

# Customer Segmentation

By Muhammad Khuzain  
Machine Learning Task



***"It always seems impossible until  
it's done."***

**- Nelson Mandela**

# 2021 Content

**01 Project Summary**  
Give a brief explanation how this proposal come from and goes to

**02 Question 1**  
Answering question

**03 Question 2**  
Answering question

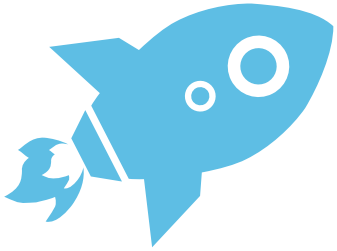
**04 Question 3**  
Answering question

**05 Question 4**  
Answering question

**06 Link Git-hub**  
Provide the list program



# Project Summary



## Background Project

Segmentation allows businesses to make better use of their marketing budgets, gain a competitive edge over rival companies and, demonstrate a better knowledge of your customers' needs and wants. Benefit customer segmentation is marketing efficiency, determine new market opportunities, better brand strategy, improve distribution strategies and customer retention

## Objective

This presentation will use data from given dataset to make customer segmentation. Not only that, will answer several question based on the data set.

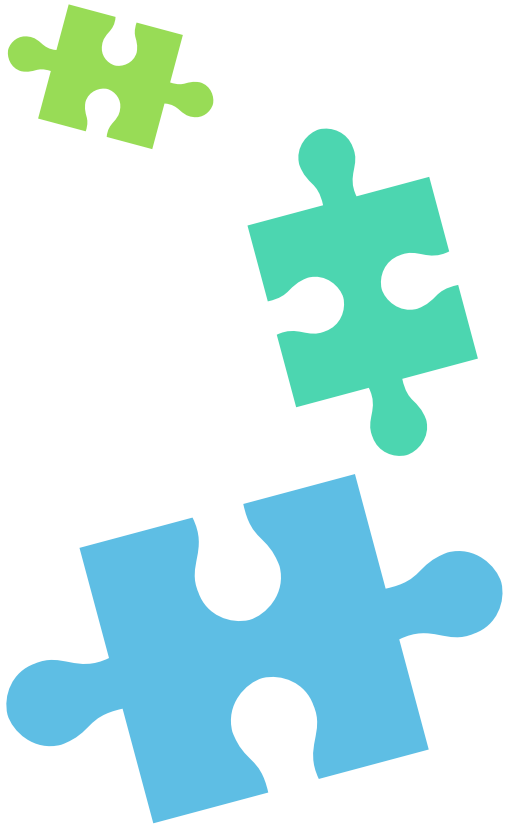
# Data Set

Data Set : (ML\_2\_Fellow.zip)

<https://github.com/Syukrondzeko/Fellowship>

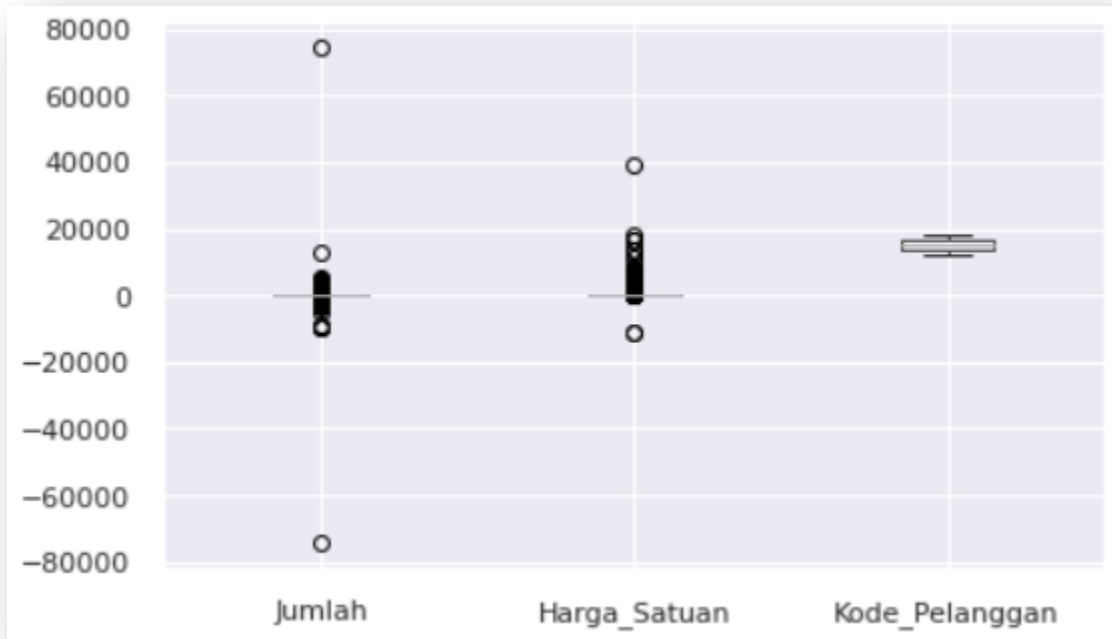
Nama kolom	Tipe data
Kode_Bayar	object
Kode_Barang	object
Barang	object
Jumlah	float64
Tanggal_Transaksi	object
Harga_Satuan	float64
Kode_Pelanggan	float64
Negara	object

Data Size: rows: 541909 X columns:8



# Data Evaluation

Data Plot



There is null value and negative value in Jumlah and Harga\_satuan

# Data Evaluation

## Canceling Order

	Kode_Bayar	Kode_Barang	Barang	Jumlah
217767	C555935	23049	RECYCLED ACAPULCO MAT RED	-2.0
70659	C542092	22663	JUMBO BAG DOLLY GIRL DESIGN	-1.0
70657	C542092	20723	STRAWBERRY CHARLOTTE BAG	-2.0
70656	C542092	21931	JUMBO STORAGE BAG SUKI	-1.0
70655	C542092	20725	LUNCH BAG RED RETROSPOT	-1.0

Cancelation order marked by “C” in  
Kode\_Bayar and negative value in Jumlah



# Data Evaluation

## Countries with highest customer

Country	Total Order
United Kingdom	19830
Germany	603
France	458
EIRE	319
Belgium	119
Spain	105
Netherlands	101
Switzerland	71
Portugal	70
Australia	69





# Data Evaluation

## Countries with lowest customer

Country	Total Order
Canada	6
Czech Republic	5
European Community	5
Lithuania	4
United Arab Emirates	3
Saudi Arabia	2
Bahrain	2
RSA	1
Brazil	1
Lebanon	1



# Data Evaluation

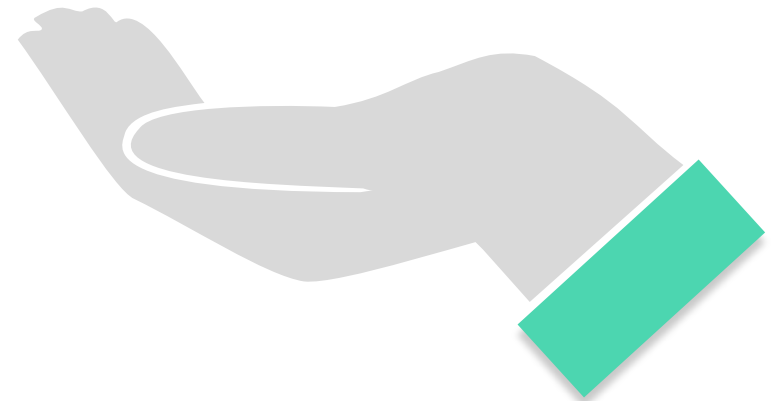
Type Data	nValue
Total order	3603
N kode bayar	22161
Row cancel order	8682



# Data Evaluation

	Kode_Bayar	Kode_Barang	Barang	Jumlah	Tanggal_Transaksi	Harga_Satuan	Kode_Pelanggan	Negara	Batal	nBatal
61619	541431	23166	MEDIUM CERAMIC TOP STORAGE JAR	74215.0	2011-01-18 10:01:00	1.04	12346.0	United Kingdom	0	74215
52711	540815	21108	FAIRY CAKE FLANNEL ASSORTED COLOUR	3114.0	2011-01-11 12:55:00	2.10	15749.0	United Kingdom	0	3114
52710	540815	21175	GIN + TONIC DIET METAL SIGN	2000.0	2011-01-11 12:55:00	1.85	15749.0	United Kingdom	0	2000
52709	540815	85123A	WHITE HANGING HEART T-LIGHT HOLDER	1930.0	2011-01-11 12:55:00	2.55	15749.0	United Kingdom	0	1930
223446	556484	22920	HERB MARKER BASIL	1515.0	2011-06-12 13:17:00	0.55	16938.0	United Kingdom	0	1515

Goods with highest cancelation order is  
MEDIUM CERAMIC TOP STORAGE JAR



# 1<sup>st</sup>

***What items customers buy the most and are there any items we should ignore?***

	Jumlah	Harga_Satuan
Barang		
WORLD WAR 2 GLIDERS ASSTD DESIGNS	52879.0	136.74
JUMBO BAG RED RETROSPOT	43423.0	3187.39
ASSORTED COLOUR BIRD ORNAMENT	35032.0	2331.31
WHITE HANGING HEART T-LIGHT HOLDER	33287.0	5727.07
PACK OF 72 RETROSPOT CAKE CASES	33286.0	570.22
POPCORN HOLDER	27949.0	529.04
RABBIT NIGHT LIGHT	26619.0	1629.13
MINI PAINT SET VINTAGE	25752.0	208.17
PACK OF 12 LONDON TISSUES	25293.0	127.04
PACK OF 60 PINK PAISLEY CAKE CASES	24086.0	370.01

Goods with **highest** order (Jumlah)

# 1<sup>st</sup>

***What items customers buy the most and are there any items we should ignore?***

Barang	Jumlah	Harga_Satuan
I LOVE LONDON MINI RUCKSACK	1.0	4.15
AMBER BERTIE GLASS BEAD BAG CHARM	1.0	2.10
AMBER GLASS/SHELL/PEARL NECKLACE	1.0	8.95
BAROQUE BUTTERFLY EARRINGS CRYSTAL	1.0	3.75
BLACK DROP EARRINGS W LONG BEADS	1.0	2.95
BLACK FINE BEAD NECKLACE W TASSEL	1.0	5.95
BLACK VINT ART DEC CRYSTAL BRACELET	1.0	6.75
BLACKCHRISTMAS TREE 30CM	1.0	1.25
BLOSSOM IMAGES SCRAP BOOK SET	1.0	4.95
BLUE LEAVES AND BEADS PHONE CHARM	1.0	1.25

Goods with **lowest** order (Jumlah)



## ***What is our strategy to increase sales based on our export destination countries?***

Strategy to increase sales based on our export destination countries:

1. Focus on countries with highest total quantity goods
2. Reduce on countries with least total quantity goods
3. Focus reducing cancelation transaction in every country.
4. Try to give discount in highest total quantity countries
5. Give convenience in exporting goods.

2<sup>nd</sup>

# 3<sup>rd</sup>

***Do customer segmentation appropriately. Please explain in detail and completely***

Step-step in ***customer segmentation***:

1. Import the data
2. Clean the data with null and anomaly value
3. Make A a model
4. Use Elbow Method
5. Using K Mean to clustering the data

## ***Get the hidden insight from the data***

Hidden insight from the data:

1. Countries with highest customer order is from EUROPE
2. Getting further from EUROPE, the order will be lesser
3. Many customers cancel their orders with high quantity order.

4<sup>th</sup>

**<https://github.com/kzen31/machinelearning>**

**- Muhammad Khuzain**

***THANK YOU***

By Muhammad Khuzain

