Post-hoc test examples: For 1-way ANOVA

1. ANOVA from Y ~ X and X has four levels (A,B,C, D)

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
B - A	-6.17	2.28	(-12.55, 0.22)	-2.70	0.061
C - A	-1.75	2.28	(-8.14, 4.64)	-0.77	0.868
D - A	3.33	2.28	(-3.05, 9.72)	1.46	0.478
C - B	4.42	2.28	(-1.97, 10.80)	1.94	0.245
D - B	9.50	2.28	(3.11, 15.89)	4.17	0.002
D - C	5.08	2.28	(-1.30, 11.47)	2.23	0.150

Individual confidence level = 98.89%

At least one groups in A/B/C/D has different mean of Y (conclusion from ANOVA)

From the post-hoc test, D and B have different means of Y – mean(D) > mean (B)

2. https://www.cedu.niu.edu/~walker/statistics/Lab%20One-Way%202.htm

3. https://online.stat.psu.edu/stat200/book/export/html/212

4. https://aaronschlegel.me/tukeys-test-post-hoc-analysis.html