Paper 475.330 **Assignment 4** **Due: 15 Oct**

The following data was collected on the daytime habits of two species of lizard *grahami* (G) and *opalinus* (O). The data was collected by observing occupied sites (perches) and recording the relevant information: species involved (O or G), time of day (early, mid-day, or late), whether the perch was sunny or shaded, height of perch (< 5 or ≥ 5 feet), and diameter of perch (≤ 2 or > 2 inches).

			Time of Day					
	Perch		Early		Mid-day		Late	
S	D	H	G	O	G	O	G	O
sunny	≤ 2	< 5	20	2	8	1	4	4
		≥ 5	13	0	8	0	12	0
	> 2	< 5	8	3	4	1	5	3
		≥ 5	6	0	0	0	1	1
shaded	≤ 2	< 5	34	11	69	20	18	10
		≥ 5	31	5	55	4	13	3
	> 2	< 5	17	15	60	32	8	8
		≥ 5	12	1	21	5	4	4

Analyse this data to determine whether the measured factors affect the preferences of these lizards for different types of perches. Is there evidence that some of the factors are related (e.g. do the lizards' preferences with respect to sunny or shaded perches change with the time of day)? Do both types of lizard exhibit the same preferences for perches – if not how do their preferences differ?

Note: I have **not** provided a file that contains this data on the advanced lab computer – you must enter this data into S-plus yourself.

Your report will (again) consist of two sections. The first section should summarise your findings in a manner that someone not familiar with statistical techniques and terminology can understand. The second part of your report should be a Statistical Appendix that explains how you analysed the data. You should include and comment on the diagnostic procedures you used to check the validity of your fitted model.