**Case Study**

Demand for system analysis in the consulting industry is greater than ever. Graduates with a combination of business and computer knowledge some even from liberal arts program are getting great offers from consulting companies. Once these people are hired, they frequently switch from one company to another as competing companies lure them away with even better offer one consulting company D&Y, has collect data on a sample of system analysis with under graduate degree they hired several years ago. The data are in the file **Retention Data.xlsx.** The variable are as follows:

* Starting Salary: employee’s starting salary at D&Y
* On Road Pct: Percentage of time employees has spent on the road with clients
* State Univ: Whether the employee graduate from state university (D&Y’s Principal Source of recruits)
* CIS Degree: Whether the employee majored in computer information system or a similar computer related area
* Stayed 3 years: Whether the employee stayed at least three years with D&Y
* Tenure: Tenure of employee at D&Y (Months) if he or she moved before three years

D&Y is trying to learn everything it can about retention of these valuable employees. You can help by solving the following problems and then based on your analysis, presenting a report to D&Y.

1. Although Starting salaries are in a Fairly Narrow band, D&Y Wonders whether they have anything to do with retention.
2. Find 95% Confidence interval for the mean starting salary of all employees who stay at lease three years with D&Y. Do the same for those who leave before three years. Then find a 95% Confidence interval for the difference b/w these means.
3. Among All Employees who starting Salary is below the median ($37.50), find a 95% confidence interval for the proportion who stay with D&Y for at least three years. Do the same for the employees with starting salaries above the medians. Then find a 95% confidence interval for the difference b/w these proportion.
4. D&Y Wonders whether the percentage of time on the road might influence who stays and who leaves. Repeat the previous Problem. But now do the analysis in terms of percentage of time on the road rather than starting salary. (The median percentage of time on the road is 54%)
5. Find 95% confidence interval of the mean tenure ( in months ) of all employees who leaves D&Y within three years being hired. Why is it not possible with the given data to find a confidence interval for the mean tenure at D&Y among all system analyst hired by D&Y?
6. State University’s student, particularly those in its nationally acclaimed CIS areas, have traditionally been among the best of D&Y’s recruits but are they relative hard to retain? Find one or more relevant confidence interval to help you make an argument on way or the other.