

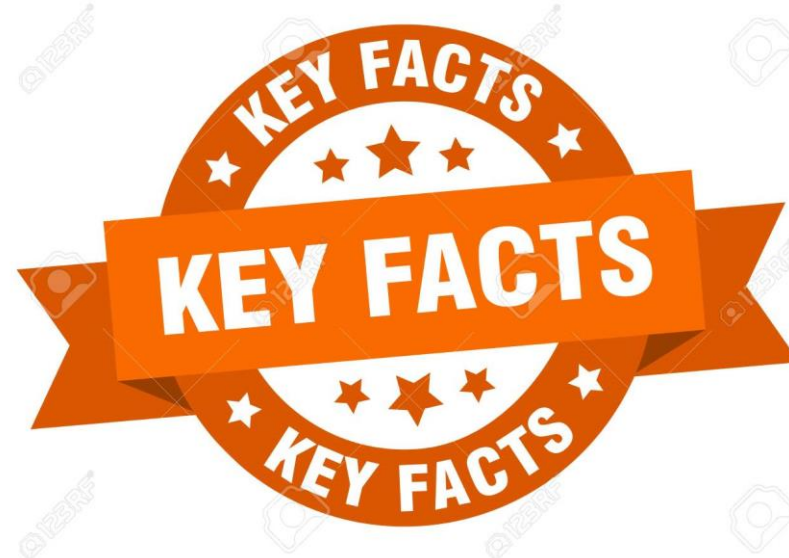


# DATA TASK

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WAQAS ZAHICK





## KEY FACTS OF DATA INPUT/OUTPUT



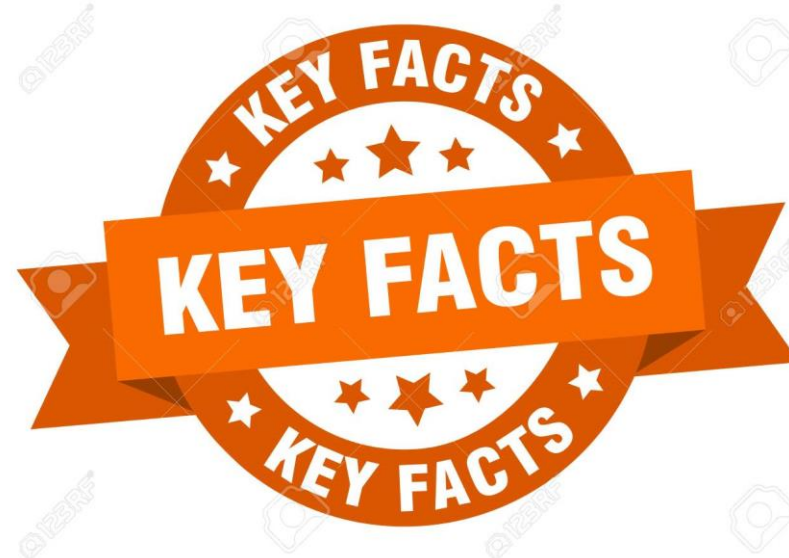
---

### PRE-PROCESSING



- THE RAW DATA WAS IN JSON FORMAT FILE:  
'SUPPLIER\_CAR.JSON'





## KEY FACTS OF DATA INPUT/OUTPUT

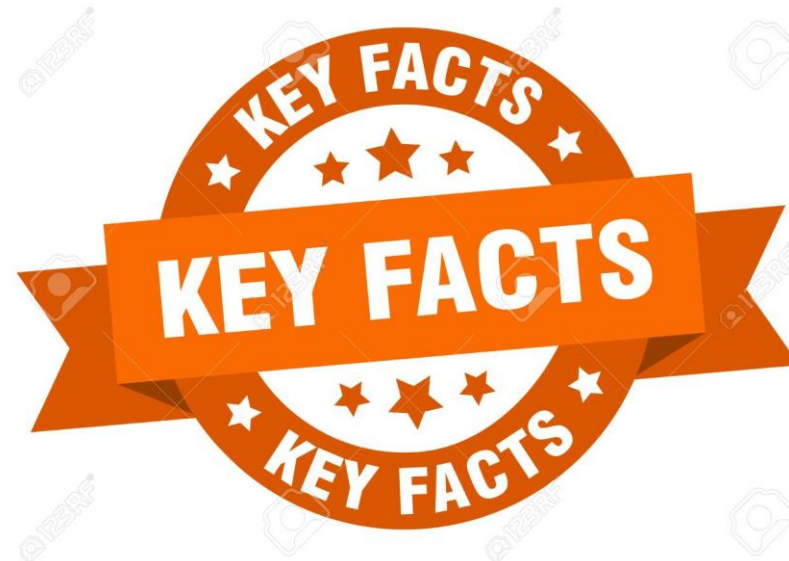


PRE-PROCESSING.....



- THE JSON FILE (SUPPLIER\_CAR.JSON) WENT THROUGH PRE-PROCESSING OR TRANSFORMATION PROCESS





## KEY FACTS OF DATA INPUT/OUTPUT



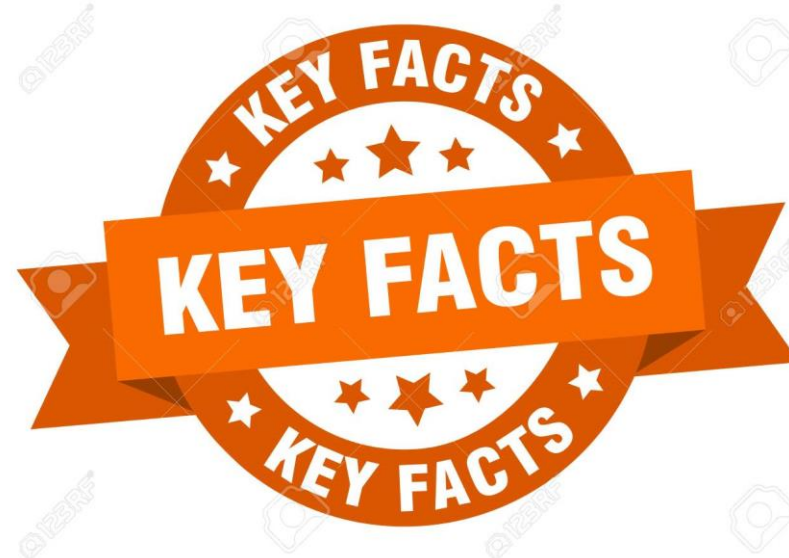
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### PRE-PROCESSING.....



- CONVERTED JSON (SUPPLIER\_CAR.JSON) DATA TO INITIAL 21,906 ROWS AND 9 COLUMNS





## KEY FACTS OF DATA INPUT/OUTPUT

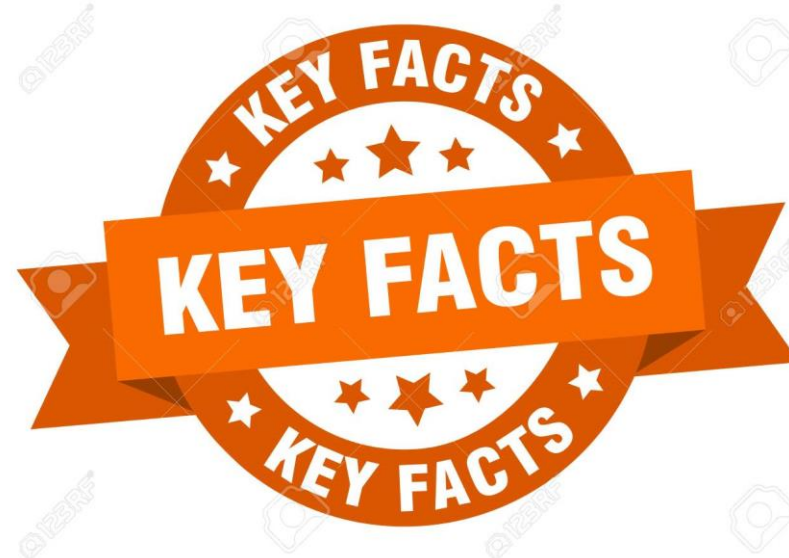


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PRE-PROCESSING.....

- THERE WERE MULTIPLE INPUTS (19) OF A SINGLE DATA ID





## KEY FACTS OF DATA INPUT/OUTPUT

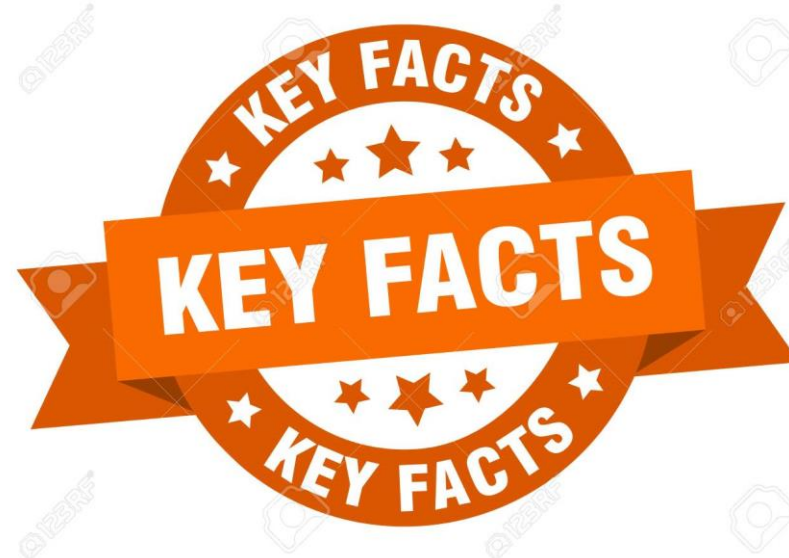


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### PRE-PROCESSING.....

- AFTER ANALYZING THE DATA, WE FIGURED OUT THAT THE REPETITIONS WERE THE UNIQUE ATTRIBUTES OF EACH OF THE 19 DATA ID'S





## KEY FACTS OF DATA INPUT/OUTPUT



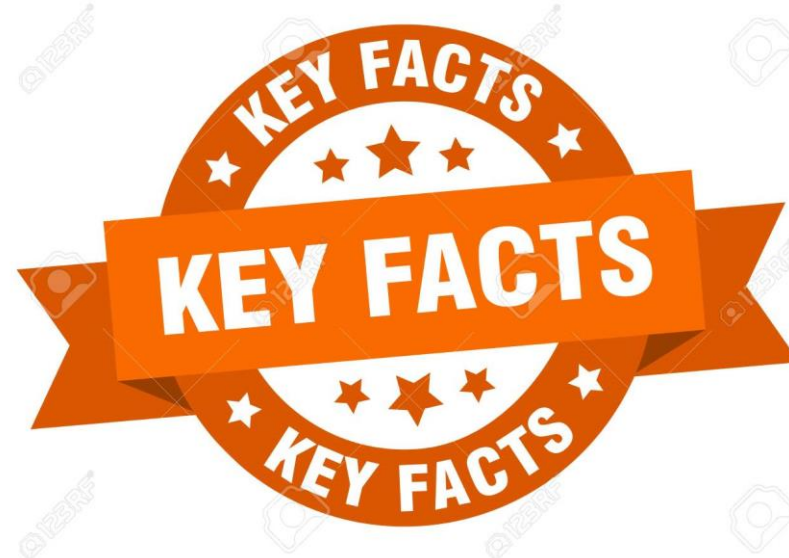
Excel

---

### PRE-PROCESSING.....

- GENERATED AN EXCEL (OUTPUT) FILE (TARGET DATA.XLSX) WITH 3 TABS I.E PRE-PROCESSING, NORMALISATION AND INTEGRATION, VIA PYTHON PROGRAMMING





## KEY FACTS OF DATA INPUT/OUTPUT



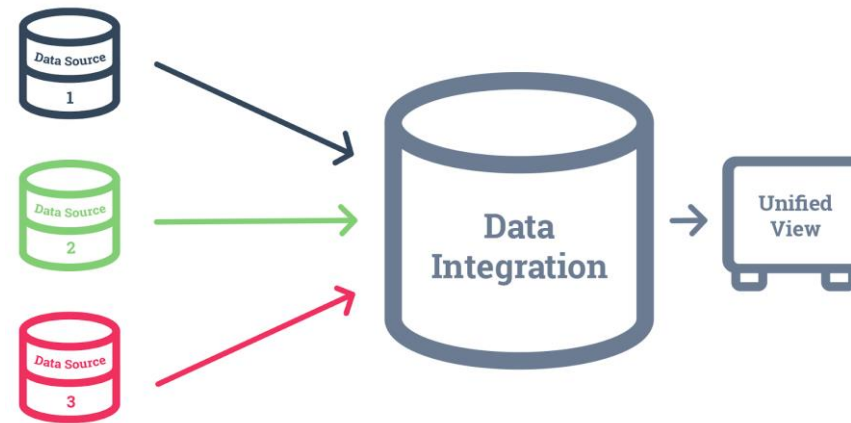
Excel

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### PRE-PROCESSING.....

- THE OUTPUT FILE (TARGET DATA.XLSX) IS GENERATED SIMPLY BY RUNNING THE PYTHON OR JUPYTER NOTE FILE (DATA\_TASK.JPYNB)





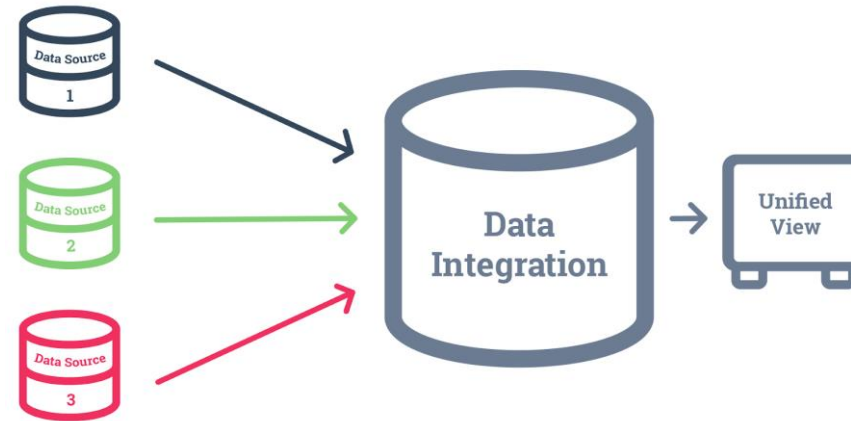
## SUMMARY OF THE CHANGES MADE TO THE INPUT DATA

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### DATA INTEGRATION

- COLLABORATED ALL THE UNIQUE ATTRIBUTES OF EACH ID IN THE FORM OF A DIRECTORY





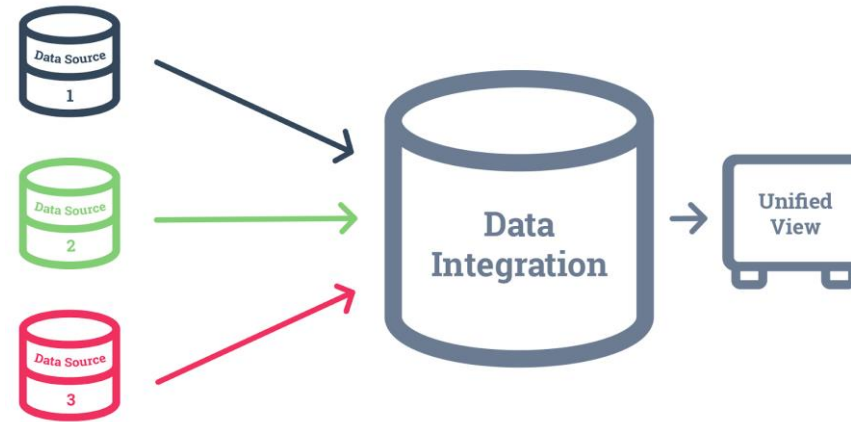
## SUMMARY OF THE CHANGES MADE TO THE INPUT DATA

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### DATA INTEGRATION.....

- DROPPED THE DUPLICATE DATA WITH RESPECT TO THE ID





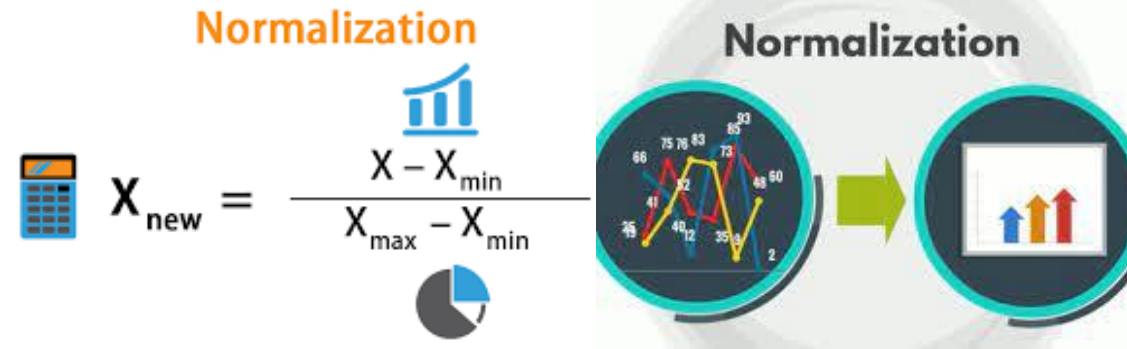
## SUMMARY OF THE CHANGES MADE TO THE INPUT DATA

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### DATA INTEGRATION.....

- DROPPED COLUMNS OF ATTRIBUTE NAMES AND ATTRIBUTE VALUES IN ORDER TO INTEGRATE ALL ATTRIBUTES AS DEDICATED COLUMNS





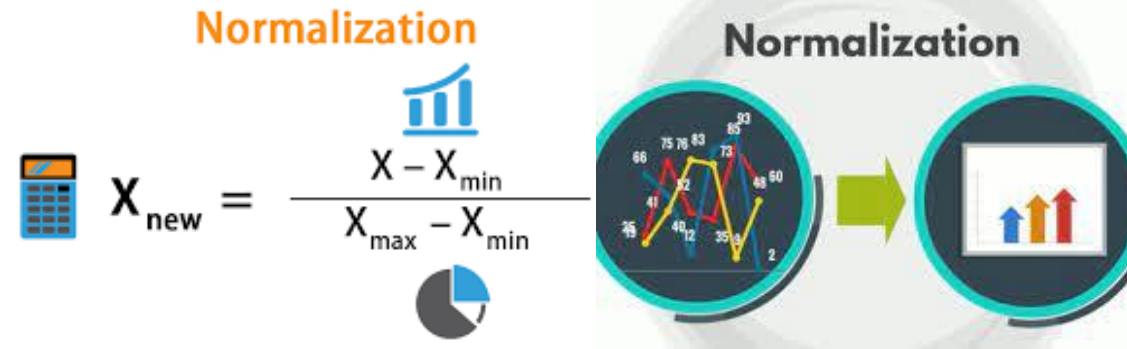
## SUMMARY OF THE POTENTIAL CHANGES MADE TO THE INPUT DATA

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### DATA NORMALISATION

- NORMALIZED INPUT DATA BY ASSIGNING THE 'FUEL' (BENZINE / DIESEL) AND THE 'TRANSMISSION' (MANUAL / AUTOMATIC) BOOLEAN VALUES OF '0' AND '1'





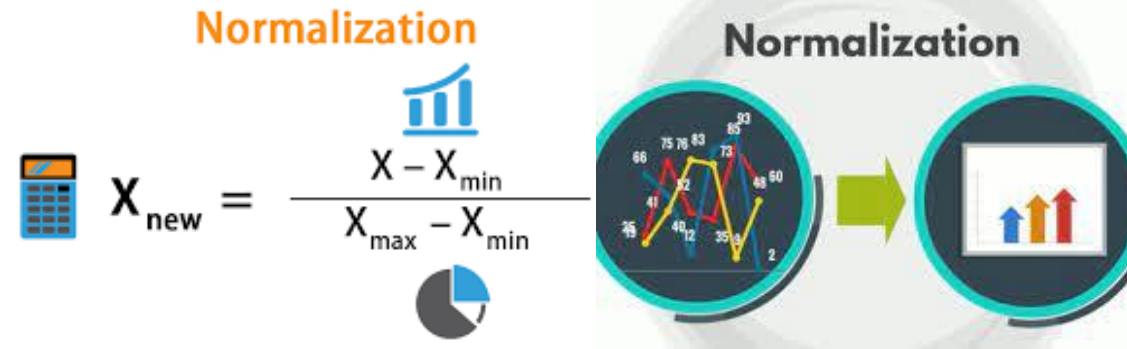
# SUMMARY OF THE POTENTIAL CHANGES MADE TO THE INPUT DATA

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## DATA NORMALISATION.....

- INPUT DATA CAN BE FURTHER NORMALIZED BY BEING CATEGORIZED OR, BY APPLYING MORE FILTERS TO THE INPUT DATA SUCH AS.....





## SUMMARY OF THE POTENTIAL CHANGES MADE TO THE INPUT DATA




DATA NORMALISATION (APPLYING FILTERS).....

- FILTER FOR VEHICLE MANUFACTURE DATE BEFORE & AFTER A CERTAIN DATE / YEAR, FOR EXAMPLE, BEFORE & AFTER YEAR 2005; AND.....





Normalization


$$X_{\text{new}} = \frac{X - X_{\min}}{X_{\max} - X_{\min}}$$




## SUMMARY OF THE POTENTIAL CHANGES MADE TO THE INPUT DATA

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DATA NORMALISATION (APPLYING FILTERS).....

- FILTERS FOR VEHICLE MILEAGE, VEHICLE (HORSE) POWER, VEHICLE CARBON-EMISSION RATE, VEHICLE (BODY) TYPE ETC.





## CUSTOMER TAKE-AWAY MESSAGE

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### TAKE-AWAY MESSAGE

- CLEAR, FILTERED, ORGANIZED & SIMPLER DATA THAT CAN HELP THE CUSTOMER MAKE BETTER, COST-EFFECTIVE AND TIME-EFFICIENT DECISION(S).





# THANK YOU



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