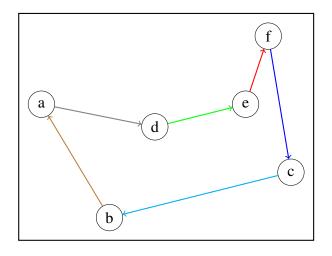
# 2. Übung

# Timo Bergerbusch 344408 & Marc Burian 344300 26.10.2017

## 1 Aufgabe

#### 1.1 a)



Farbe	Knoten	Dist	hinzu	f(x')
gray	d	51	(a,d)	51
green	e	41	(d,e)	92
red	f	32	(e,f)	124
blue	c	61	(f,c)	185
cyan	b	82	(c,b)	267
brown	a	58	(b,a)	325

#### **1.2** b)

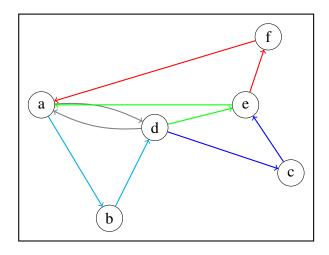


Figure 1: Iterationsweise

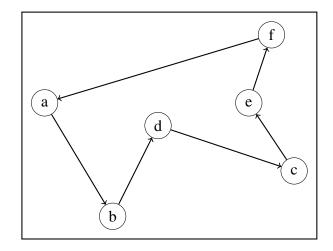
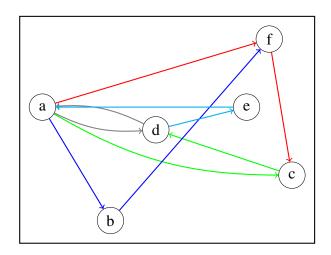


Figure 2: Final

Farbe	Knoten	über	Dist	vorher	nachher	löschen	hinzu	f(x')
gray	d	a	51	-	-	-	(a,d),(d,a)	102
green	e	d	41	102-51+90+41=182	102-51+41+90=182	(d,a)	(d,e),(e,a)	182
red	f	e	32	182-41+64+32=237	182-90+32+104=228	(e,a)	(e,f),(f,a)	228
blue	c	e	36	228-41+63+36=286	228-32+36+61=293	(d,e)	(d,c),(c,e)	286
cyan	b	d	45	286-51+58+45=338	286-63+45+82=350	(a,d)	(a,b),(b,d)	338

#### 1.3 c)



a e c

Figure 3: Iterationsweise

Figure 4: Final

Farbe	Knoten	über	Dist	vorher	nachher	löschen	hinzu	f(x')
gray	d	a	51	-	-	-	(a,d),(d,a)	102
green	c	a	114	102-51+63+114=228	102-51+114+63=228	(a,d)	(a,c),(c,d)	228
red	f	a	104	228-51+64+104=345	228-114+104+61=279	(a,c)	(a,f),(f,c)	279
blue	b	f	106	279-104+58+106=339	279-61+106+82=406	(a,f)	(a,b),(b,f)	339
cyan	e	a	90	339-51+41+90=419	339-58+90+78=449	(d,a)	(d,e),(e,a)	351

#### 1.4 d)

• *Nearest-Neighbor*:  $\frac{325}{323} = 1.0062$ 

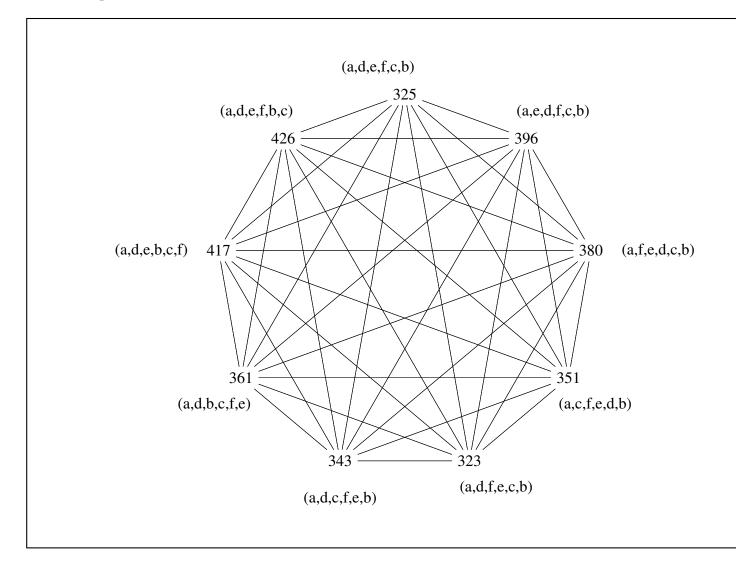
• *Nearest-Insertion*:  $\frac{338}{323} = 1.0464$ 

• Farthest-Insertion:  $\frac{351}{323} = 1.0867$ 



### 2 Aufgabe







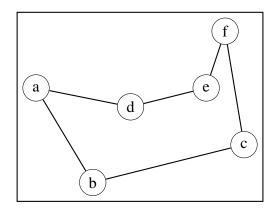


Figure 5: (a,d,e,f,c,b)

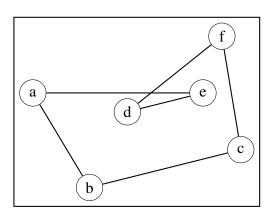


Figure 9: (a,e,d,f,c,b)

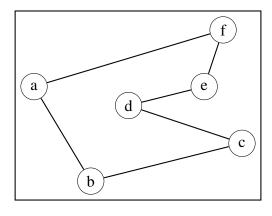


Figure 6: (a,f,e,d,c,b)

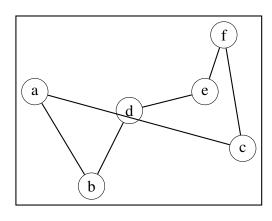


Figure 10: (a,c,f,e,d,b)

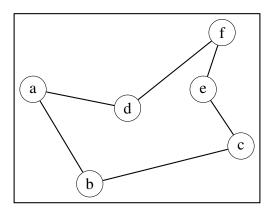


Figure 7: (a,d,f,e,c,b)

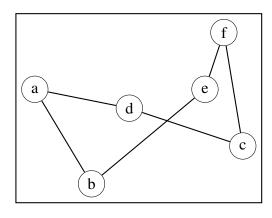


Figure 11: (a,d,c,f,e,b)

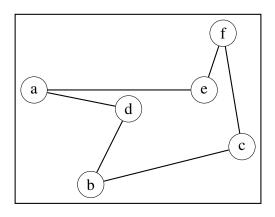


Figure 8: (a,d,b,c,f,e)

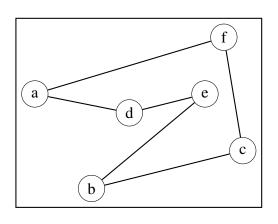


Figure 12: (a,d,e,b,c,f)

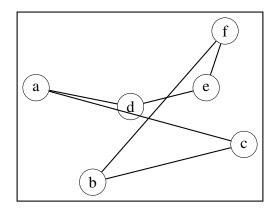


Figure 13: (a,d,e,f,b,c)