

# OR-Library

## Appendix 1

### J E Beasley

OR-Library is a collection of test data sets for a variety of OR problems.

A full list of the test data sets available in OR-Library can be found [here](#).

## Generalised assignment problem

There are 16 data files.

The first 12 data files are gap1, gap2, ..., gap12.

The problems in these data files were used in:

I.H. Osman, "Heuristics for the Generalised Assignment Problem: Simulated Annealing and Tabu Search Approaches", OR Spektrum, Volume 17, 211-225, 1995

D. Cattrysse, M. Salomon and L.N. Van Wassenhove, "A set partitioning heuristic for the generalized assignment problem", European Journal of Operational Research, Volume 72, 167-174, 1994

The format for each of these data files is:

```
number of different problem sets (P)
for each problem set p (p=1,...,P) in turn:
number of agents (m), number of jobs (n)
for each agent i (i=1,...,m) in turn:
    cost of allocating job j to agent i (j=1,...,n)
for each agent i (i=1,...,m) in turn:
    resource consumed in allocating job j to agent i (j=1,...,n)
resource capacity of agent i (i=1,...,m)
```

The problems in each data file have an associated notation as follows:

c515-1 : denotes a problem of type c with 5-agents and 15-jobs, problem number 1 in a group of problems of the same size.

The optimal solution values are given below for these problems when solved as maximisation problems.

gap1		gap2		gap3		gap4
c515-1 336	c520-1 434	c525-1 580	c530-1 656			
c515-2 327	c520-2 436	c525-2 564	c530-2 644			
c515-3 339	c520-3 420	c525-3 573	c530-3 673			
c515-4 341	c520-4 419	c525-4 570	c530-4 647			
c515-5 326	c520-5 428	c525-5 564	c530-5 664			
gap5	gap6	gap7	gap8			
c824-1 563	c832-1 761	c840-1 942	c848-1 1133			
c824-2 558	c832-2 759	c840-2 949	c848-2 1134			
c824-3 564	c832-3 758	c840-3 968	c848-3 1141			
c824-4 568	c832-4 752	c840-4 945	c848-4 1117			
c824-5 559	c832-5 747	c840-5 951	c848-5 1127			
gap9	gap10	gap11	gap12			
c1030-1 709	c1040-1 958	c1050-1 1139	c1060-1 1451			

c1030-2	717	c1040-2	963	c1050-2	1178	c1060-2	1449
c1030-3	712	c1040-3	960	c1050-3	1195	c1060-3	1433
c1030-4	723	c1040-4	947	c1050-4	1171	c1060-4	1447
c1030-5	706	c1040-5	947	c1050-5	1171	c1060-5	1446

The largest file is gap12 of size 20Kb (approximately).

The final four data files are gapa, gapb, gapc and gapd.

The problems in these data files were used in:

P C Chu and J E Beasley "A genetic algorithm for the generalised assignment problem", Computers and Operations Research, Volume 24, pages 17-23, 1997.

The format of these data files is as given above.

File gapa contains type A problems

File gapb contains type B problems

File gapc contains type C problems

File gapd contains type D problems

The problems in these files are minimisation problems.

The largest file is gapd of size 67Kb (approximately).

The entire set of 16 files is of size 400Kb (approximately).

Click [here](#) to access these files

## OTHER SOURCES

More generalised assignment instances can be found [here](#)