BIOS 902: Bayesian Statistics
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Homework #5

1. The provided *drowning.txt* file (I placed the data in the shared drive) contains the number of people drown per year in Finland 1980–2013. Using WinBUGS, fit a linear model with Gaussian noise to these data (using time, x, as the predictor and number of drownings, y, as the target variable), and answer the following questions:

i) What can you say about the trend in the number of people drown per year? Plot the histogram of the slope of the linear model.

ii) What does the model predict for year 2016?

iii) Plot the histogram of the posterior predictive distribution for number of people drown at $x^* = 2016$.

x	y
1980	274
1981	233
1982	266
1983	258
1984	245
1985	216
1986	268
1987	224
1988	311
1989	305
1990	231
1991	277
1992	266
1993	219
1994	228
1995	195
1996	171
1997	253
1998	196
1999	251
2000	209
2001	207
2002	228
2003	214
2004	195
2005	200
2006	204
2007	195
2008	168
2009	169
2010	191
2011	163
2012	117
2013	168