# Linear discriminant analysis

Linear discriminant analysis **(LDA)** is a generalization of Fisher's linear discriminant, *a method used in statistics, pattern recognition and machine learning* to find a linear combination of features that characterizes or separates two or more classes of objects or events.

## Split data into training and testing chunks

```
[1] 429   9
```

```
[1] 141   9
```

## View model

```
Call:
lda(Social ~ Visits + BounceRate, data = training)

Prior probabilities of groups:
 Facebook  LinkedIn   Twitter
0.3473193 0.3263403 0.3263403

Group means:
           Visits BounceRate
Facebook 32.03356  30.516779
LinkedIn 19.25000   7.635714
Twitter  39.67143  24.171429

Coefficients of linear discriminants:
                 LD1         LD2
Visits      0.04021930  0.05787536
BounceRate -0.09077141 -0.02928593

Proportion of trace:
   LD1    LD2
0.8102 0.1898
```

## Generate predictions on the training dataset

```
   Facebook   LinkedIn    Twitter
2 0.2540350 0.46424789 0.2817171
3 0.2202796 0.54860327 0.2311172
4 0.3050667 0.34028080 0.3546525
6 0.1994113 0.51120091 0.2893878
7 0.1607683 0.49883084 0.3404009
9 0.5138971 0.08828803 0.3978149
```

# Plot Linear discriminant analysis on Social