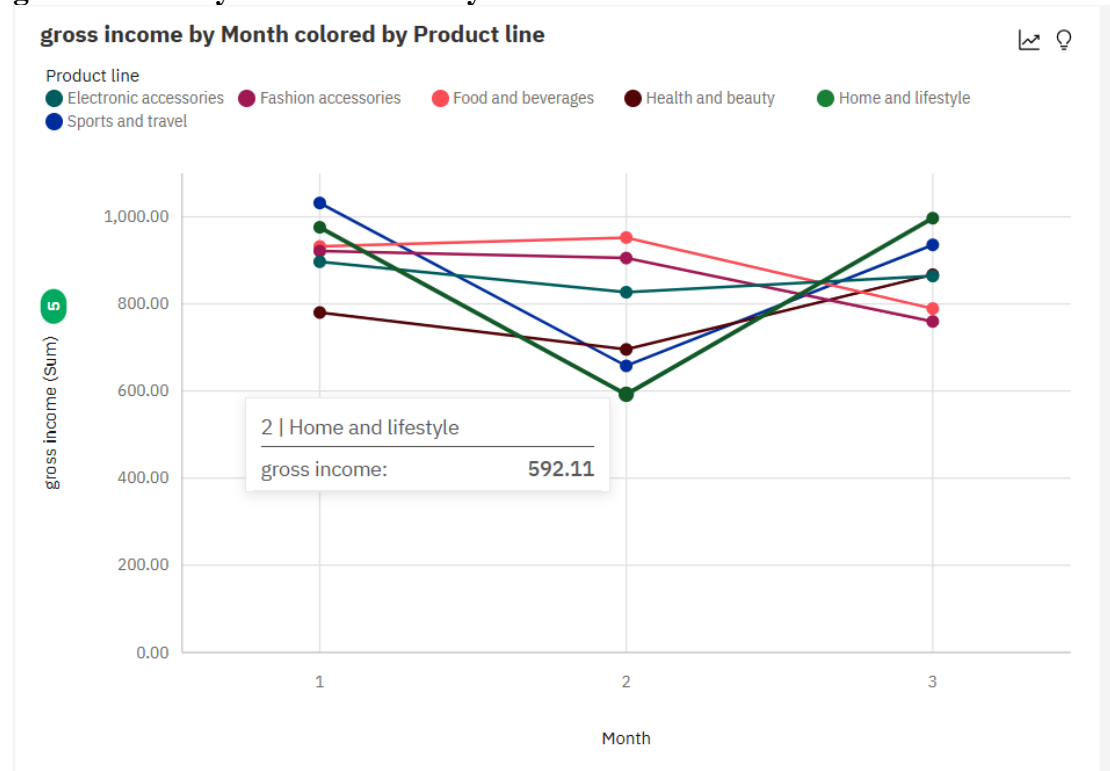
### 3. Pie chart

#### Quantity by Product line



### 4. Line chart

#### gross income by Month colored by Product line



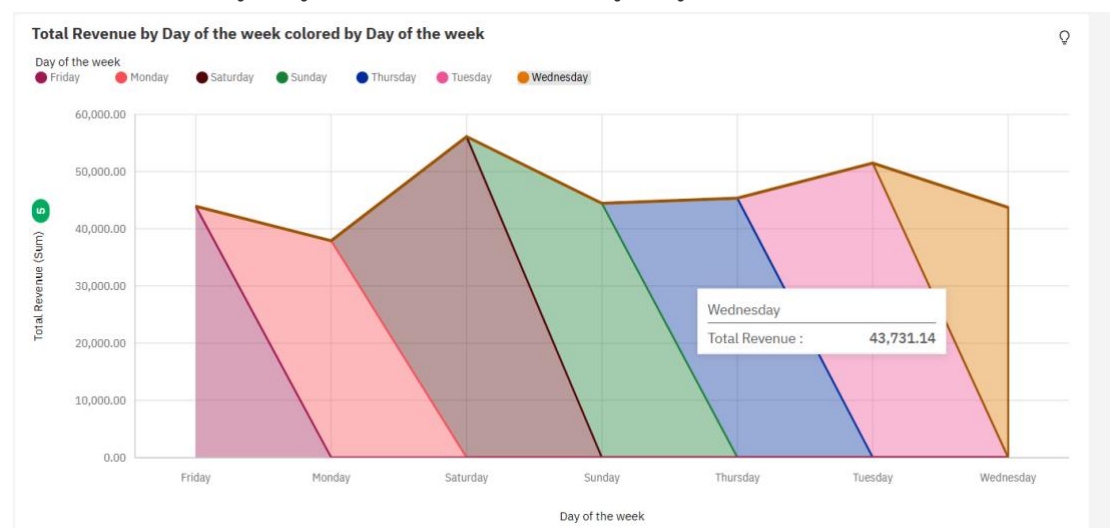
## 5. Bubble Chart

Month by cogs colored by Product line and sized by cogs



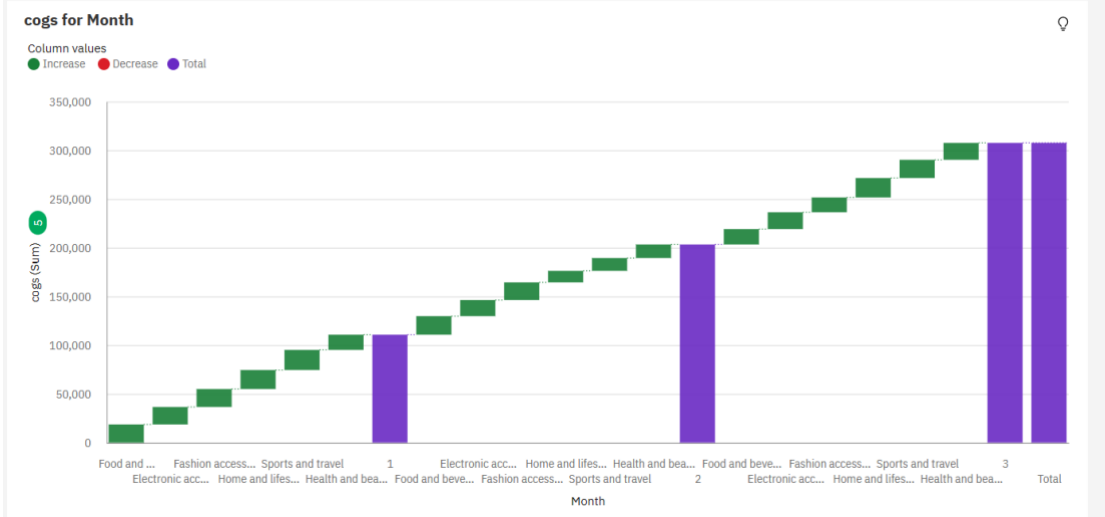
## 6. Area chart

Total Revenue by Day of the week colored by Day of the week



## 7. Waterfall chart

How many good are sold on a month based on particular city?



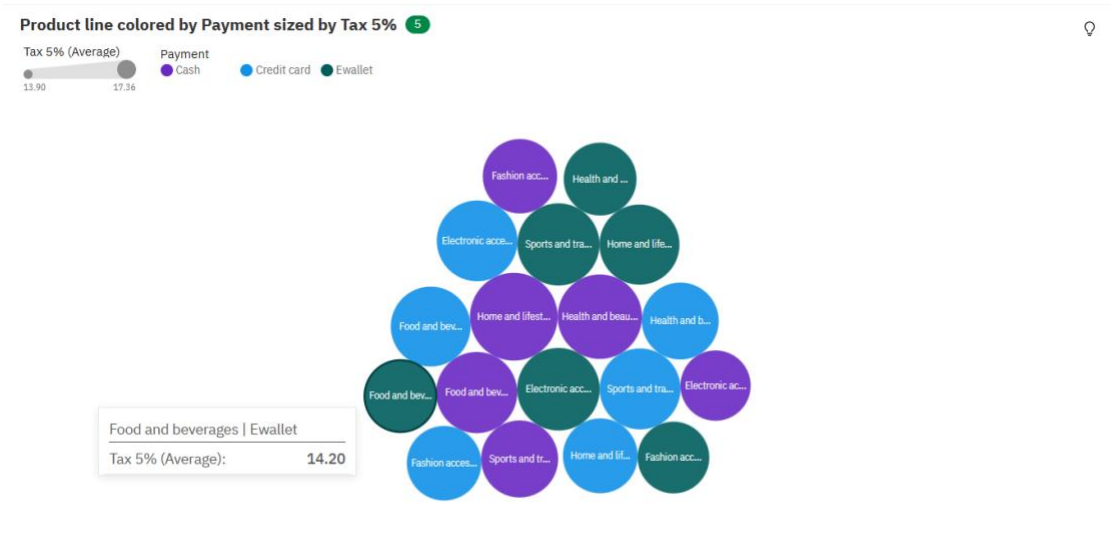
## 8. Word cloud

Product line colored by Payment sized by cogs



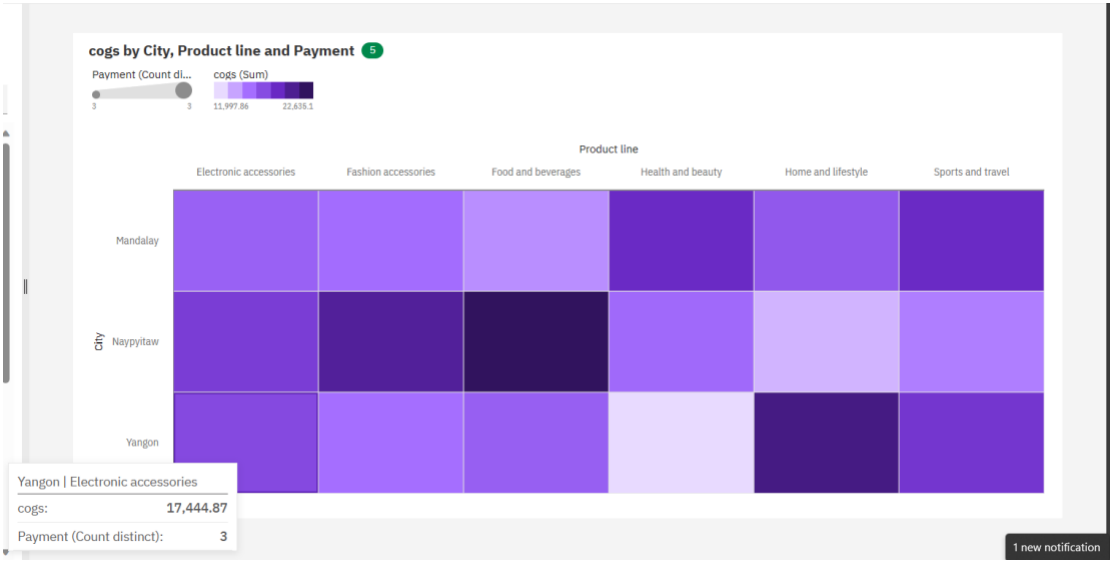
9. Packed Bubble chart

Product line colored by Payment sized by Tax 5%



10. Heat map chart

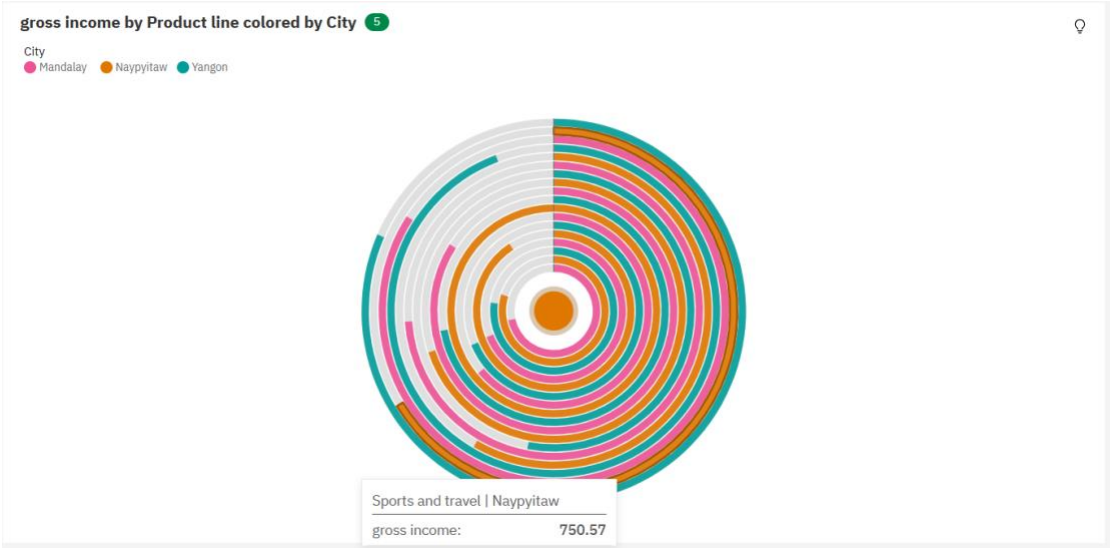
cogs by City, Product line and Payment





11. Radial chart

Gross income by Product line colored by City



12. Crosstab chart

Gross income for payment and product line

gross income for Payment and Product line 5

| gross income        | Cash     | Credit card | Ewallet  | Summary   |
|---------------------|----------|-------------|----------|-----------|
| Electronic acces... | 987.14   | 734.67      | 865.69   | 2,587.50  |
| Fashion accessor... | 838.75   | 825.48      | 921.76   | 2,586.00  |
| Food and bevera...  | 914.80   | 963.58      | 795.18   | 2,673.56  |
| Health and beauty   | 818.53   | 760.45      | 763.58   | 2,342.56  |
| Home and lifestyle  | 885.19   | 665.86      | 1,013.80 | 2,564.85  |
| Sports and travel   | 898.75   | 848.39      | 877.75   | 2,624.90  |
| Summary             | 5,343.17 | 4,798.43    | 5,237.77 | 15,379.37 |

gross income and Total Revenue for Payment and Product line on a particular month(i.e., 3) and on a particular week of the day (i.e., Saturday)

gross income and Total Revenue for Payment and Product line 10

|                     | Cash         |               | Credit card  |               | Ewallet      |               | Summary      |               |
|---------------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|
|                     | gross income | Total Revenue | gross income | Total Revenue | gross income | Total Revenue | gross income | Total Revenue |
| Electronic acces... | 99.73        | 2,094.39      | 48.71        | 1,022.82      | 40.67        | 854.15        | 189.11       | 3,971.3       |
| Fashion accessor... | 0.81         | 17.09         | 121.91       | 2,560.12      | 73.06        | 1,534.19      | 195.78       | 4,111.4       |
| Food and bevera...  | 118.33       | 2,484.96      | 29.01        | 609.17        | 59.28        | 1,244.94      | 206.62       | 4,339.0       |
| Health and beauty   | 81.59        | 1,713.35      | 10.34        | 217.18        | 102.70       | 2,156.67      | 194.63       | 4,087.2       |
| Home and lifestyle  | 94.40        | 1,982.44      | 28.42        | 596.82        | 60.28        | 1,265.89      | 183.10       | 3,845.1       |
| Sports and travel   | 52.43        | 1,100.96      | 103.77       | 2,179.23      | 101.74       | 2,136.55      | 257.94       | 5,416.7       |
| Summary             | 447.29       | 9,393.20      | 342.16       | 7,185.34      | 437.73       | 9,192.39      | 1,227.19     | 25,770.9      |

13. Sunburst

Number of records of different payments took place on a particular days, hours, minutes

Minute, Day, and Hour predict Payment with a strength of 29%.

