CASE "CENTRAL PARKING SERVICES PRIVATE LIMITED".

ASSIGNMENT QUESTIONS

1. Explore the data for weekday and weekend. What inferences can you make based on descriptive statistics?
2. Test whether the random variable, "length of stay", for weekend and weekday follows normal distribution.
3. Between normal and Weibull distribution, which distribution should be used to represent the random variable "length of stay" during weekend?
4. CPS charges for weekends are more than weekdays. One of the reasons for higher parking fee during weekends is that the customers tend to stay for longer duration resulting in non-availability of parking lots. Is there an evidence to support that the customers stay for longer period during weekends compared to weekdays?
5. If we divide the day into three time periods viz. 10am to 2pm as Morning, 2pm to 6pm as Afternoon and 6pm to 10pm as Evening, then determine if the average length of stay really varies between these three time periods.
6. CPS charges its customers INR 30 for first 3 hours and INR 10 for every additional hour. What will be the financial impact to CPS if they charge INR 20 for the first 2 hours and INR 10 for every additional hour? What assumptions are made in this analysis? ($1 = INR 62, in November 2013)
7. The average arrival rate of cars during time periods for Sunday and Monday are shown in the following table. How many additional workers are required on Sundays compared to Mondays if CPS employs one additional worker for every 30 vehicles entering the parking lot?

Arrival Rate on Monday and Sunday		
Time Interval	Monday	Sunday
10am-11am	30	42
11am-12pm	74	113
12pm-1pm	120	211
1pm-2pm	147	271
2pm-3pm	155	286
3pm-4pm	172	278
4pm-5pm	173	286
5pm-6pm	163	279
6pm-7pm	153	292
7pm-8pm	162	285
8pm-9pm	134	204
9pm-10pm	74	101

8. According to Poornima, the average occupancy time on a weekday is utmost 2 hours, but the analyst's calculation on data showed otherwise. She was still not assured and asked analysts to check again. Analysts thought of conducting a statistical test over Poornima's data. Please help the analyst in coming up with the test at 0.05 level of significance. Assume sample's variance to be same as the population variance.