



#### ER DIAGRAM

	Date	es
PK	transaction_date	date, not null
	date_id	datetime2(7), not null
	week_id	tinyint, not null
	week_desc	nvarchar(50), not null
	month_id	tinyint, not null
	month_name	nvarchar(50), not null
	quarter_id	tinyint, not null
	quarter_name	tinyint, not null
	year_id	smallint, not null

	Pastry in	ventory
FK FK FK	sales_outlet_id transaction_date product_id start_of_day quantity_sold waste	tinyint, not null date, not null tinyint, not null tinyint, not null tinyint, not null tinyint, not null
	waste%	nvarchar(50), not nul

#### Sales outlet PK sales\_outlet\_id tinyint, not null sales\_outlet\_type nvarchar(50), not null store square feet smallint, not null store\_address nvarchar(50), not null nvarchar(50), not null store\_city nvarchar(50), not null store\_state\_province nvarchar(50), not null store\_telephone smallint, not null store\_postal\_code store\_longtitude float, not null store\_latitude float, not null manager tinyint, not null neighorhood nvarchar(50), not null

Sales targets

tinyint, not null

smallint, not null

smallint, not null

smallint, not null smallint, not null

smallint, not null

nvarchar(50), not null

FK sales outlet id

year\_month

beans\_goal

food\_goal

total\_goal

merchandise

beverage\_goal

		Product						
#	PK	product_id	tinyint, not null					
		product_group	nvarchar(50), not null					
		product_category	nvarchar(50), not null					
		priduct_type	nvarchar(50), not null					
		product	nvarchar(50), not null					
		product_description	nvarchar(100), not null					
		unit_of_measure	nvarchar(1), not null					
		current_wholesale_price	nvarchar(1), not null					
		current_retail_price	money, not null					
		tax_exempt_yn	bit, not null					
		promo_yn	bit, not null					
		new_product_yn	bit, not null					

201904 sales reciepts

smallint, not null

time(7), not null

tinyint, not null

tinyint, not null

smallint, not null

tinyint, not null

tinyint, not null

tinyint, not null

tinyint, not null

float, not null

float, not null

nvarchar(50), not null

bit, not null

date, not null

transaction id

transaction\_time
FK sales\_outlet\_id

customer id

instore yn

line\_item\_id

order

FK product\_id

quantity

unit\_price

line\_item\_amount

promo\_item\_yn

FK transaction\_date

FK staff\_id

PK staff\_id first\_name last\_name position start\_date location last\_name location start\_factors | Staff |

Staff tinyint, not null nvarchar(50), not null nvarchar(50), not null nvarchar(50), not null nvarchar(50), not null

	Customer					
PK	customer_id	int, not null				
	home_store	tinyint, not null				
	customer_first_name	nvarchar(50), not null				
	customer_email	nvarchar(50), not null				
	customer_since	date, not null				
	loyalty_card_number	nvarchar(50), not null				
	birthdate	date, not null				
	gender	nvarchar(50), not null				
FK	birth_year	smallint, not null				

	Gen	erations
PK	birth_year	smallint, not null
	generation	nvarchar(50), not null

#### DATA PREPARATION

Remove empty column.

--2. change column name

EXEC sp\_rename 'dbo.[pastry inventory].waste1', 'waste%', 'COLUMN';

Rename column.

```
update [pastry inventory]
set waste = start_of_day, [waste%] = '100%'
where quantity_sold = 0
```

Ⅲ	Results	Mes Mes	Messages Messages							
	sales_	outlet_id	transaction_date	product_id	start_of_day	quantity_sold	waste	waste%		
1	3		2019-04-05	69	18	0	0	0		
2	3	***************************************	2019-04-18	69	18	0	0	0		
3	5		2019-04-12	73	18	18	0	0%	4	
4	8		2019-04-14	69	18	18	0	0%	1	

```
--3. set PK & FK
alter table customer
 add constraint FK generations
 foreign key(birth_year) references generations(birth_year)
 alter table dates
 drop constraint PK dates
alter table dates
 add constraint PK_Dates Primary key(transaction_date)
alter table [sales targets]
 add constraint FK outlet target
 foreign key(sales_outlet_id) references sales_outlet(sales_outlet_id)
alter table [sales targets]
 drop constraint [PK_sales targets]
alter table [pastry inventory]
 add constraint FK_outlet
     foreign key(sales_outlet_id) references sales_outlet(sales_outlet_id),
     constraint FK_trans_date
     foreign key(transaction_date) references dates(transaction date),
     constraint FK_product
     foreign key(product id) references product(product id)
```

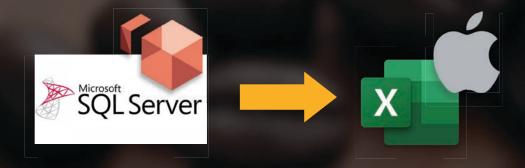
Set Primary Key and Foreign Key.

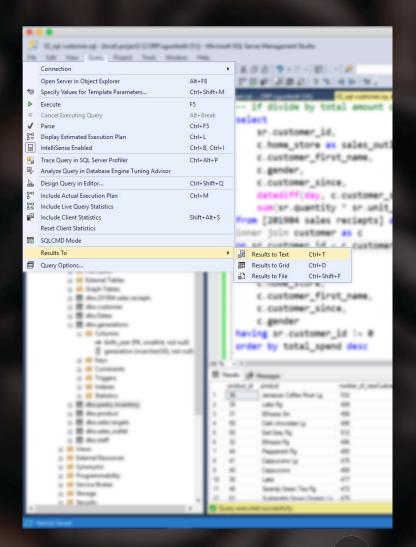
Update the data.

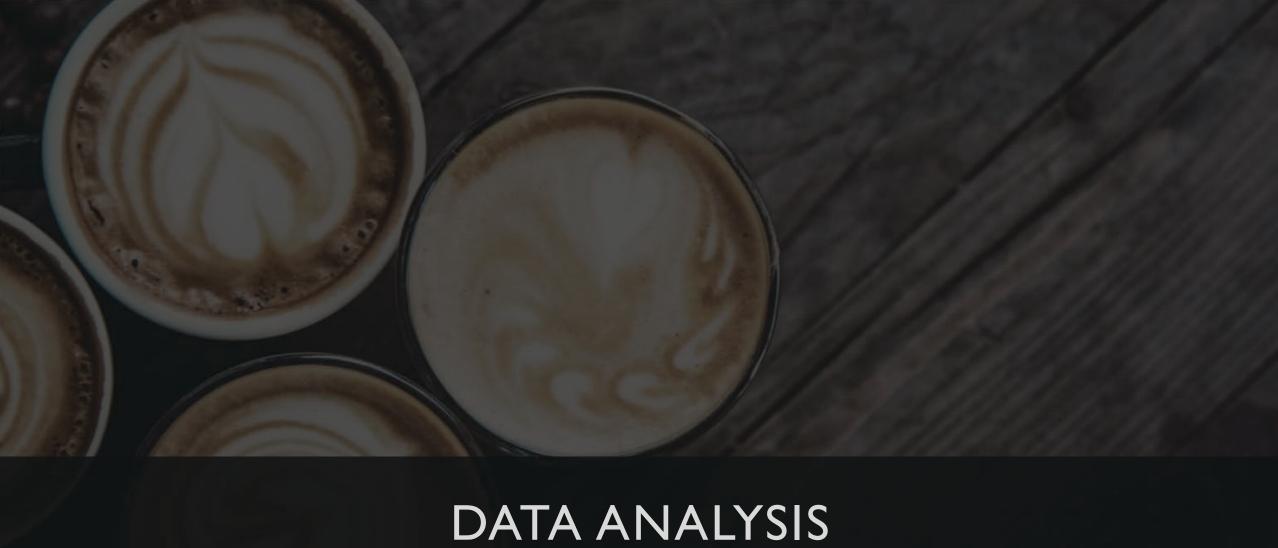
#### DATA PREPARATION

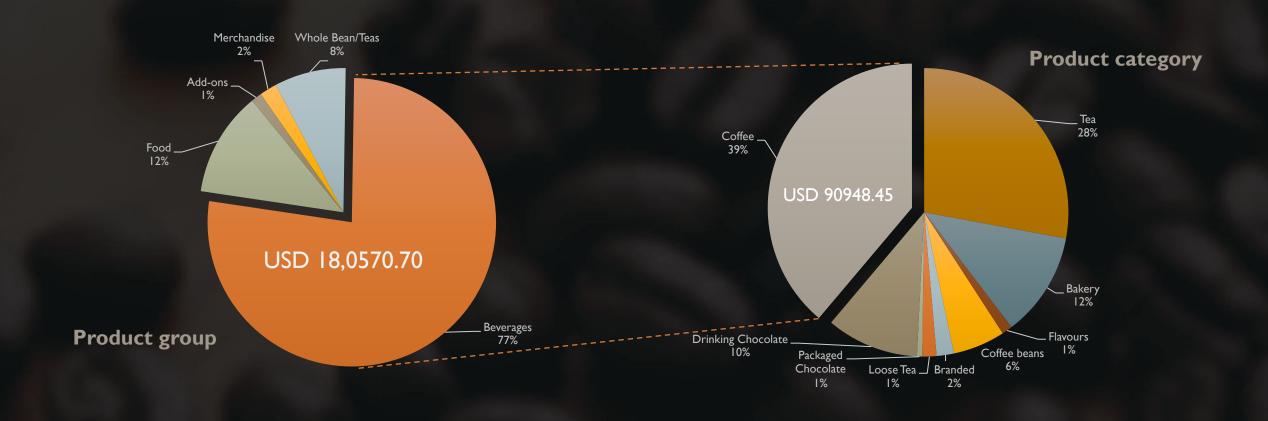
#### There are 2 ways:

- 1. Result to text, save it as txt format, then transfer other computer.
- 2. copy the table with header and paste it directly in excel.



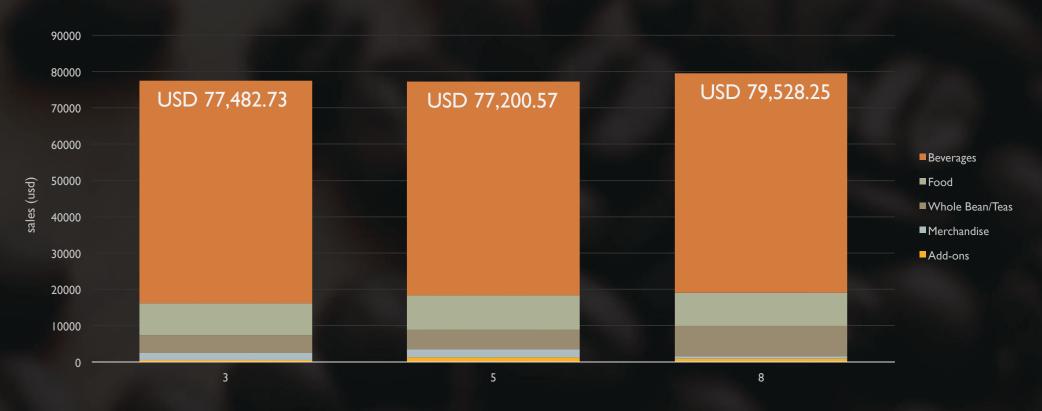




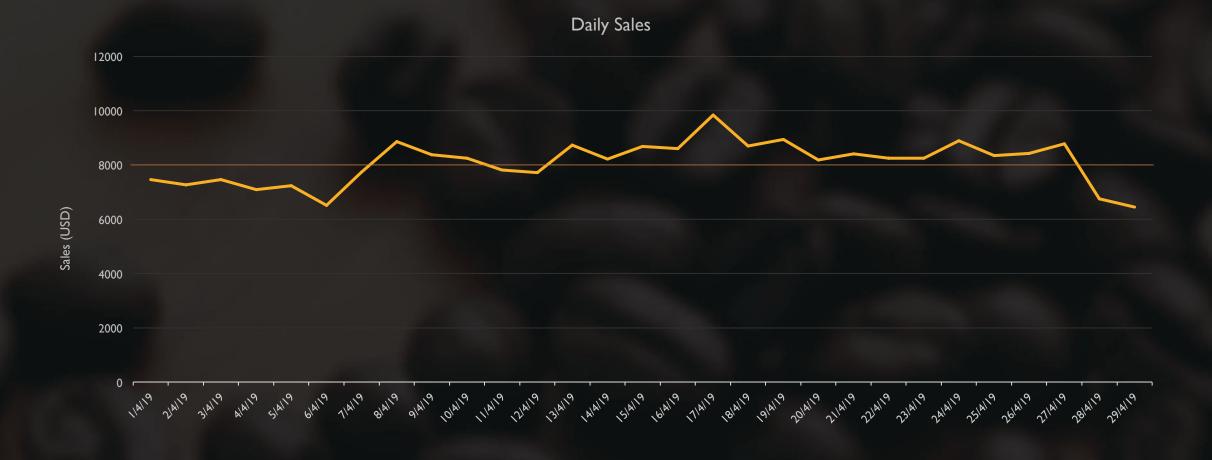


# ANALYSIS OF SALES (BY PRODUCT GROUP AND CATEGORY)

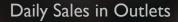
#### Product Sales by Group on Outlets

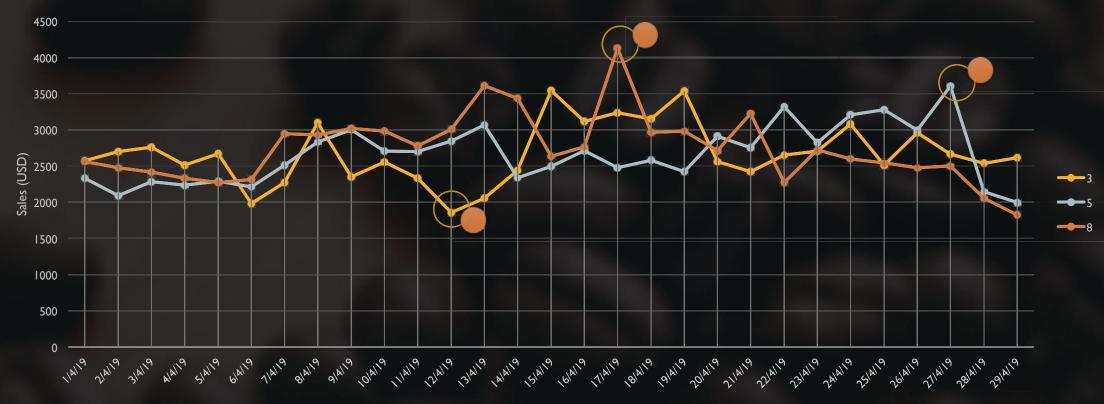


# ANALYSIS OF SALES



### ANALYSIS OF SALES (BY TIMESERIES)





### ANALYSIS OF SALES

(BY OUTLET IN TIMESERIES)

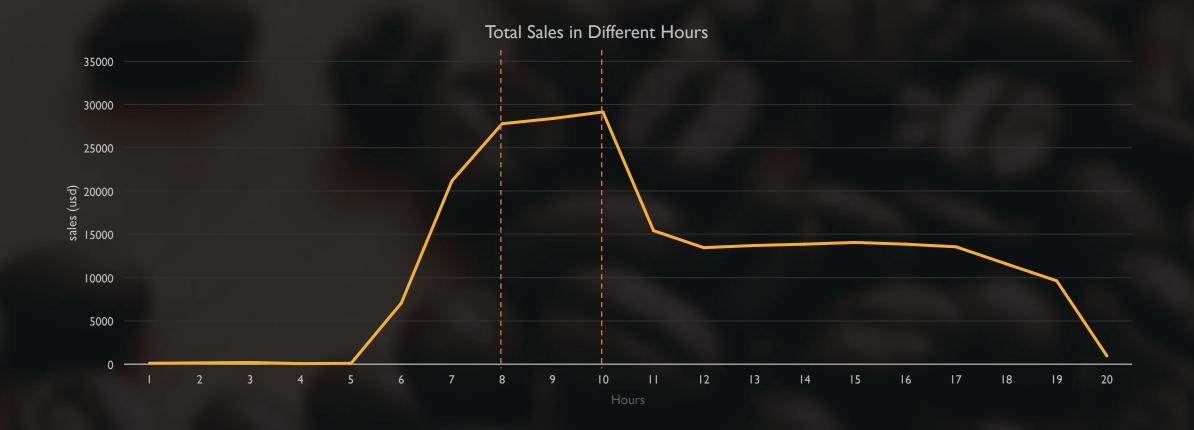


### ANALYSIS OF SALES (BY PRODUCT IN TIMESERIES)

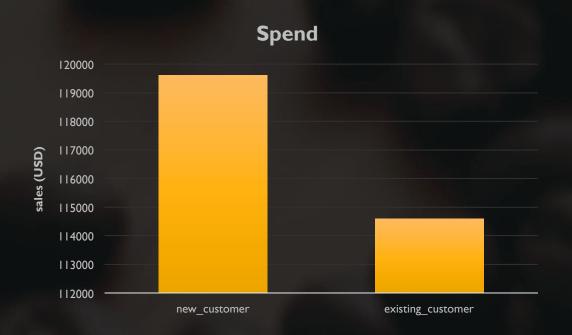
#### Product Sales in Weekday View



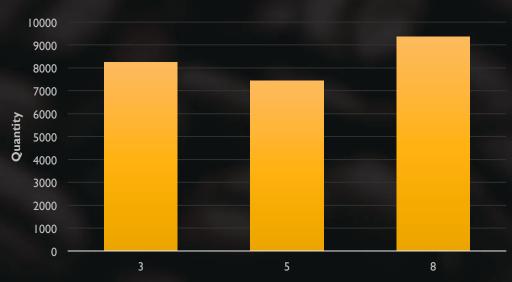
### ANALYSIS OF SALES (BY OUTLETS AND WEEKDAY)



### ANALYSIS OF SALES (BY TIMESERIES)

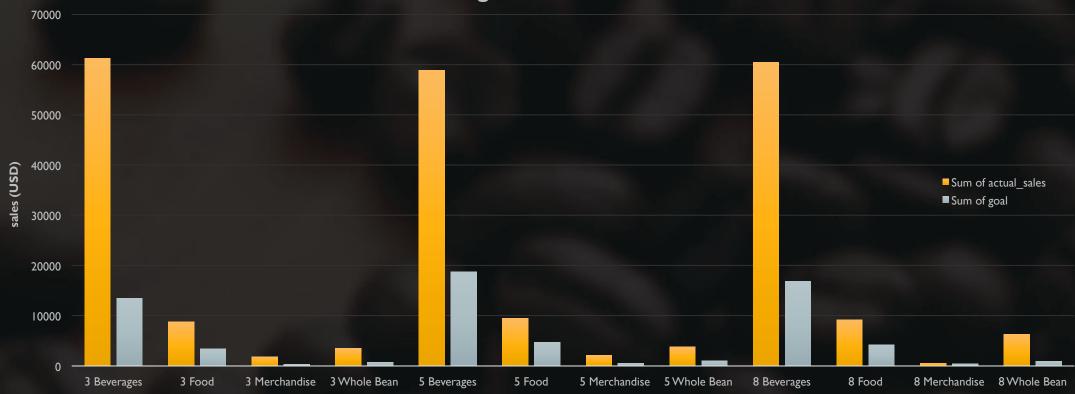


#### Most new customer outlet



### ANALYSIS OF CUSTOMER (BY SALES AND OUTLETS)

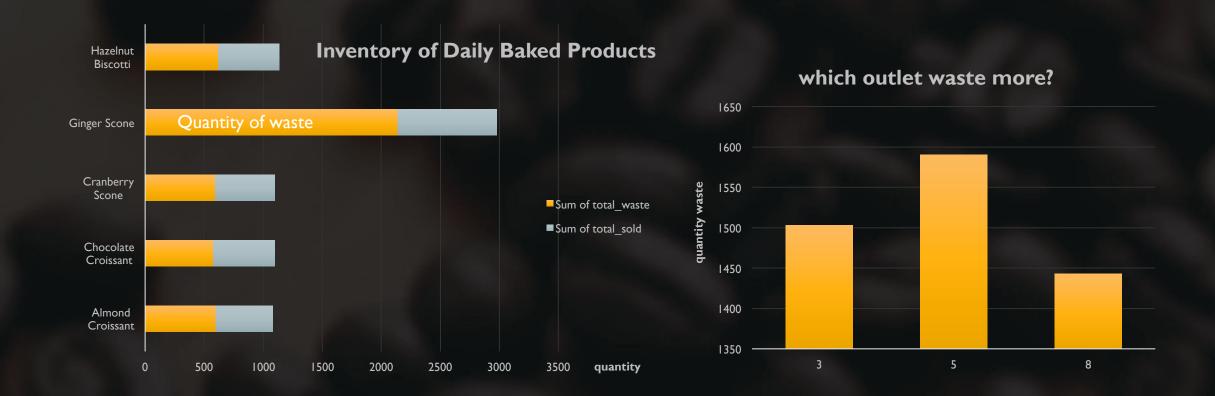




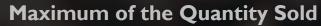
### ANALYSIS OF TARGET

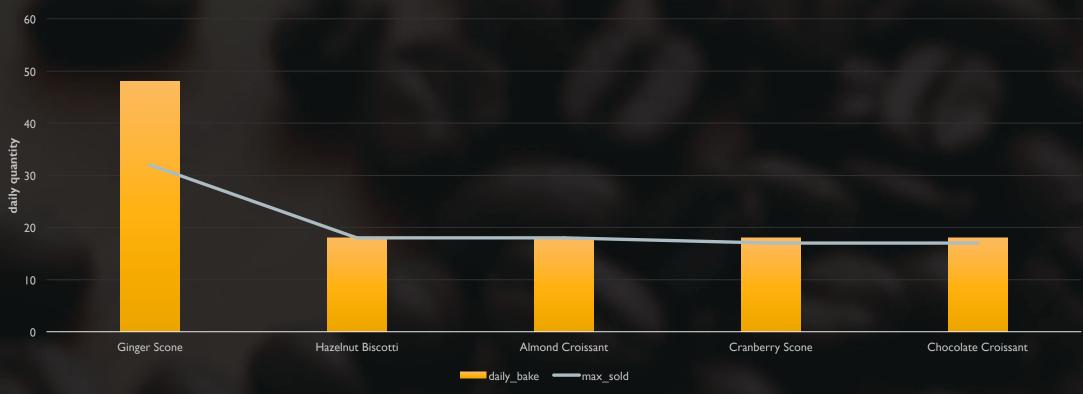


### ANALYSIS OF WASTE (BY PRODUCT AND OUTLET)



### ANALYSIS OF WASTE (BY PRODUCT AND OUTLETS)





### ANALYSIS OF SALES (BY TIMESERIES)

April 2019										
SUN	SUN MON TUE WED THU FRI SAT									
	1	2	3	4	5	6				
7	8	9	10	11	12	13				
14	15	16	17	18	19	20				
21	22	23	24	25	26	27				
28	29	30								
V.										

with promo



Chocolate Croissant



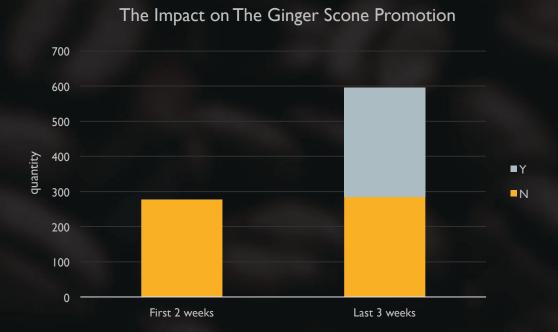
Ginger Scone



Ouro Brasileiso Shot

ANALYSIS OF PROMO
(BY PRODUCT)





### ANALYSIS OF PROMO (BY PRODUCT)

### CONCLUSION

- 1. Their business is doing well.
- 2. Aware of the waste and started their solution.
- 3. Continue with the promotion.
- 4. Consider to introduce the new products around 8 10am on Monday.
- 5. Doing some promotion after 5pm to increase the sales.
- 6. Encourage new customer to sign up as member so that we can better analyze their buying habit.



