About **groupedtraintestdata**

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The script **run_analysis.R** processes the raw train and test data sets as explained in the README file. The transformed data is in groupedtraintestdata data frame.

The data frame has 180 observations and 68 variables

It computes the average of each variable for each activity and each subject.

The raw data came from the accelerometer and gyroscope 3-axial raw three-dimensional signals in time domain. a Fast Fourier Transform (FFT) was applied to some of these signals producing frequency domain data.

The script **run_analysis.R** processes this raw data using the steps described in README text file resulting in the following data frame with 180 observation and 68 variables. The variables with corresponding classes and some values are listed below:

```
subjects
      : int  1 1 1 1 1 1 2 2 2 2 ...

activities
      : chr  "LAYING" "SITTING" "STANDING" "WALKING" ...

body acceleration in time domain mean-X
      : num  0.222 0.261 0.279 0.277 0.289 ...

body acceleration in time domain mean-Y
      : num  -0.04051 -0.00131 -0.01614 -0.01738 -0.00992 ...

body acceleration in time domain mean-Z
      : num  -0.113 -0.105 -0.111 -0.111 -0.108 ...

gravity acceleration  in time domain mean-X
      : num  -0.249 0.832 0.943 0.935 0.932 ...

gravity acceleration  in time domain mean-Y
      : num  0.706 0.204 -0.273 -0.282 -0.267 ...

gravity acceleration  in time domain mean-Z
      : num  0.4458 0.332 0.0135 -0.0681 -0.0621 ...

body acceleration jerk in time domain mean-X
      : num  0.0811 0.0775 0.0754 0.074 0.0542 ...

body acceleration jerk in time domain mean-Y
      : num  0.003838 -0.000619 0.007976 0.028272 0.02965 ...

body acceleration jerk in time domain mean-Z
      : num  0.01083 -0.00337 -0.00369 -0.00417 -0.01097 ...

body acceleration  in time domain mean-X
      : num  -0.0166 -0.0454 -0.024 -0.0418 -0.0351 ...

body acceleration  in time domain mean-Y
         : num  -0.0645 -0.0919 -0.0594 -0.0695 -0.0909 ...
```

```
body acceleration  in time domain mean-Z
      : num  0.1487 0.0629 0.0748 0.0849 0.0901 ...

body acceleration jerk  in time domain mean-X
      : num  -0.1073 -0.0937 -0.0996 -0.09 -0.074 ...

body acceleration jerk  in time domain mean-Y
      : num  -0.0415 -0.0402 -0.0441 -0.0398 -0.044 ...

body acceleration jerk  in time domain mean-Z
      : num  -0.0741 -0.0467 -0.049 -0.0461 -0.027 ...

body acceleration in time-FFT domain mean
      : num  -0.8419 -0.9485 -0.9843 -0.137 0.0272 ...

tGravityAccMag-mean
      : num  -0.8419 -0.9485 -0.9843 -0.137 0.0272 ...

body acceleration jerk in time-FFT domain mean
      : num  -0.9544 -0.9874 -0.9924 -0.1414 -0.0894 ...

body acceleration  in time-FFT domain mean
      : num  -0.8748 -0.9309 -0.9765 -0.161 -0.0757 ...

body acceleration jerk  in time-FFT domain mean
      : num  -0.963 -0.992 -0.995 -0.299 -0.295 ...

body acceleration in frequency domain mean-X
      num  -0.9391 -0.9796 -0.9952 -0.2028 0.0382 ...

body acceleration in frequency domain mean-Y
      : num  -0.86707 -0.94408 -0.97707 0.08971 0.00155 ...

body acceleration in frequency domain mean-Z
      : num  -0.883 -0.959 -0.985 -0.332 -0.226 ...

body acceleration jerk in frequency domain mean-X
      : num  -0.9571 -0.9866 -0.9946 -0.1705 -0.0277 ...

body acceleration jerk in frequency domain mean-Y
      : num  -0.9225 -0.9816 -0.9854 -0.0352 -0.1287 ...

body acceleration jerk in frequency domain mean-Z
      : num  -0.948 -0.986 -0.991 -0.469 -0.288 ...

body acceleration in frequency domain mean-X
      : num -0.85 -0.976 -0.986 -0.339 -0.352 ...

body acceleration in frequency domain mean-Y
      : num  -0.9522 -0.9758 -0.989 -0.1031 -0.0557 ...

body acceleration in frequency domain mean-Z
      : num  -0.9093 -0.9513 -0.9808 -0.2559 -0.0319 ...

body acceleration in frequency-FFT domain mean
      : num -0.8618 -0.9478 -0.9854 -0.1286 0.0966 ...

fBodyBodyAccJerkMag-mean
      : num  -0.9333 -0.9853 -0.9925 -0.0571 0.0262 ...

fBodyBodyGyroMag-mean
      : num  -0.862 -0.958 -0.985 -0.199 -0.186 ...
```

```
fBodyBodyGyroJerkMag-mean
      : num  -0.942 -0.99 -0.995 -0.319 -0.282 ...

body acceleration in time domain std-X
      : num  -0.928 -0.977 -0.996 -0.284 0.03 ...

body acceleration in time domain std-Y
      : num  -0.8368 -0.9226 -0.9732 0.1145 -0.0319 ...

body acceleration in time domain std-Z
      : num  -0.826 -0.94 -0.98 -0.26 -0.23 ...

gravity acceleration in time domain std-X
      : num  -0.897 -0.968 -0.994 -0.977 -0.951 ...

gravity acceleration  in time domain std-Y
      : num  -0.908 -0.936 -0.981 -0.971 -0.937 ...

gravity acceleration  in time domain std-Z
       : num  -0.852 -0.949 -0.976 -0.948 -0.896 ...

body acceleration jerk in time domain std-X
      : num  -0.9585 -0.9864 -0.9946 -0.1136 -0.0123 ...

body acceleration jerk in time domain std-Y
      : num  -0.924 -0.981 -0.986 0.067 -0.102 ...

body acceleration jerk in time domain std-Z
      : num  -0.955 -0.988 -0.992 -0.503 -0.346 ...

body acceleration  in time domain std-X
      : num  -0.874 -0.977 -0.987 -0.474 -0.458 ...

body acceleration  in time domain std-Y
      : num  -0.9511 -0.9665 -0.9877 -0.0546 -0.1263 ...

body acceleration  in time domain std-Z
      : num  -0.908 -0.941 -0.981 -0.344 -0.125 ...

body acceleration jerk  in time domain std-X
      : num  -0.919 -0.992 -0.993 -0.207 -0.487 ...

body acceleration jerk  in time domain std-Y
      : num  -0.968 -0.99 -0.995 -0.304 -0.239 ...

body acceleration jerk  in time domain std-Z
      : num  -0.958 -0.988 -0.992 -0.404 -0.269 ...

body acceleration in time-FFT domain std
      : num  -0.7951 -0.9271 -0.9819 -0.2197 0.0199 ...

tGravityAccMag-std
      : num  -0.7951 -0.9271 -0.9819 -0.2197 0.0199 ...

body acceleration jerk in time-FFT domain std
      : num  -0.9282 -0.9841 -0.9931 -0.0745 -0.0258 ...

body acceleration  in time-FFT domain std
      : num  -0.819 -0.935 -0.979 -0.187 -0.226 ...

body acceleration jerk  in time-FFT domain std
      : num  -0.936 -0.988 -0.995 -0.325 -0.307 ...

body acceleration in frequency domain std-X
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```
      : num  -0.9244 -0.9764 -0.996 -0.3191 0.0243 ...

body acceleration in frequency domain std-Y
      : num  -0.834 -0.917 -0.972 0.056 -0.113 ...

body acceleration in frequency domain std-Z
      : num  -0.813 -0.934 -0.978 -0.28 -0.298 ...

body acceleration jerk in frequency domain std-X
      : num  -0.9642 -0.9875 -0.9951 -0.1336 -0.0863 ...

body acceleration jerk in frequency domain std-Y
      : num  -0.932 -0.983 -0.987 0.107 -0.135 ...

body acceleration jerk in frequency domain std-Z
      : num  -0.961 -0.988 -0.992 -0.535 -0.402 ...

body acceleration  in frequency domain std-X
      : num  -0.882 -0.978 -0.987 -0.517 -0.495 ...

body acceleration  in frequency domain std-Y
      : num  -0.9512 -0.9623 -0.9871 -0.0335 -0.1814 ...

body acceleration  in frequency domain std-Z
      : num  -0.917 -0.944 -0.982 -0.437 -0.238 ...

body acceleration in frequency-FFT domain std
      : num  -0.798 -0.928 -0.982 -0.398 -0.187 ...

fBodyBodyAccJerkMag-std
      : num  -0.922 -0.982 -0.993 -0.103 -0.104 ...

fBodyBodyGyroMag-std
      : num  -0.824 -0.932 -0.978 -0.321 -0.398 ...

fBodyBodyGyroJerkMag-std
      : num  -0.933 -0.987 -0.995 -0.382 -0.392 ...
```