

### Local Price

$$\text{mean apartment} = \frac{4.9176 + 4.5573 + 5.0597 + 14.4598 + 5.05 + 8.2464 + 9.0384}{7}$$

$$= 7.3327$$

$$\text{mean condo} = \frac{4.5429 + 3.891 + 5.898 + 16.4202 + 5.6039 + 6.6969}{6}$$

$$= 7.4159$$

$$\text{mean house} = \frac{5.0208 + 5.6039 + 5.8282 + 5.3003 + 6.2712 + 5.7607}{7}$$

$$= 5.7607$$

$$\therefore \text{std}, \sigma = \sqrt{\frac{1}{n-1} \sum (x_i - \bar{x})^2}$$

$$\sigma_{\text{Apartment}} = \sqrt{\frac{1}{7-1} \left\{ (4.9176 - 7.3327)^2 + (4.5573 - 7.3327)^2 + (5.0597 - 7.3327)^2 + (14.4598 - 7.3327)^2 + (5.05 - 7.3327)^2 + (8.2464 - 7.3327)^2 + (9.0384 - 7.3327)^2 \right\}}$$

$$\approx 3.616$$

$$\sigma_{\text{condo}} = \sqrt{\frac{1}{6-1} \left\{ (4.5429 - 7.4159)^2 + (3.891 - 7.4159)^2 + (5.898 - 7.4159)^2 + (16.4202 - 7.4159)^2 + (5.9592 - 7.4159)^2 + (7.7841 - 7.4159)^2 \right\}}$$

$$= 4.6112$$

$$\sigma_{\text{house}} = \sqrt{\frac{1}{7-1} \left\{ (5.0208 - 5.7607)^2 + (5.6039 - 5.7607)^2 + (5.8282 - 5.7607)^2 + (5.3003 - 5.7607)^2 + (6.2712 - 5.7607)^2 + (5.6039 - 5.7607)^2 + (6.6969 - 5.7607)^2 \right\}}$$

$$= 0.5701$$

Similarly,

Bathrooms

$$\text{mean, apt} = 1.2857$$

$$\text{mean}_{\text{condo}} = 1.33$$

$$\text{mean}_{\text{house}} = 1.0714$$

$$\sigma_{\text{apt}} = 0.5669, \sigma_{\text{condo}} = 0.6055, \sigma_{\text{house}} = 0.1890$$

land area  
Mean

Apt = 6.1039, condo = 6.025, house = 6.6309

Apt = 3.2585, condo = 2.5448, house = 2.2490

living area

	Apt	condo	house
mean	1.505	1.5533	1.3717
std	0.7041	0.9234	0.2129

garages

	Apt	condo	house
mean	1.2143	1.33	1.0714
std	0.6986	0.5164	0.8381

Rooms

	Apt	condo	house
mean	6.8571	6.833	6.1429
std	1.3452	1.6021	0.6701

Bedrooms

	Apt	condo	house
mean	3.4286	3.33	3
std	0.9759	0.8165	0.5774

### Age of home

mean	38.7143	39.66	34.2857
std	14.6824	13.9523	12.7242

Normal distribution,  $P(x_j | c_i) = \frac{1}{\sqrt{2\pi\sigma_{ij}^2}} e^{-\frac{(x_j - \bar{x})^2}{2\sigma^2}}$

$$P(\text{local price} = 6.0931 | c_{APT}) = 0.0140$$

$$P(\text{Bath} = 1.5 | c_{APT}) = 0.6552$$

$$P(\text{land area} = 6.7265 | c_{APT}) = 0.1202$$

$$P(\text{living area} = 1.652 | c_{APT}) = 0.5544$$

$$P(\text{garages} = 1 | c_{APT}) = 0.5448$$

$$P(\text{Rooms} = 6 | c_{APT}) = 0.242$$

$$P(\text{Bedroom} = 3 | c_{APT}) = 0.3712$$

$$P(\text{Age} = 44 | c_{APT}) = 0.0255$$

$$P(\text{local price} = 6.0931 | c_n) = 0.5904$$

$$P(\text{Bath} = 1.5 | c_n) = 0.1613$$

$$P(\text{land area} = 6.7265 | c_n) = 0.1772$$

$$P(\text{living area} = 1.652 | c_n) = 0.8874$$

$$P(\text{carages} = 1 | c_n) = 0.4742$$

$$P(\text{Rooms} = 6 | c_n) = 0.5658$$

$$P(\text{Bedroom} = 3 | c_n) = 0.6909$$

$$P(\text{Age} = 44 | c_n) = 0.0234$$

---

$$P(\text{local price} = 8.3607 | c_{\text{APT}}) = 0.1060$$

$$P(\text{Bath} = 1.5 | c_{\text{APT}}) = 0.6552$$

$$P(\text{land area} = 9.15 | c_{\text{APT}}) = 0.0791$$

$$P(\text{living area} = 1.77 | c_{\text{APT}}) = 0.5259$$

$$P(\text{carages} = 2 | c_{\text{APT}}) = 0.3034$$

$$P(\text{Rooms} = 8 | c_{\text{APT}}) = 0.2067$$

$$P(\text{Bedroom} = 4 | c_{\text{APT}}) = 0.344$$

$$P(\text{Age} = 48 | c_{\text{APT}}) = 0.0222$$

$$P(\text{local price} = 8.3607 | c_c) = 0.0847$$

$$P(\text{Bath} = 1.5 | c_c) = 0.6344$$

$$P(\text{land area} = 9.15 | c_c) = 0.0738$$

$$P(\text{living area} = 1.77 | c_c) = 0.4195$$

$$P(\text{carages} = 2 | c_c) = 0.3357$$

$$P(\text{Rooms} = 8 | c_c) = 0.1910$$

$$P(\text{Bedroom} = 4 | c_c) = 0.3507$$

$$P(\text{Age} = 48 | c_c) = 0.0239$$

---

$$P(\text{local price} = 8.3607 | c_h) = 0.0213$$

$$P(\text{Bath} = 1.5 | c_h) = 0.1613$$

$$P(\text{land area} = 9.15 | c_h) = 0.0947$$

$$P(\text{living area} = 1.77 | c_h) = 0.3643$$

$$P(\text{carages} = 2 | c_h) = 0.2577$$

$$P(\text{Rooms} = 8 | c_h) = 0.0155$$

$$P(\text{Bedroom} = 4 | c_h) = 0.1542$$

$$P(\text{Age} = 48 | c_h) = 0.00175$$

$$P(\text{local price} = 8.14 \mid c_{\text{APT}}) = 0.1076$$

$$P(\text{Bath} = 1 \mid c_{\text{APT}}) = 0.6198$$

$$P(\text{land area} = 8 \mid c_{\text{APT}}) = 0.1034$$

$$P(\text{living area} = 1.504 \mid c_{\text{APT}}) = 0.566$$

$$P(\text{carages} = 2 \mid c_{\text{APT}}) = 0.3034$$

$$P(\text{Rooms} = 7 \mid c_{\text{APT}}) = 0.2949$$

$$P(\text{Bedroom} = 3 \mid c_{\text{APT}}) = 0.3712$$

$$P(\text{Age} = 3 \mid c_{\text{APT}}) = 0.0014$$

$$P(\text{local price} = 8.14 \mid c_c) = 0.0855$$

$$P(\text{Bath} = 1 \mid c_c) = 0.5662$$

$$P(\text{land area} = 8 \mid c_c) = 0.1160$$

$$P(\text{living area} = 1.504 \mid c_c) = 0.4314$$

$$P(\text{carages} = 2 \mid c_c) = 0.3357$$

$$P(\text{Rooms} = 7 \mid c_c) = 0.2477$$

$$P(\text{Bedroom} = 3 \mid c_c) = 0.4495$$

$$P(\text{Age} = 3 \mid c_c) = 0.00904$$

$$P(\text{local price} = 8.14 | C_h) = 1.155 \times 10^{-4}$$

$$P(\text{Bath} = 1 | C_h) = 1.9654$$

$$P(\text{land area} = 8 | C_h) = 0.1474$$

$$P(\text{living area} = 1.504 | C_h) = 1.6305$$

$$P(\text{carages} = 2 | C_h) = 0.2577$$

$$P(\text{Rooms} = 7 | C_h) = 0.2673$$

$$P(\text{Bedroom} = 3 | C_h) = 0.6909$$

$$P(\text{Age} = 3 | C_h) = 1.526 \times 10^{-3}$$

$$P(\text{local price} = 9.1416 | C_{APT}) = 0.0973$$

$$P(\text{Bath} = 1.5 | C_{APT}) = 0.6552$$

$$P(\text{land area} = 7.3262 | C_{APT}) = 0.1141$$

$$P(\text{living area} = 1.831 | C_{APT}) = 0.509$$

$$P(\text{carages} = 1.5 | C_{APT}) = 0.5252$$

$$P(\text{Rooms} = 8 | C_{APT}) = 0.2067$$

$$P(\text{Bedroom} = 4 | C_{APT}) = 0.34$$

$$P(\text{Age} = 3 | C_{APT}) = 0.0237$$

$$P(\text{local price} = 9.1416 | c_c) = 0.0807$$

$$P(\text{Bath} = 1.5 | c_c) = 0.6344$$

$$P(\text{land area} = 7.3262 | c_c) = 0.1376$$

$$P(\text{living area} = 1.831 | c_c) = 0.4129$$

$$P(\text{carages} = 1.5 | c_c) = 0.733$$

$$P(\text{Rooms} = 8 | c_c) = 0.191$$

$$P(\text{Bedroom} = 4 | c_c) = 0.3501$$

$$P(\text{Age} = 31 | c_c) = 0.0236$$

$$P(\text{local price} = 9.1416 | c_h) = 1.615 \times 10^{-8}$$

$$P(\text{Bath} = 1.5 | c_h) = 0.1613$$

$$P(\text{land area} = 7.3262 | c_h) = 0.1671$$

$$P(\text{living area} = 1.831 | c_h) = 0.2229$$

$$P(\text{carages} = 1.5 | c_h) = 0.4177$$

$$P(\text{Rooms} = 8 | c_h) = 0.0155$$

$$P(\text{Bedroom} = 4 | c_h) = 0.1542$$

$$P(\text{Age} = 31 | c_h) = 0.0303$$

$$P(\text{local price} = 12 \mid c_{\text{APT}}) = 0.0480$$

$$P(\text{Bath} = 1.5 \mid c_{\text{APT}}) = 0.6552$$

$$P(\text{land area} = 1.5 \mid c_{\text{APT}}) = 0.1156$$

$$P(\text{living area} = 1.2 \mid c_{\text{APT}}) = 0.5159$$

$$P(\text{carages} = 2 \mid c_{\text{APT}}) = 0.3034$$

$$P(\text{Rooms} = 6 \mid c_{\text{APT}}) = 0.2421$$

$$P(\text{Bedroom} = 3 \mid c_{\text{APT}}) = 0.3712$$

$$P(\text{Age} = 30 \mid c_{\text{APT}}) = 0.0228$$

$$P(\text{local price} = 12 \mid c_c) = 0.0528$$

$$P(\text{Bath} = 1.5 \mid c_c) = 0.6344$$

$$P(\text{land area} = 1.5 \mid c_c) = 0.1446$$

$$P(\text{living area} = 1.2 \mid c_c) = 0.4015$$

$$P(\text{carages} = 2 \mid c_c) = 0.3357$$

$$P(\text{Rooms} = 6 \mid c_c) = 0.2175$$

$$P(\text{Bedroom} = 3 \mid c_c) = 0.4495$$

$$P(\text{Age} = 30 \mid c_c) = 0.0225$$

$$P(\text{local price} = 12 \mid c_h) = 6.854 \times 10^{-27}$$

$$P(\text{Bath} = 1.5 \mid c_h) = 0.1613$$

$$P(\text{land area} = 1.5 \mid c_h) = 0.1364$$

$$P(\text{living area} = 1.2 \mid c_h) = 1.2493$$

$$P(\text{carages} = 2 \mid c_h) = 0.2577$$

$$P(\text{Rooms} = 6 \mid c_h) = 0.5658$$

$$P(\text{Bedroom} = 3 \mid c_h) = 0.6909$$

$$(Age = 30 \mid c_h) = 0.0296$$