

# Business Analytics

## Exercise Sheet 8

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### Exercise 21: Gradient Descent (5 Points)

Describe with pseudocode how to learn a Ridge Regression (Linear Regression with L2-Loss and L2-Regularisation) using Gradient Descent. Compute the gradients.

### Exercise 22: Agglomerative Hierarchical Clustering (5 points)

Use single-link, complete-link and average-link agglomerative hierarchical clustering to cluster the points P1 to P8 using the given distance matrix. Draw the dendrogram.

	P1	P2	P3	P4	P5	P6	P7	P8
P1	0	5	6	3.61	7.07	7.21	8.06	2.24
P2		0	6.08	4.24	5	4.12	3.16	4.47
P3			0	5	1.41	1.41	7.28	6.40
P4				0	3.61	4.12	7.21	1.41
P5					0	1.41	6.71	5
P6						0	5.39	5.39
P7							0	7.62
P8								0

### Submission

- Electronically to wistuba@ismll.de. Text submitted as pdf, code submitted as source files. No archives.