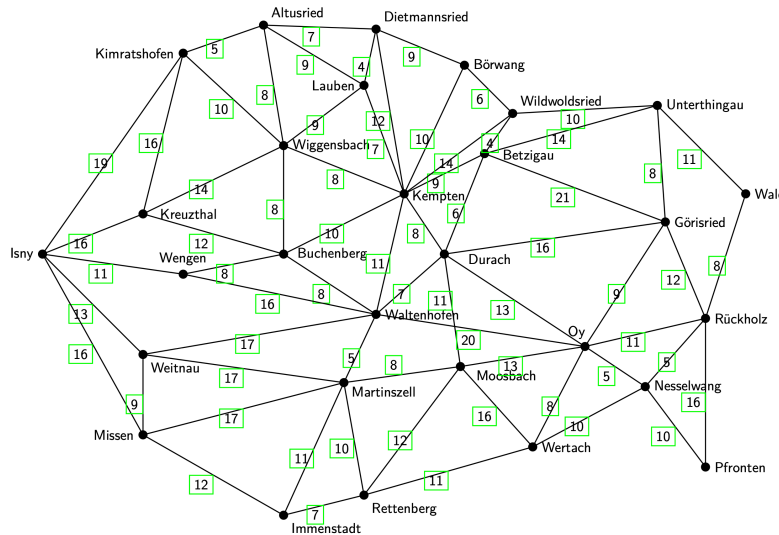


# Aufgabenblatt 5

## Berechnung einer Entfernungsmatrix mit dem Algorithmus von Floyd



Landkarte mit Orten aus dem Allgäu und Entfernungsangaben in km  
(Prof. Dr. Elmar Böhrer, Hochschule Kempten)

Berechnen Sie mit dem Algorithmus von Floyd für die gegebene Allgäu-Karte alle Entfernungen mit den dazugehörigen kürzesten Wegen zwischen jeweils zwei Ortschaften. Sehen Sie auch eine Methode vor, um die Entfernungsmatrix als csv-Datei (comma-separated values, siehe auch Wikipedia) zu speichern. Mit Excel oder Ähnlichem lässt sich die Datei in gewohnter Weise darstellen.

allgau

	Altusried	Betzigau	Buchenberg	Bönwang	Dietmannsried	Durach	Görisried	Immenstadt	Isny	Kempten	Kimratshofen	Kreuzthal	Lauben	Martinzell	Misser	Moosbach	Nesselwang	Oy	Pfronten	Rettenberg	Rückholz	Unterthingau	Wald	Waltenhofen	Weitau	Wengen	Wertach	Wiggensbach	Wildwoldsried						
Altusried	0,00000	25,00000	16,00000	16,00000	7,00000	24,00000	40,00000	52,00000	24,00000	16,00000	8,00000	9,00000	29,00000	40,00000	35,00000	42,00000	37,00000	47,00000	47,00000	32,00000	43,00000	24,00000	24,00000	45,00000	8,00000	22,00000									
Betzigau	25,00000	0,00000	19,00000	16,00000	19,00000	4,00000	21,00000	28,00000	38,00000	16,00000	27,00000	31,00000	16,00000	35,00000	17,00000	24,00000	19,00000	34,00000	29,00000	29,00000	14,00000	25,00000	13,00000	30,00000	27,00000	17,00000	4,00000								
Buchenberg	16,00000	19,00000	0,00000	20,00000	21,00000	15,00000	31,00000	40,00000	20,00000	12,00000	10,00000	12,00000	9,00000	27,00000	21,00000	34,00000	21,00000	43,00000	36,00000	32,00000	44,00000	8,00000	25,00000	8,00000	26,00000	8,00000	23,00000	8,00000	23,00000						
Bönwang	16,00000	16,00000	20,00000	0,00000	9,00000	16,00000	24,00000	46,00000	38,00000	10,00000	31,00000	32,00000	13,00000	28,00000	43,00000	27,00000	34,00000	29,00000	37,00000	30,00000	44,00000	39,00000	35,00000	16,00000	27,00000	21,00000	18,00000	6,00000							
Dietmannsried	7,00000	19,00000	21,00000	9,00000	0,00000	19,00000	33,00000	49,00000	31,00000	11,00000	12,00000	27,00000	4,00000	27,00000	44,00000	30,00000	37,00000	32,00000	42,00000	42,00000	42,00000	25,00000	36,00000	22,00000	39,00000	29,00000	40,00000	13,00000	15,00000						
Durach	24,00000	6,00000	15,00000	16,00000	19,00000	0,00000	16,00000	35,00000	34,00000	8,00000	26,00000	27,00000	15,00000	12,00000	29,00000	11,00000	18,00000	13,00000	28,00000	23,00000	23,00000	20,00000	31,00000	7,00000	24,00000	23,00000	16,00000	10,00000	10,00000						
Görisried	40,00000	21,00000	31,00000	24,00000	33,00000	16,00000	0,00000	35,00000	50,00000	24,00000	42,00000	43,00000	28,00000	45,00000	22,00000	14,00000	9,00000	24,00000	28,00000	12,00000	8,00000	19,00000	8,00000	23,00000	40,00000	39,00000	17,00000	32,00000	18,00000	18,00000					
Immenstadt	52,00000	38,00000	40,00000	46,00000	49,00000	30,00000	35,00000	0,00000	28,00000	47,00000	44,00000	45,00000	37,00000	45,00000	16,00000	19,00000	28,00000	28,00000	46,00000	45,00000	43,00000	31,00000	32,00000	21,00000	39,00000	18,00000	46,00000	40,00000	40,00000						
Isny	24,00000	38,00000	19,00000	19,00000	31,00000	34,00000	50,00000	29,00000	0,00000	29,00000	29,00000	16,00000	33,00000	30,00000	38,00000	38,00000	52,00000	47,00000	62,00000	35,00000	57,00000	52,00000	43,00000	27,00000	13,00000	46,00000	27,00000	42,00000	42,00000						
Kempten	16,00000	9,00000	12,00000	10,00000	11,00000	8,00000	24,00000	28,00000	29,00000	0,00000	19,00000	22,00000	7,00000	18,00000	16,00000	19,00000	26,00000	21,00000	36,00000	31,00000	22,00000	34,00000	11,00000	26,00000	18,00000	8,00000	9,00000	13,00000	13,00000						
Kimratshofen	8,00000	27,00000	18,00000	21,00000	12,00000	28,00000	42,00000	47,00000	19,00000	18,00000	0,00000	16,00000	14,00000	31,00000	35,00000	37,00000	44,00000	39,00000	54,00000	49,00000	49,00000	37,00000	48,00000	28,00000	26,00000	47,00000	10,00000	27,00000	27,00000						
Kreuzthal	21,00000	31,00000	12,00000	32,00000	27,00000	43,00000	48,00000	44,00000	16,00000	9,00000	0,00000	23,00000	25,00000	42,00000	33,00000	42,00000	45,00000	50,00000	55,00000	45,00000	50,00000	45,00000	46,00000	20,00000	29,00000	20,00000	20,00000	14,00000	35,00000	14,00000	35,00000				
Lauben	9,00000	16,00000	17,00000	15,00000	4,00000	15,00000	31,00000	45,00000	33,00000	7,00000	14,00000	23,00000	0,00000	23,00000	40,00000	26,00000	33,00000	28,00000	43,00000	38,00000	38,00000	29,00000	40,00000	18,00000	35,00000	25,00000	36,00000	9,00000	19,00000	9,00000	19,00000				
Martinzell	29,00000	18,00000	13,00000	26,00000	27,00000	12,00000	28,00000	27,00000	30,00000	16,00000	31,00000	25,00000	23,00000	0,00000	17,00000	8,00000	26,00000	21,00000	36,00000	20,00000	31,00000	32,00000	34,00000	5,00000	17,00000	21,00000	24,00000	21,00000	22,00000	22,00000					
Misser	40,00000	35,00000	30,00000	43,00000	44,00000	29,00000	45,00000	12,00000	16,00000	33,00000	35,00000	32,00000	40,00000	0,00000	25,00000	40,00000	38,00000	50,00000	19,00000	45,00000	49,00000	53,00000	22,00000	9,00000	27,00000	30,00000	38,00000	39,00000	38,00000	39,00000					
Moosbach	35,00000	17,00000	21,00000	27,00000	30,00000	11,00000	22,00000	19,00000	38,00000	18,00000	37,00000	33,00000	26,00000	25,00000	0,00000	18,00000	13,00000	28,00000	12,00000	23,00000	23,00000	30,00000	31,00000	13,00000	25,00000	29,00000	16,00000	27,00000	21,00000	21,00000					
Nesselwang	42,00000	24,00000	33,00000	30,00000	37,00000	19,00000	14,00000	28,00000	52,00000	26,00000	44,00000	45,00000	38,00000	26,00000	18,00000	0,00000	1,00000	10,00000	21,00000	5,00000	22,00000	13,00000	25,00000	25,00000	42,00000	41,00000	10,00000	34,00000	28,00000	28,00000					
Oy	37,00000	16,00000	28,00000	29,00000	32,00000	19,00000	9,00000	26,00000	47,00000	21,00000	29,00000	42,00000	28,00000	21,00000	38,00000	13,00000	5,00000	0,00000	15,00000	19,00000	10,00000	17,00000	18,00000	20,00000	37,00000	36,00000	9,00000	29,00000	23,00000	23,00000					
Pfronten	52,00000	34,00000	43,00000	44,00000	47,00000	28,00000	38,00000	42,00000	62,00000	36,00000	54,00000	55,00000	48,00000	46,00000	30,00000	28,00000	31,00000	22,00000	15,00000	15,00000	32,00000	32,00000	41,00000	51,00000	51,00000	31,00000	44,00000	44,00000	44,00000	44,00000	44,00000	44,00000			
Rettenberg	47,00000	29,00000	33,00000	39,00000	42,00000	23,00000	28,00000	7,00000	35,00000	31,00000	49,00000	45,00000	38,00000	20,00000	19,00000	12,00000	21,00000	0,00000	26,00000	26,00000	36,00000	34,00000	25,00000	28,00000	41,00000	11,00000	39,00000	33,00000	33,00000						
Rückholz	47,00000	29,00000	38,00000	35,00000	42,00000	23,00000	12,00000	33,00000	57,00000	31,00000	49,00000	50,00000	38,00000	31,00000	40,00000	23,00000	21,00000	15,00000	0,00000	19,00000	8,00000	30,00000	47,00000	46,00000	46,00000	15,00000	39,00000	29,00000	29,00000	29,00000					
Unterthingau	32,00000	14,00000	33,00000	33,00000	16,00000	25,00000	20,00000	8,00000	43,00000	52,00000	23,00000	37,00000	45,00000	23,00000	49,00000	30,00000	22,00000	17,00000	32,00000	36,00000	19,00000	0,00000	11,00000	27,00000	44,00000	41,00000	25,00000	31,00000	31,00000	10,00000	10,00000				
Wald	43,00000	29,00000	44,00000	44,00000	27,00000	36,00000	31,00000	8,00000	41,00000	50,00000	34,00000	48,00000	56,00000	40,00000	39,00000	63,00000	31,00000	23,00000	13,00000	18,00000	8,00000	11,00000	0,00000	38,00000	55,00000	52,00000	23,00000	42,00000	42,00000						
Waltenhofen	24,00000	13,00000	8,00000	21,00000	22,00000	1,00000	23,00000	32,00000	27,00000	11,00000	29,00000	20,00000	16,00000	5,00000	13,00000	25,00000	25,00000	20,00000	35,00000	25,00000	30,00000	27,00000	0,00000	17,00000	16,00000	28,00000	16,00000	17,00000	17,00000						
Weitau	37,00000	35,00000	25,00000	30,00000	39,00000	21,00000	40,00000	21,00000	13,00000	29,00000	29,00000	12,00000	17,00000	9,00000	25,00000	42,00000	37,00000	52,00000	29,00000	29,00000	47,00000	44,00000	17,00000	0,00000	24,00000	35,00000	34,00000	34,00000	34,00000	34,00000					
Wengen	24,00000	27,00000	8,00000	29,00000	29,00000	23,00000	39,00000	39,00000	29,00000	11,00000	18,00000	18,00000	29,00000	20,00000	21,00000	27,00000	29,00000	41,00000	46,00000	41,00000	41,00000	51,00000	21,00000	0,00000	44,0000										