Data Collection & Data Quality
Report
On
Mobility Data

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Report on the Mobility Data:

As the initial steps, I have exported the given file in the excel as a text file and then delaminated the values with "=", ",". And added the respective TP id for the series of the numbers for that respective Trips. And then converted the Latitude and Longitude values with the respective formula given which converts the given number to WGS84 decimal degree. And then converted the given time number to the respective time series with using the respective formula. Did the same for converting the date number to the Data format. Then divided the speed column with 100 as informed.

Converting Time to proper versions:

=IF(LEN(F2)=6,MID(F2,1,2)&":"&MID(F2,3,2)&":"&MID(F2,5,2),MID(F2,1,1)&":"&MID(F2,2,2)&":"&MID(F2,4,2))

Converting Date to proper version:

=IF(LEN(H2)=6,MID(H2,1,2)&"-"&MID(H2,3,2)&"-"&MID(H2,5,2),MID(H2,1,1)&"-"&MID(H2,2,2)&"-"&MID(H2,4,2))

Diving Speed by 100:

L=J2/100

Calculating The distance between two points:

O=ACOS((SIN(M2*PI()/180)*SIN(M3*PI()/180)+COS(M2*PI()/180)*COS(M3*PI()/180)*COS(N3*PI()/180-N2*PI()/180)))*3443.8985

Converting the calculated distance into meters:

P=O2*1852

Calculating the time difference between two points:

R or S=IF(A3=A2,G3-G2,0)

And then formatting the column into hh:mm:ss or ss (I did both)

Calculating average speed on the trip:

T=P2/S2

This would be calculated in meters per seconds.

Calculating Acceleration at each point:

U =IF(A2=A3,((L2*5)/18)/(MINUTE(R2)*60+SECOND(R2)),0)

Calculating the average acceleration at each point:

V ==VALUE(SUM(V2:V24)/COUNT(V2:V4))

I have calculated the average acceleration by averaging the acceleration for each trip