

Assignment 4

Gonghwan Kim A1746276

Question 1

Local Price	Apartment	Condo	House	Bathrooms	Apartment	Condo	House
3.891	0/7	1/6	0/7	1	5/7	4/6	6/7
4.5429	0/7	1/6	0/7	1.5	1/7	1/6	1/7
4.5573	1/7	0/6	0/7	2.5	1/7	1/6	0/7
4.9176	1/7	0/6	0/7				
5.0208	0/7	0/6	1/7	Land Area	Apartment	Condo	House
5.05	1/7	0/6	0/7	2.275	0/7	1/6	0/7
5.0597	1/7	0/6	0/7	3.472	1/7	0/6	0/7
5.3003	0/7	0/6	1/7	3.531	0/7	0/6	1/7
5.6039	0/7	0/6	2/7	4.05	1/7	0/6	0/7
5.8282	0/7	0/6	1/7	4.455	1/7	1/6	0/7
5.898	0/7	1/6	0/7	4.9883	0/7	0/6	1/7
5.9592	0/7	1/6	0/7	5	1/7	0/6	0/7
6.2712	0/7	0/6	1/7	5.15	1/7	0/6	0/7
6.6969	0/7	0/6	1/7	5.52	0/7	0/6	1/7
7.7841	0/7	1/6	0/7	5.85	0/7	1/6	0/7
8.2464	1/7	0/6	0/7	6.435	0/7	0/6	1/7
9.0384	1/7	0/6	0/7	6.666	0/7	1/6	0/7
14.4598	1/7	0/6	0/7	6.902	0/7	0/6	1/7
16.4202	0/7	1/6	0/7	7.102	0/7	1/6	0/7
				7.8	1/7	0/6	0/7
				9.52	0/7	0/6	2/7
				9.8	0/7	1/6	0/7
				12.8	1/7	0/6	0/7

Living Area	Apartment	Condo	House.	# Garages	Apartment	Condo	House
0.975	0/7	0/6	1/7	0	1/7	0/6	2/7
0.988	0/7	1/6	0/7	1	3/7	4/6	2/7
0.998	1/7	0/6	0/7	1.5	1/7	0/6	1/7
1.02	1/7	0/6	0/7	2	2/7	2/6	2/7
1.121	1/7	1/6	0/7				
1.175	0/7	1/6	0/7	# Rooms.	Apartment	Condo	House.
1.225	0/7	0/6	1/7	5	1/7	0/6	1/7
1.232	1/7	0/6	0/7	6	2/7	4/6	4/7
1.24	0/7	1/6	0/7	7	2/7	1/6	2/7
1.376	0/7	1/6	0/7	8	1/7	0/6	0/7
1.488	0/7	0/6	1/7	9	1/7	0/6	0/7
1.5	1/7	0/6	1/7	10	0/7	1/6	0/7
1.501	0/7	0/6	2/7	# Bed Rooms	Apartment	Condo	House
1.552	0/7	0/6	1/7	2	1/7	0/6	1/7
1.664	1/7	0/6	0/7	3	3/7	5/6	5/7
3	1/7	0/6	0/7	4	2/7	0/6	1/7
3.42	0/7	1/6	0/7	5	1/7	1/6	0/7

Age of Home.	Apartment	Condo	House.
14	1/7	0/6	0/7
17	0/7	1/6	0/7
22	0/7	0/6	1/7
23	1/7	0/6	0/7
30	0/7	0/6	2/7
32	0/7	1/6	3/7
40	0/7	1/6	0/7
42	2/7	1/6	0/7
46	1/7	0/6	0/7
50	1/7	0/6	0/7
51	0/7	1/6	0/7
54	1/7	0/6	0/7
56	0/7	1/6	0/7
62	0/7	0/6	1/7

$$P(\text{Apartment}) = 7/20$$

$$P(\text{Condo}) = 6/20$$

$$P(\text{House}) = 7/20$$

EX1) Feature: # Garages

The conditional probability $P(X|C)$ can be achieved by counting the frequency of X while C in the data.

For # of garages feature, the conditional probability of # Garages = 0 and $C = \text{Apartment}$ is

$$P(\text{\#Garages} = 0 | C = \text{Apartment}) = 1/7$$

\Rightarrow While construction type is Apartment, there was one zero # garages occurred

EX2) Feature: # Bed rooms

For # Bed rooms feature, the conditional probability of # bedroom = 3 and $C = \text{Condo}$ is

$$P(\text{\#Bedrooms} = 3 | C = \text{Condo}) = 5/6$$

From total 6 condos from the data, 5 of the # bedrooms were 3.

