Appendix

TSPLIB

All our sample problem instances have been taken from the library TSPLIB, which is a publicly available set of TSP and vehicle routing problem data. It comprises most of the problem instances for which computational results have been published. The reader is invited to conduct own experiments with this test set. A detailed description is Reinelt (1991a).

Access

TSPLIB is electronically distributed and is available at Konrad-Zuse-Zentrum für Informationstechnik Berlin (ZIB) where data for various mathematical programming problems is collected. We give the instructions for using the `eLib` service at ZIB.
Data files are arranged in a two level directory structure. There is an `index` file in each directory that contains names of available files or subdirectories, `info` files contain descriptions of data formats, `readme` files containing more information are usually included in specific problem libraries.
All files can be obtained by e-mail, by anonymous ftp, or interactively via the ZIB electronic mail library service `eLib`. The respective addresses are:

E-mail:

    elib@ZIB-Berlin.de

Datex-P:

    +45050939033 (WIN)
    +2043623939033 (IXI)

Internet:

    telnet elib.zib-berlin.de (130.73.108.11)
    rlogin elib.zib-berlin.de (130.73.108.11) (login as elib; no password is required)
    gopher elib.zib-berlin.de (130.73.108.11)
    anonymous ftp elib.zib-berlin.de (130.73.108.11)

In remote dialogue mode, `eLib` provides a command line interface and selection menus for browsing files. File selections are offered in top-down fashion according to directory structure. Select `MP-TESTDATA` at the top level menu displayed after login. Use the SEND command for obtaining a local copy of a file, it will be sent to you by e-mail in response. When using ftp, cd to `pub/mp-testdata/tsp`.
Help information on how to use `eLib` is provided online or can be obtained by sending a mail just containing "help" to `elib@ZIB-Berlin.de`.

G. Reinelt: The Traveling Salesman, LNCS 840, pp. 211-213, 1994.

Status of Problems

We give the current status of the symmetric TSP instances in TSPLIB. Distance types are described in REINELT (1991a)

Name	#cities	Type	Bounds
ali535	535	GEO	**202310**
att48	48	ATT	**10628**
att532	532	ATT	**27686**
bayg29	29	GEO	**1610**
bays29	29	GEO	**2020**
bier127	127	EUC_2D	**118282**
brazil58	58	MATRIX	**25395**
brd14051	14051	EUC_2D	[465044,479357]
burma14	14	GEO	**3323**
d198	198	EUC_2D	**15780**
d493	493	EUC_2D	**35002**
d657	657	EUC_2D	**48912**
d1291	1291	EUC_2D	**50801**
d1655	1655	EUC_2D	**62128**
d2103	2103	EUC_2D	[79743,80259]
d18512	18512	EUC_2D	[644470,651320]
dantzig42	42	MATRIX	**699**
dsj1000	1000	EUC_2D	**18659688**
eil51	51	EUC_2D	**426**
eil76	76	EUC_2D	**538**
eil101	101	EUC_2D	**629**
fl417	417	EUC_2D	**11861**
fl1400	1400	EUC_2D	[19849,20127]
fl1577	1577	EUC_2D	[22137,22249]
fl3795	3795	EUC_2D	[28594,28772]
fnl4461	4461	EUC_2D	**182566**
gil262	262	EUC_2D	**2378**
gr17	17	MATRIX	**2085**
gr21	21	MATRIX	**2707**
gr24	24	MATRIX	**1272**
gr48	48	MATRIX	**5046**
gr96	96	GEO	**55209**
gr120	120	MATRIX	**6942**
gr137	137	GEO	**69853**
gr202	202	GEO	**40160**
gr229	229	GEO	**134602**
gr431	431	GEO	**171414**
gr666	666	GEO	**294358**
hk48	48	MATRIX	**11461**
kroA100	100	EUC_2D	**21282**
kroB100	100	EUC_2D	**22141**
kroC100	100	EUC_2D	**20749**
kroD100	100	EUC_2D	**21294**
kroE100	100	EUC_2D	**22068**

Table 13.1 Symmetric traveling salesman problems (Part I)

Name	#cities	Type	Bounds
kroA150	150	EUC_2D	**26524**
kroB150	150	EUC_2D	**26130**
kroA200	200	EUC_2D	**29368**
kroB200	200	EUC_2D	**29437**
lin105	105	EUC_2D	**14379**
lin318	318	EUC_2D	**42029**
linhp318	318	EUC_2D	**41345**
nrw1379	1379	EUC_2D	**56638**
p654	654	EUC_2D	**34643**
pcb442	442	EUC_2D	**50778**
pcb1173	1173	EUC_2D	**56892**
pcb3038	3038	EUC_2D	**137694**
pla7397	7397	CEIL_2D	[23076619,23262472]
pla33810	33810	CEIL_2D	[65667327,66138592]
pla85900	85900	CEIL_2D	[141603586,142514146]
pr76	76	EUC_2D	**108159**
pr107	107	EUC_2D	**44303**
pr124	124	EUC_2D	**59030**
pr136	136	EUC_2D	**96772**
pr144	144	EUC_2D	**58537**
pr152	152	EUC_2D	**73682**
pr226	226	EUC_2D	**80369**
pr264	264	EUC_2D	**49135**
pr299	299	EUC_2D	**48191**
pr439	439	EUC_2D	**107217**
pr1002	1002	EUC_2D	**259045**
pr2392	2392	EUC_2D	**378032**
rat99	99	EUC_2D	**1211**
rat195	195	EUC_2D	**2323**
rat575	575	EUC_2D	**6773**
rat783	783	EUC_2D	**8806**
rd100	100	EUC_2D	**7910**
rd400	400	EUC_2D	**15281**
rl1304	1304	EUC_2D	**252948**
rl1323	1323	EUC_2D	**270199**
rl1889	1889	EUC_2D	**316536**
rl5915	5915	EUC_2D	[563416,565585]
rl5934	5934	EUC_2D	[554070,556146]
rl11849	11849	EUC_2D	[920847,923473]
st70	70	EUC_2D	**675**
swiss42	42	MATRIX	**1273**
ts225	225	EUC_2D	**126643**
u159	159	EUC_2D	**42080**
u574	574	EUC_2D	**36905**
u724	724	EUC_2D	**41910**
u1060	1060	EUC_2D	**224094**
u1432	1432	EUC_2D	**152970**
u1817	1817	EUC_2D	**57201**
u2152	2152	EUC_2D	[64163,64294]
u2319	2319	EUC_2D	[234256,234519]
vm1084	1084	EUC_2D	**239297**
vm1748	1748	EUC_2D	**336556**

Table 13.1 Symmetric traveling salesman problems (Part II)

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