



Project Proposal

DATA ANALYSIS

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ANALYSIS OBJECTIVE



Edison is a 35years old Singapore man who is looking to buy a resale HDB flat with his wife and 2 children with a budget of SGD\$300,000.

He does not know what he is looking for and needs help in understanding the resale market in the recent years.



AGENDA

a) Understanding the Market for the past 6 years

1. The difference of resale price pre-covid and during covid.
2. The average price year on year
3. The average price of region in Singapore by year.
4. The average price by location
5. The most transacted resale flat type
6. The highest & lowest transacted flats by year
7. 2022 cheapest 4room flat

b) Conclusion

1. To derive a conclusion for Edison

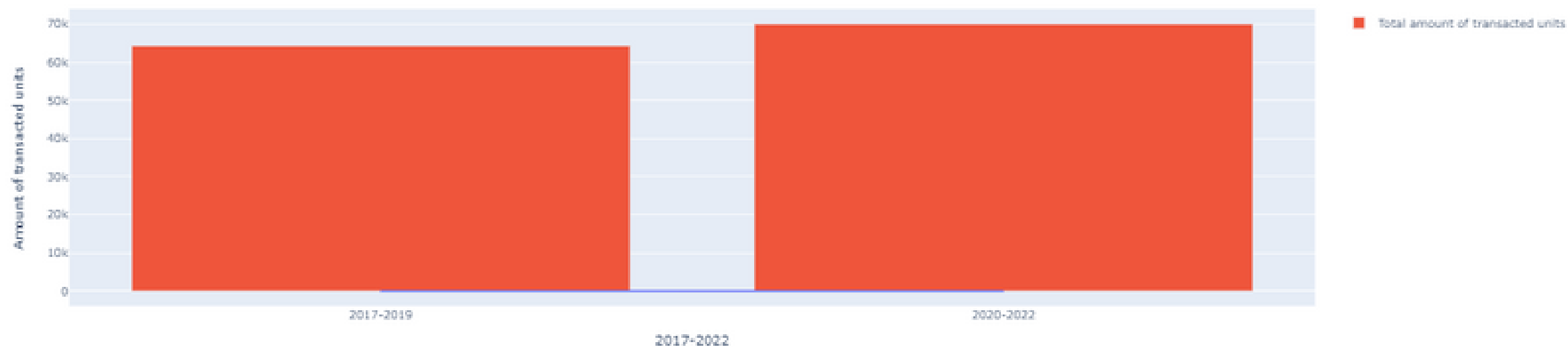


The difference of resale price pre-covid and during covid.

For unit sales, there was 64,256 transactions from 2017-2019 and 70,040 transaction from 2020-2022.

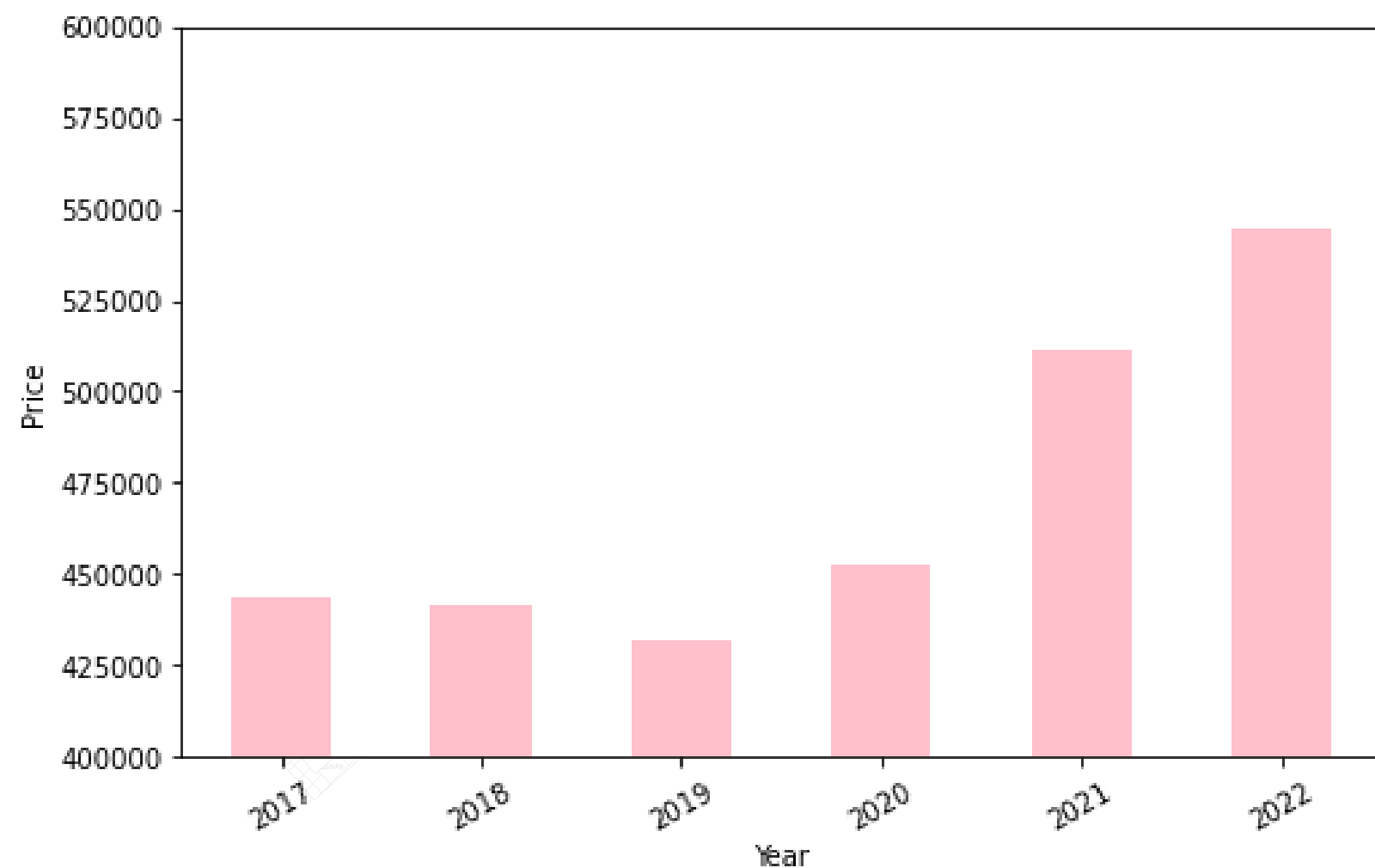
This was a 8.3% increase in transaction during covid period.

For value transacted sales, covid period saw a 24% increase as compared to precovid period.



year_bought	
2017	443889.0
2018	441282.0
2019	432138.0
2020	452279.0
2021	511381.0
2022	544355.0

Average resale price year on year



The average resale price year on year.

From 2017 to 2019, the decline in transactions in resale HDB flats were due to oversupply of units & government policies.

The growth from 2020-2022 was largely affected by the increase demand of resale flat by young couples who are unwilling to wait for Build-to-Order Flats.

Deriving the regions

Based on research, the location are based on the regions stated in the website.

There are total of 26 locations in the dataset.

```
print (df_resale['town'].unique())  
  
print (df_resale['town'].nunique())
```

✓ 0.4s

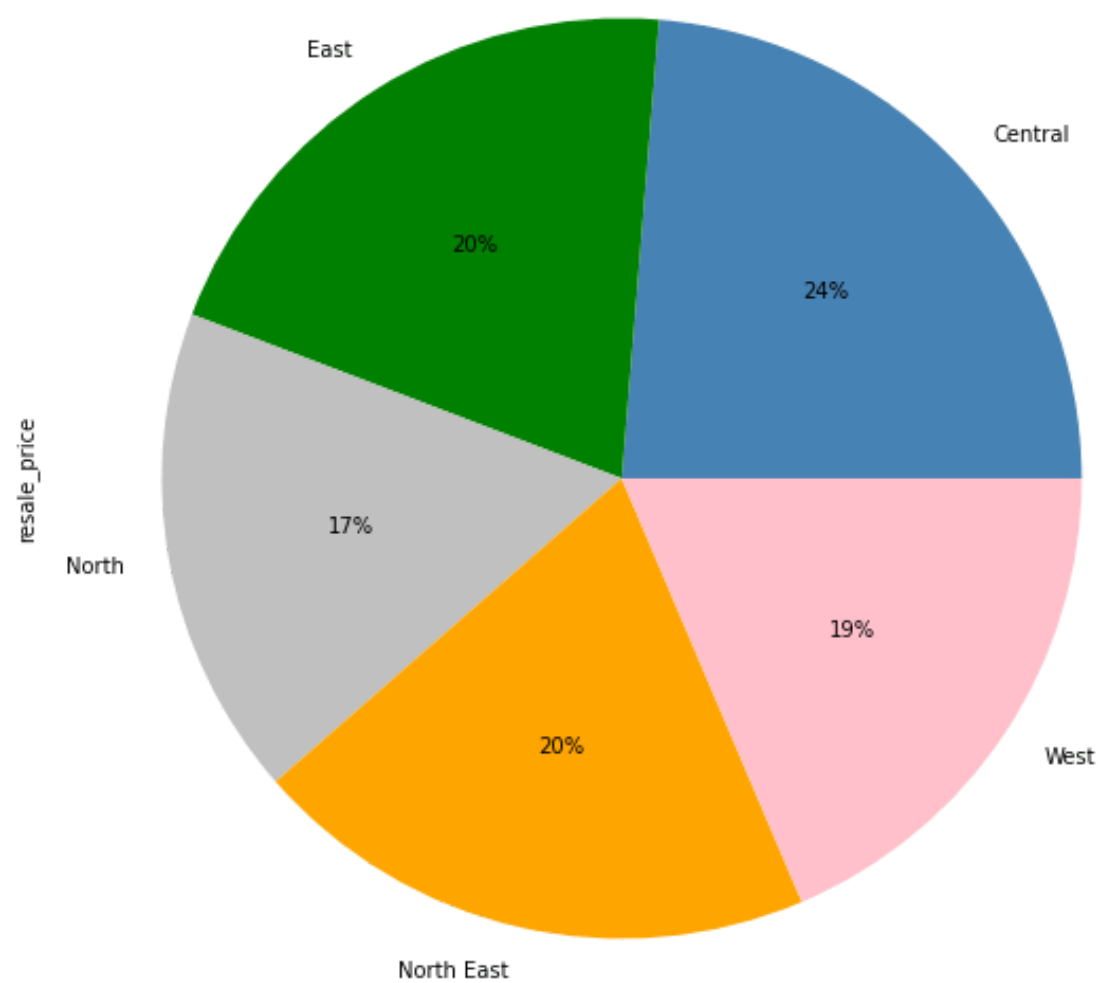
```
['ANG MO KIO' 'BEDOK' 'BISHAN' 'BUKIT BATOK' 'BUKIT MERAH' 'BUKIT PANJANG'  
 'BUKIT TIMAH' 'CENTRAL AREA' 'CHOA CHU KANG' 'CLEMENTI' 'GEYLANG'  
 'HOUGANG' 'JURONG EAST' 'JURONG WEST' 'KALLANG/WHAMPOA' 'MARINE PARADE'  
 'PASIR RIS' 'PUNGGOL' 'QUEENSTOWN' 'SEBRAWANG' 'SENGKANG' 'SERANGOON'  
 'TAMPINES' 'TOA PAYOH' 'WOODLANDS' 'YISHUN']
```

26

```
#creating a list of conditions  
#north region (3)  
north = ['SEBRAWANG', 'WOODLANDS', 'YISHUN']  
  
#north east region (5)  
northeast = ['ANG MO KIO', 'PUNGGOL', 'SENGKANG', 'SERANGOON', 'HOUGANG']  
  
#east region (3)  
east = ['BEDOK', 'PASIR RIS', 'TAMPINES']  
  
#west region (6)  
west = ['BUKIT BATOK', 'BUKIT PANJANG', 'CHOA CHU KANG', 'CLEMENTI', 'JURONG EAST', 'JURONG WEST']  
  
#central region (9)  
central = ['BISHAN', 'BUKIT MERAH', 'BUKIT TIMAH', 'CENTRAL AREA', 'GEYLANG', 'KALLANG/WHAMPOA', 'MARINE PARADE', 'TOA PAYOH', 'QUEENSTOWN']
```



The percentage of mean resale price by region from 2017 to 2022



region	
Central	557746.245959
East	482068.983324
North	405715.490159
North East	469530.967851
West	437437.540622

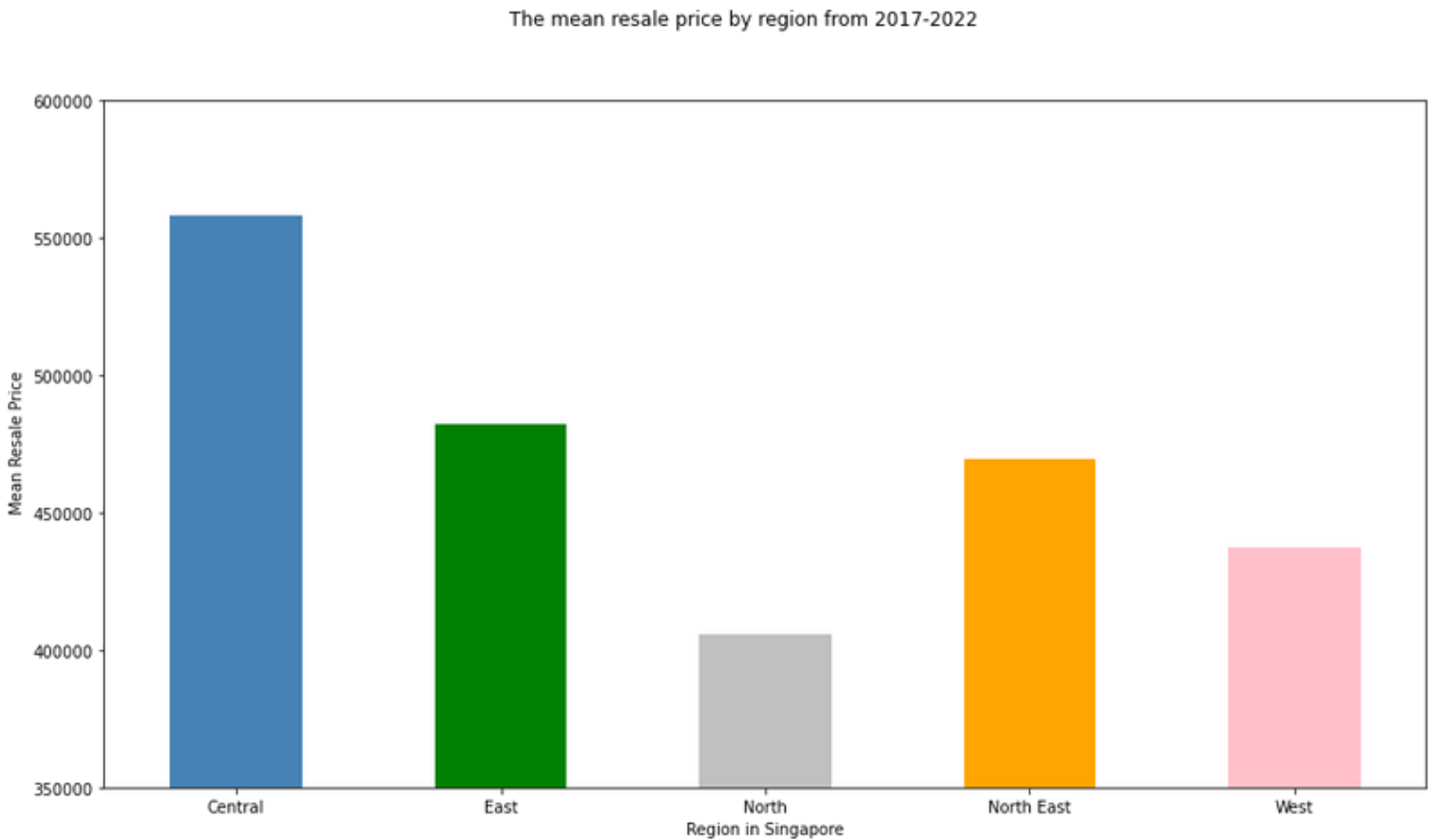
The average resale price by region for the past 6 years

For the past 6 years, Central region has the highest average resale price of \$558k

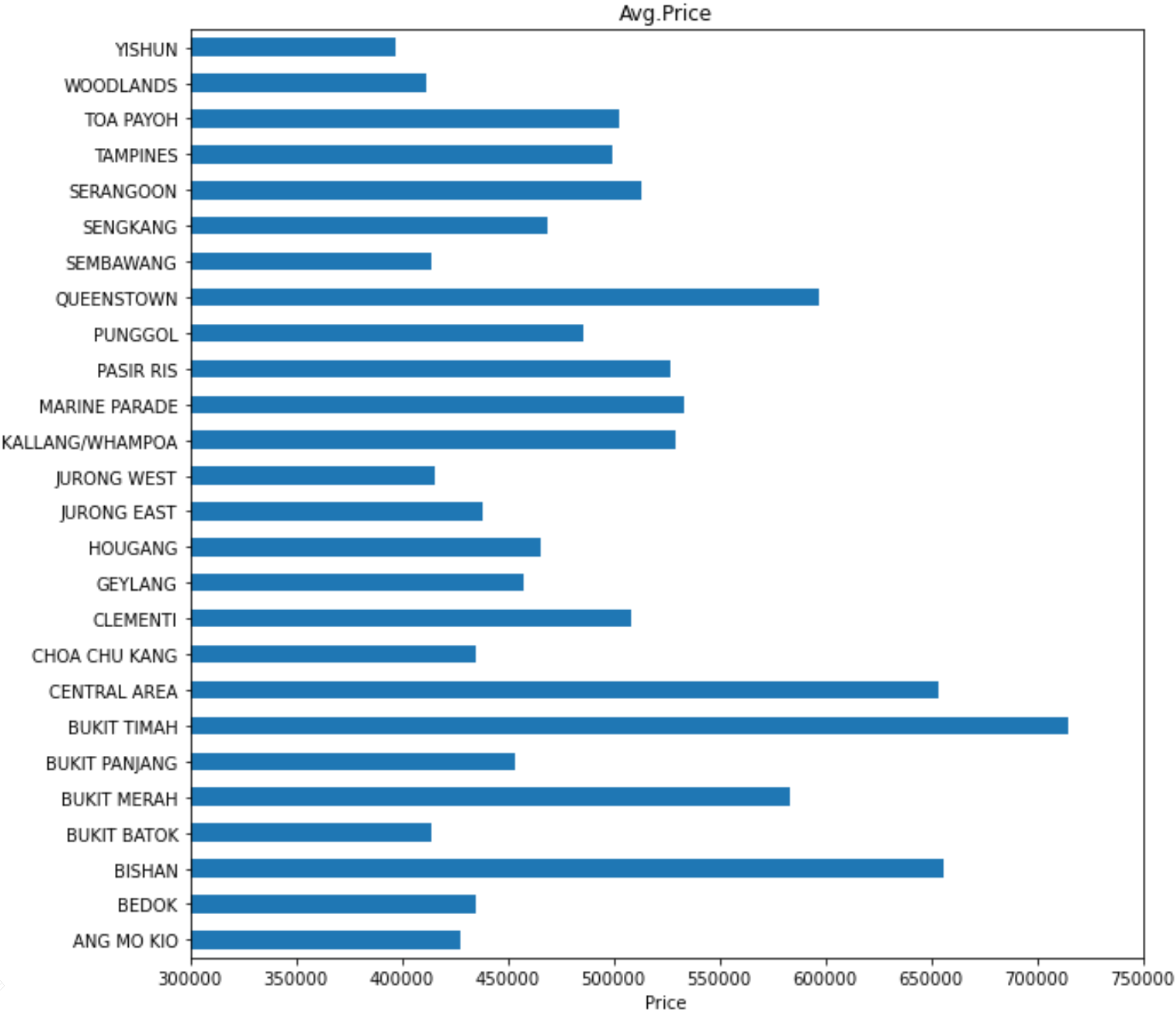
East & North-East region has an average of \$482k and \$470k respectively.

West region has an average of \$437k

North region is lowest with \$405k



Average Resale Price by Location from 2017 - 2022



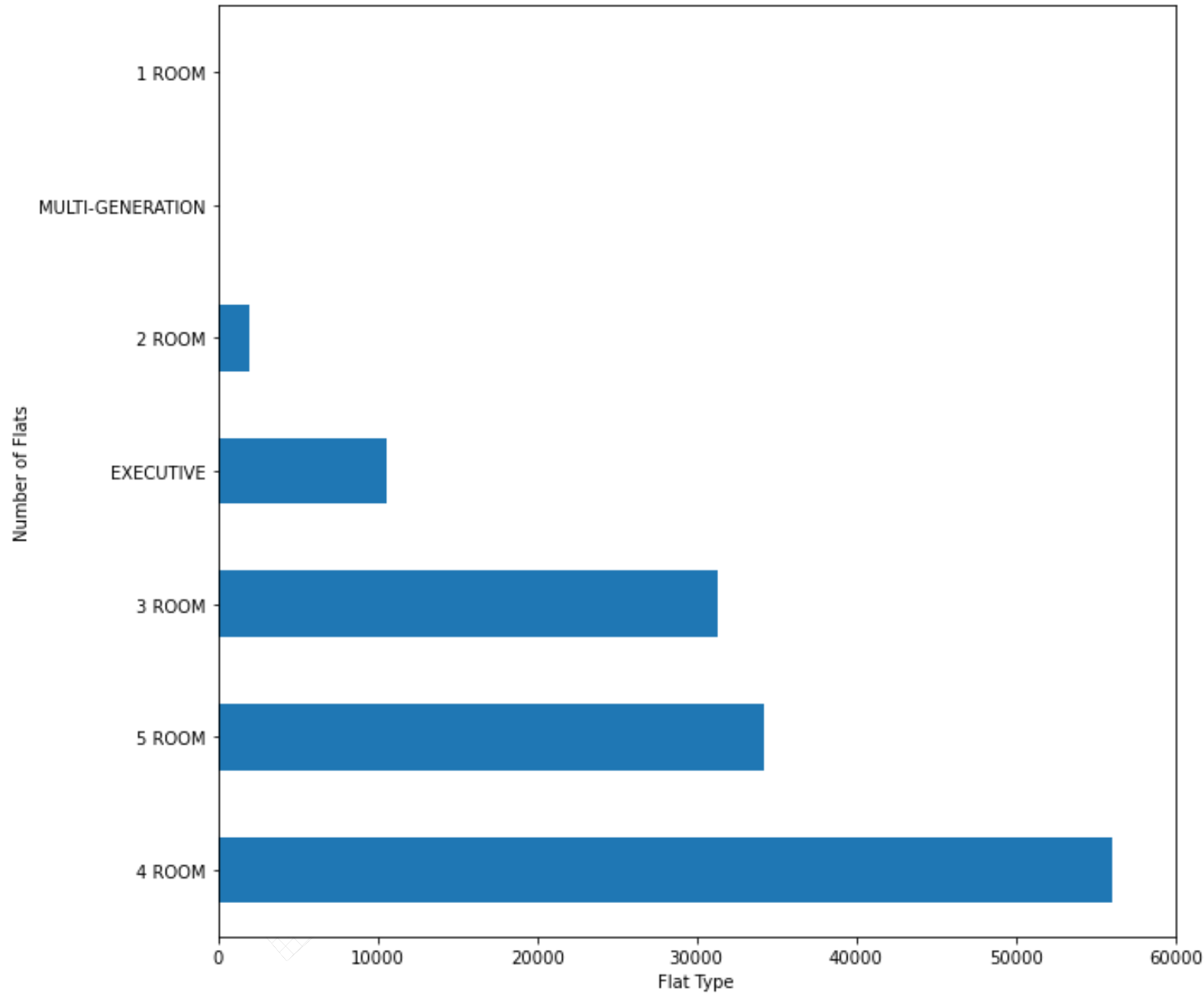
The mean resale price by location

The top 2 highest mean resale price by location are Bukit Timah & central area.

The lowest 2 are Yishun & Woodlands.

4 ROOM	56043
5 ROOM	34190
3 ROOM	31362
EXECUTIVE	10582
2 ROOM	1997
MULTI-GENERATION	66
1 ROOM	56

Which resale flat type is most transacted from 2017-2022



The most transacted resale flat type for the past 6 years

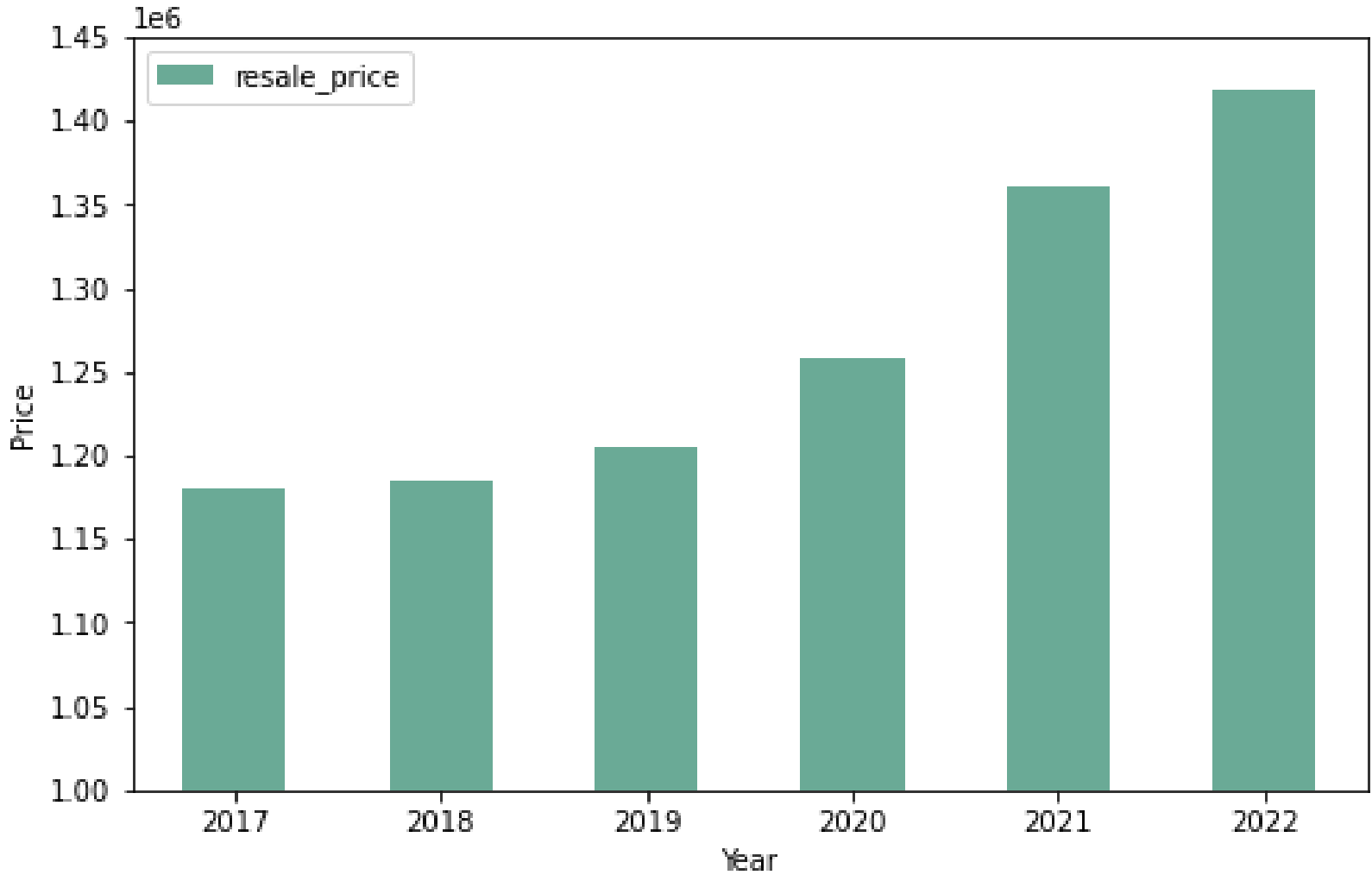
Comparing the 7 different flat type we have, 4 room was the most transacted at 56,043 units. Roughly around 11,209 units per year.

3 room & 5 room are very close with 31,362 units & 34,190 units respectively.

	year_bought	resale_price	town	flat_type
0	2017	1180000.0	BISHAN	5 ROOM
1	2018	1185000.0	KALLANG/WHAMPOA	3 ROOM
2	2019	1205000.0	KALLANG/WHAMPOA	5 ROOM
3	2020	1258000.0	CENTRAL AREA	5 ROOM
4	2021	1360000.0	BISHAN	5 ROOM
5	2022	1418000.0	QUEENSTOWN	5 ROOM

	2017	2018	2019	2020	2021	2022
Flat Type	5 ROOM	3 ROOM	5 ROOM	5 ROOM	5 ROOM	5 ROOM
Resale Price	\$ 1,180,000	\$ 1,185,000	\$ 1,205,000	\$ 1,258,000	\$ 1,360,000	\$ 1,418,000
% Change		0.4%	1.7%	4.4%	8.1%	4.3%

Highest HDB transaction for each year



The highest transacted resale flat by year

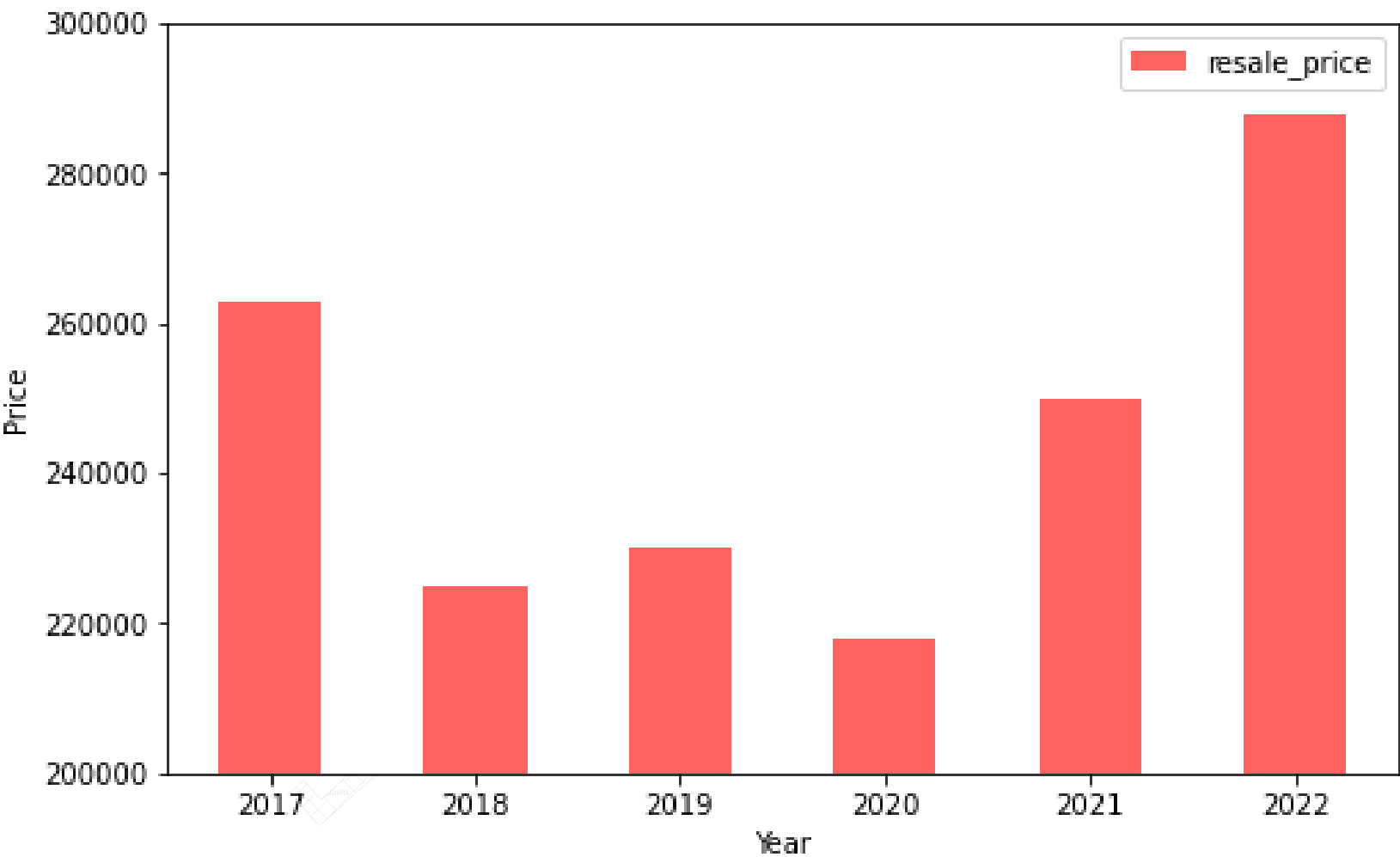
All the highest transacted resale HDB flat from 2017 -2022 came from the central region.

There was a growth of average 4% year on year for the past 6 years.

The highest transaction out of the 6 was \$1.41mil, 5 room flat in Queenstown. However, in 2018, the highest transacted flat was a 3room in Kallang/Whampoa.

	year_bought	resale_price	town	flat_type
0	2017	263000.0	WOODLANDS	4 ROOM
1	2018	225000.0	WOODLANDS	4 ROOM
2	2019	230000.0	WOODLANDS	4 ROOM
3	2020	218000.0	WOODLANDS	4 ROOM
4	2021	250000.0	WOODLANDS	4 ROOM
5	2022	288000.0	YISHUN	4 ROOM

Lowest 4 Room HDB transaction for each year



The lowest transacted resale 4 room flat by year

From 2017 to 2022, the lowest transacted resale 4 room flat all came from the north region - specifically Woodlands.

Prices started to drop from 2017 to 2019, however during covid period it started to pick up again.

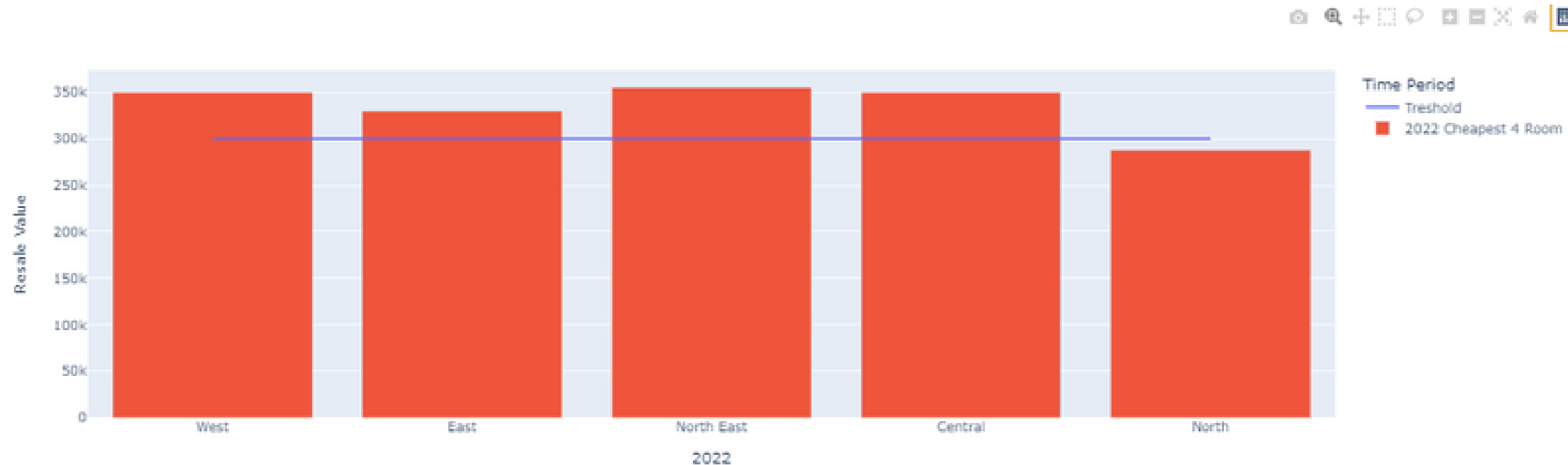
2022's Cheapest 4 Room

As Edison has 4 members in his family, the space for 1-3rooms will be insufficient.

By analysing the cheapest 2022 4room flat across all region, East was the highest YTD August 2022, costing \$303k.

The lowest was North region, costing \$245k

		2017	2018	2019	2020	2021	2022	Average
	Flat Type	Cheapest 4 ROOM						
Region	West	\$285,000	\$265,000	\$235,000	\$260,000	\$300,000	\$350,000	\$282,500
	East	\$311,000	\$300,000	\$300,000	\$250,000	\$328,000	\$330,000	\$303,167
	North	\$263,000	\$225,000	\$230,000	\$218,000	\$250,000	\$288,000	\$245,667
	North East	\$300,000	\$271,000	\$275,000	\$280,000	\$300,000	\$355,000	\$296,833
	Central	\$302,000	\$290,000	\$275,000	\$280,000	\$293,000	\$350,000	\$298,333



Conclusion

Taking into aspect a few considerations:

1. Size of family
2. Budget
3. Renovation cost (40-46k)

Based on Edison's requirements he should buy a 4 room flat in North region. This includes Sembawang, Woodlands & Yishun.

Edison will be able to find a house which accommodate his family, budget as well as a renovation cost of roughly 45k.

<https://github.com/spreadjam/Data-Analysis-Project>

source: <https://www.propertyguru.com.sg/property-guides/hdb-bto-renovation-costs-singapore-41435>





THANK YOU

