Homework 7 - Predictive Modeling in Finance and Insurance

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```r
library(MASS)
library(ggplot2)
library(leaps)
Boston$chas <- factor(Boston$chas)
```

1. Generalized Linear Model

a. Showing pdf belongs to exponential family

b. Natural Exponential family or Exponential Dispersion Family

c. Score statistic

d. Pareto distribution and Exponential Family

2. Logistic Regression

3. Logistic Regression Part 2

a. Coefficients from Models

b. Probability Estimates from models

c. Expeced Values from 3 Models

d. Pearson residuals

e. Goodness of fit statistics

4. Maximum Likelihood Estimation approximation

a. Plot of number of cases against time period

b. Plot against log i

c. Fitting GLM

5. Deviance

a. Calculating Deviance

b. Calculating Pearson residual

c. Calculating deviance residual

6. Nominal Regression

a. Odds ratio

b. Probability Calculation

7. Ordinal Regression