ASSIGNMENT: TWO WAY ANOVA

Two way ANOVA is used to find the mean difference between the categorical independent variables with different levels, and quantitative dependent variable.

Considering two way ANOVA for Placement, two columns “Gender” and “Work experience” both being categorical are taken as independent variables and “Salary” being quantitative is taken as dependent variable.

To check whether the gender (male and female) and work experience (yes and no) have any significant difference in salary, two way ANOVA is used. The following result is produced.

	sum_sq	df	F	PR(>F)
C(gender)	5.484421e+10	1.0	3.194710	0.075312
C(workex)	2.870961e+11	1.0	16.723533	0.000061
C(gender):C(workex)	1.964520e+07	1.0	0.001144	0.973046
Residual	3.622278e+12	211.0	NaN	NaN

Gender and Salary: here, p_value is 0.075312 > 0.05. Hence, accept null hypothesis: There is no significant difference in gender that affects salary.

Work experience and salary: here, p_value is 0.000061 < 0.05. Hence accept alternate hypothesis and reject null hypothesis: There is significant difference in work experience that affects salary.

Gender : Work experience and Salary: here, p_value is 0.973046 > 0.05. Hence accept null hypothesis: There is no significant difference in Gender and work experience that affects salary.