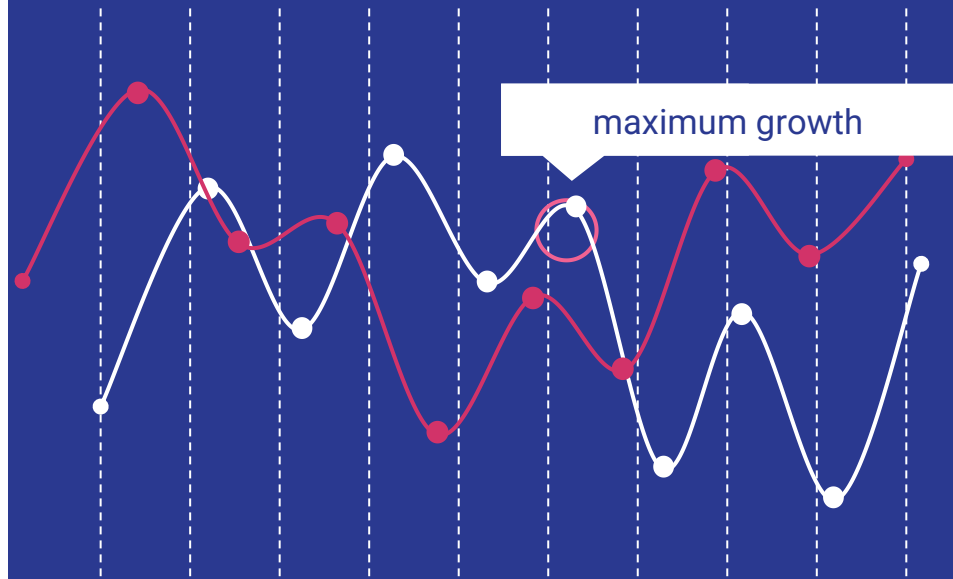


Data to Information: Case Study

Coding and Big Data

Rachmayanti Prameswari



Data Processing

Transform Data into Information

At the Core of an Information System is a Database (raw data).

- Recall that a basic system is composed of 5 components
- Input, Output, Processing, Feedback, Control
- Typically processing helps transform data into information.

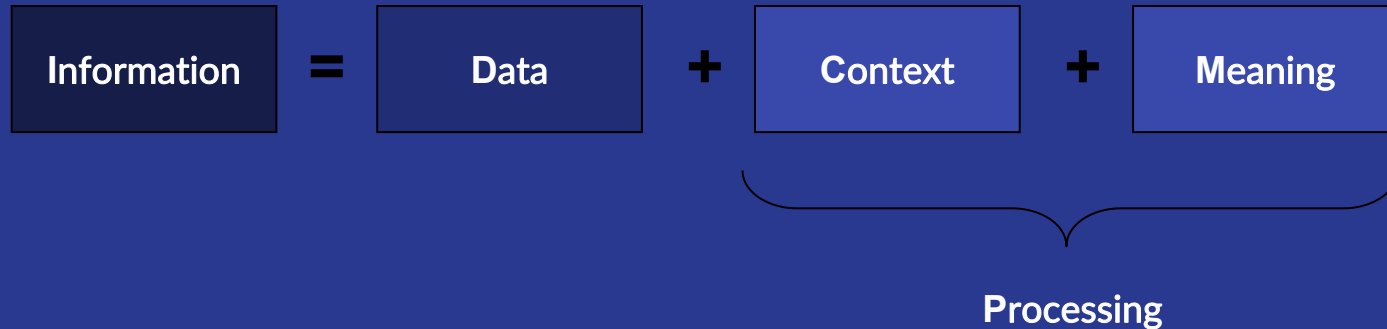


Transform Data into Information

Data -> raw facts and figures

Information -> data that has been processed (in a context) to give it meaning

Example: Through statistics



Case 1

- Business Type: Restaurant
- Role: Manager

DCOVA Method

- **Define:** The progress of the restaurant operational and demand my opinion to improve the quality of the restaurant.
- **Collect:** The database consists of three tables; Customer, Menu, Transaction and Transaction Detail.
- **Organize:** The data collected by developing of three tables.
- **Visualize:** The data by developing charts.
- **Analyze:** The data collected to reach conclusions and present those results.

DCOVA Method

DCOVA

Define: The progress of the restaurant operational and demand my opinion to improve the quality of the restaurant.

You are a manager of a new small restaurant. This new restaurant has been operating for 1 month. As the manager, you are responsible to make sure that the restaurant is running on track.

The owner of the restaurant has invited you for a short presentation. He would like to know the progress of the restaurant operational and demand your opinion to improve the quality of the restaurant.

Collect: The database consists of three tables; Customer, Menu, Transaction and Transaction Detail.

DCOVA

MemberID	First Name	Last Name	City	Email	DoB
M0001	John	Lennon	Jakarta	john@mail.com	20-Jan-70
M0002	Julian	Lennon	Jakarta	jul@mail.com	15-Dec-75
M0003	Mark	Smith	Jakarta	mark@mail.com	13-Mar-80
M0004	Sue	Smith	Jakarta	sue@mail.com	27-Jul-82
M0005	Laura	Smith	Jakarta	laura@mail.com	04-Sep-15
M0006	Phil	Brown	Bekasi	phil@mail.com	24-Jan-75
M0007	Anne	Brown	Bekasi	ann@mail.com	24-Okt-78
M0008	Jack	Brown	Bekasi	jack@mail.com	24-Feb-15
M0009	Susy	White	Jakarta	susy@mail.com	16-Nop-00
M0010	Ken	Green	Depok	ken@mail.com	07-Dec-03

Type	Name
meal	Nasi Goreng Sapi
meal	Nasi Goreng Ayam
meal	Mie Goreng Sapi
meal	Mie Goreng Ayam
beverage	Tea
beverage	Mineral Water
beverage	Orange Juice
beverage	Apple Juice
other	Strawbery Ice Cream
other	Apple Pie

MemberID	First Name	Last Name	Date	TransacID	Name	Qty	subTotal (IDR)	totalPayment (IDR)
M0001	John	Lennon	01-Mar-21	TR001	Nasi Goreng Sapi	1	Rp 35.000,00	Rp 77.000,00
					Mie Goreng Ayam	1	Rp 32.000,00	
					Mineral Water	2	Rp 10.000,00	
M0002	Julian	Lennon	04-Mar-21	TR002	Mie Goreng Ayam	1	Rp 32.000,00	Rp 40.000,00
					Tea	1	Rp 8.000,00	
			17-Mar-21	TR005	Mie Goreng Ayam	1	Rp 32.000,00	Rp 40.000,00
M0003	Mark	Smith	04-Mar-21	TR003	Tea	1	Rp 8.000,00	
					Nasi Goreng Ayam	3	Rp 90.000,00	Rp 182.000,00
					Mie Goreng Sapi	1	Rp 38.000,00	
					Orange Juice	3	Rp 36.000,00	
M0007	Anne	Brown	08-Mar-21	TR004	Strawbery Ice Cream	1	Rp 18.000,00	Rp 168.000,00
					Mie Goreng Ayam	3	Rp 96.000,00	
					Orange Juice	3	Rp 36.000,00	
					Strawbery Ice Cream	2	Rp 36.000,00	
M0009	Susy	White	20-Mar-21	TR006	Strawbery Ice Cream	2	Rp 36.000,00	Rp 36.000,00
M0010	Ken	Green	21-Mar-21	TR007	Mineral Water	1	Rp 5.000,00	Rp 5.000,00

Organize : Categorical Data Are Organized By Utilizing Tables

Type Menu

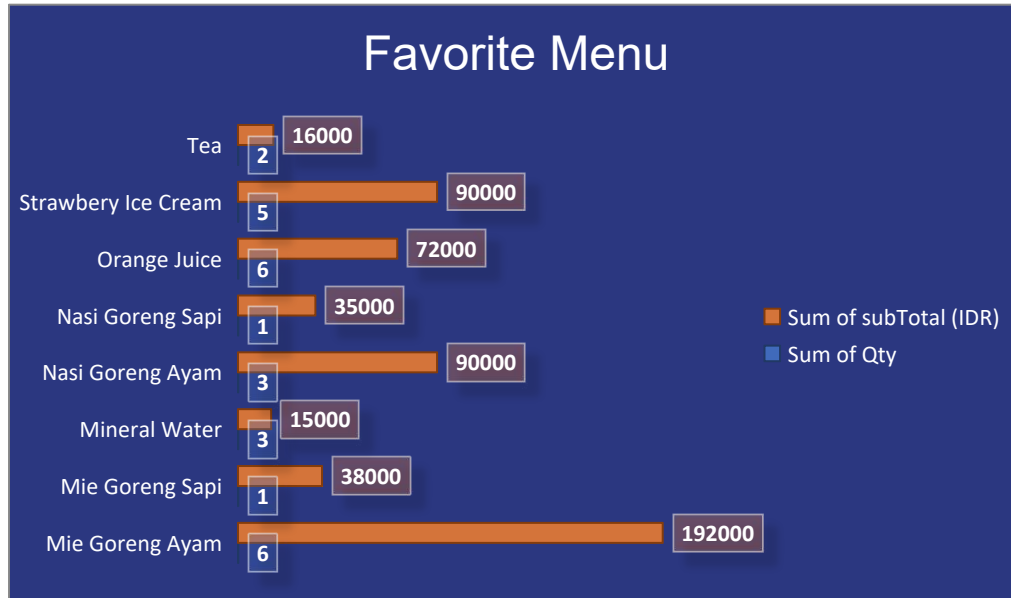
Type	Name
meal	Nasi Goreng Sapi
meal	Nasi Goreng Ayam
meal	Mie Goreng Sapi
meal	Mie Goreng Ayam
beverage	Tea
beverage	Mineral Water
beverage	Orange Juice
beverage	Apple Juice
other	Strawbery Ice Cream
other	Apple Pie

The restaurant has 3 types of menu, namely Meal, Beverage, and Other.



Visualize: Visualizing Categorical Data Through Bar Chart

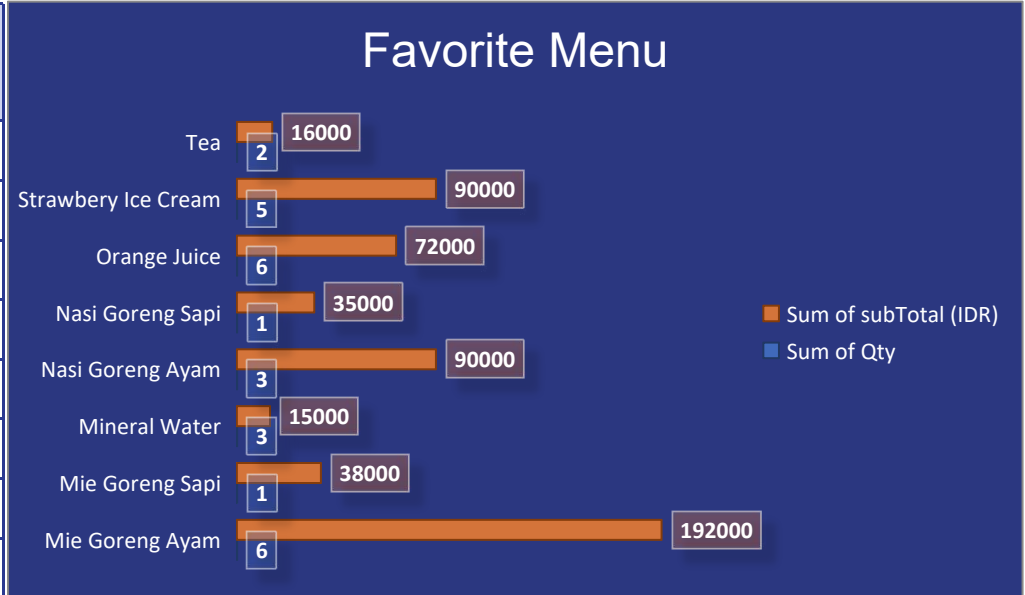
Favorite Menu



From the data on the side, it shows that the favorite menus or menus that are most purchased by customers are strawberry ice cream, orange juice, and mie goreng ayam.

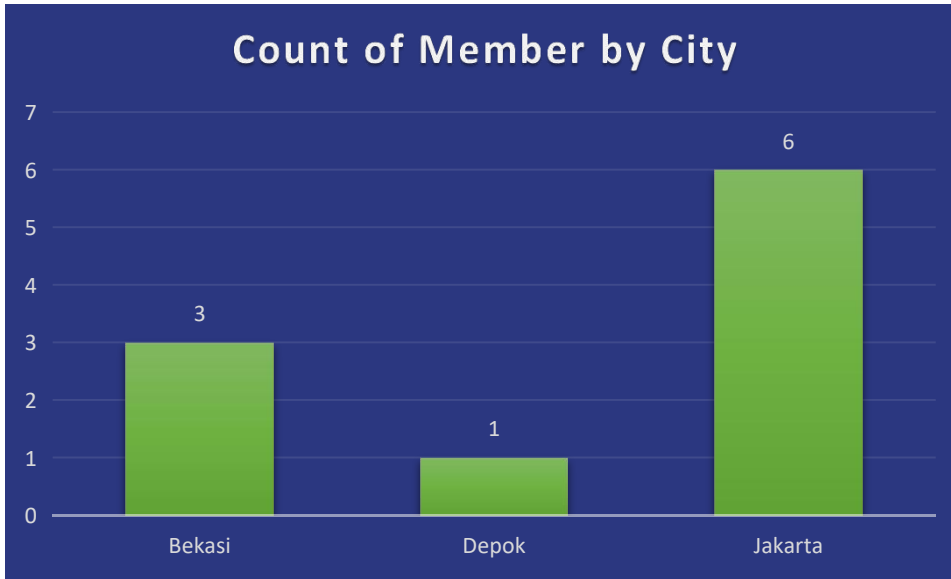
Favorite Menu

Name	Sum of Qty	Sum of subTotal (IDR)
Mie Goreng Ayam	6	192000
Mie Goreng Sapi	1	38000
Mineral Water	3	15000
Nasi Goreng Ayam	3	90000
Nasi Goreng Sapi	1	35000
Orange Juice	6	72000
Strawbery Ice Cream	5	90000
Tea	2	16000



Visualize: Visualizing Categorical Data Through Bar Chart

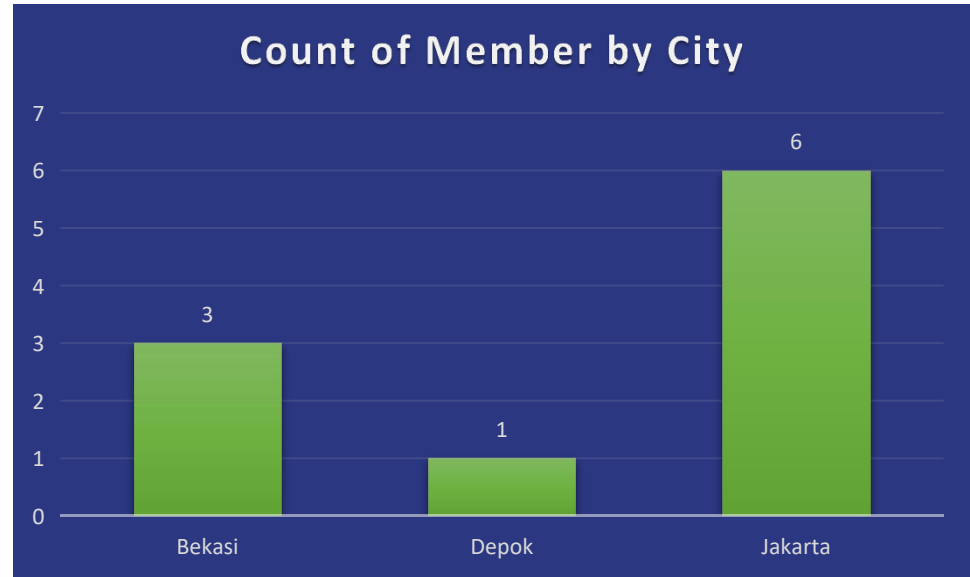
Count of Member by City



From the data on the side, it shows that most customers come from the region Jakarta.

Count of Member by City

City	Count of Member
Bekasi	3
Depok	1
Jakarta	6



Visualize: Visualizing Categorical Data Through Line Chart

Profit & Loss



From the data on the side, it shows that on March 4, 2021 there was a rapid increase. However, it slowly shrinks until the end of the month March 21, 2021.

Profit & Loss

Date	Total Payment (IDR)
01/03/2021	77000
04/03/2021	222000
08/03/2021	168000
17/03/2021	40000
20/03/2021	36000
21/03/2021	5000

Date	Total Payment (IDR)
01/03/2021	77000
04/03/2021	222000
08/03/2021	168000
17/03/2021	40000
20/03/2021	36000
21/03/2021	5000



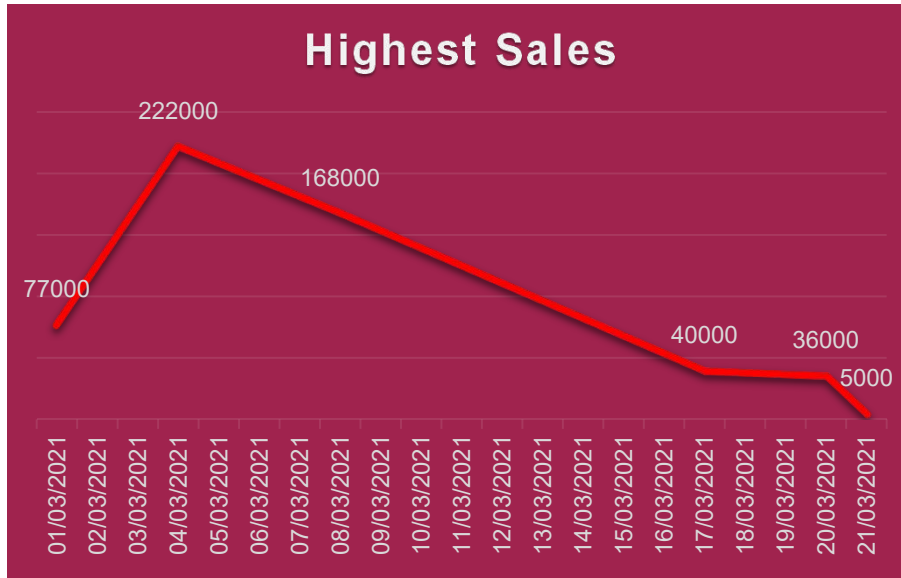
Total Income

Date	Total Payment (IDR)
01/03/2021	77000
04/03/2021	222000
08/03/2021	168000
17/03/2021	40000
20/03/2021	36000
21/03/2021	5000
Total Pay March	IDR 548,000.00

From the data on the side, it shows that March's total income at our restaurant i.e. IDR 548,000.00

Visualize: Visualizing Categorical Data Through Line Chart

Highest Sales



From the data on the side, it shows that The highest sales at our restaurant are on March 4, in the amount of IDR 222,000.00

Analyze : Progress of the restaurant operational and demand

Regular Customer

M0002	Julian	Lennon	04-Mar-21	TR002
			17-Mar-21	TR005

From the data on the side, it can be seen that the customer has made two transactions. This indicates that he will most likely become a regular customer of our restaurant.

M0002	Julian	Lennon	Jakarta	jul@mail.com	15-Dec-75
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Complete Sales Data

DCOVA

Member ID	First Name	Last Name	Date	Transac ID	Name	Qty	Sub Total (IDR)	Total Payment (IDR)
M0001	John	Lennon	01-Mar-21	TR001	Nasi Goreng Sapi	1	Rp35.000,00	Rp77.000,00
					Mie Goreng Ayam	1	Rp32.000,00	
					Mineral Water	2	Rp10.000,00	
M0002	Julian	Lennon	04-Mar-21	TR002	Mie Goreng Ayam	1	Rp32.000,00	Rp40.000,00
					Tea	1	Rp 8.000,00	
			17-Mar-21	TR005	Mie Goreng Ayam	1	Rp32.000,00	Rp40.000,00
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M0010	Ken	Green	21-Mar-21	TR007	Mineral Water	1	Rp 5.000,00	Rp5.000,00

Analyze : To improve the quality of the restaurant

Summary

1. Should we reduce or increase the price of the menu (or specific menu) ?

We should set menu prices that are appropriate among the middle class so that customers can buy menus at our restaurants without hesitation the cost problem.

2. Should we add more menu? What new menu should be added in the menu list ?

We should add the types of menus that are often purchased by customers according to the previous data, namely we can add flavor variants to juice, ice cream, and several levels of spicy taste in food.

3. Should we open new restaurant (new branch) ?

We should open a new branch so that consumers can get to know our products, because in previous data our restaurants were already widely known in the Jakarta, Bekasi, and Depok areas. With that we can increase the restaurant's sales profit.





Thank You!