UCS 548 Foundations of Data Science

Assignment 7

1. Create a data matrix named MARKS having marks of three subjects SUB1, SUB2 and SUB3 for 20 students. Use *apply* function
   a. To find total marks of each students.
   b. Append the total to the given MARKS dataset.
   c. To create a function called st.err()=sd(x)/sqrt(length(x)) to find the standard error in SUB1, SUB2, and SUB3.
   d. Add 0.25 bonus marks to each mark in SUB1, SUB2 and SUB3.
2. Create three vectors V1, V2, and V3 from the SUB1, SUB2, and SUB3 above respectively. Use *lapply()* function to find the sum of all the marks in V1, V2, and V3.
3. Create a vector TOTAL_SUM that hold the value of V1, V2, and V3 using *sapply()*.
4. Compute the square of each value of marks in V1, V2, and V3 using *sapply()*.
5. Add an index field I =(1,1,1,1,1,2,2,2,2,2,3,3,3,3,3,4,4,4,4,4) to matrix MARKS. Use *tapply()* function to compute *mean()* and *sd()* of SUB1 based on index I.
6. Create a function f(x,y)=x/y where x is V1 and y is V2. Use *mapply()* to compute this function.
7. Practice all apply functions on "Seatbelts" data set given in R.