

# DAPTLIB

(format description)

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In order enable a fair comparison of different heuristics and other approaches for the data arrangement problem on regular trees *DAPT* we provide a library of graphs which we used to test the heuristics and the lower bound we proposed for this problem in our paper “Heuristics for the data arrangement problem on regular trees”.

**Data format** All graphs are given in the same *XML* data format which should be easy to use together with the *XML parsers* provided for the most common programming languages. A validation file “IOConfiguration.xsd” is also provided.

As an illustration consider the undirected graph in Figure 1. Listing 1

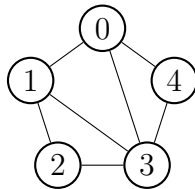


Figure 1: *Graph*.

shows the corresponding XML-file. Lines No. 1 and 2 define the parameters of the *XML* file – e.g. the *version* and the *encoding*. The following tag (line No. 3) specifies the *root element* and has to be “*graph*”.

The next entries define the *name*, *author* and the *description* of the *graph*. Note that all these tags have to be defined and that their relative order is not allowed to vary.

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Finally, each vertex (tags *vertex*) contains the list of all emanating edges. These edges are defined by the tags *edge* (see e.g. the line No. 8). Each edge contains the identifier of the other vertex incident to that edge. The vertex identifiers are defined by their relative order (starting from 0). Note that the cardinality of the vertex set is defined implicitly by the number of *vertex* tags contained in the file. Finally, all edges are defined twice (from *i* to *j* and from *j* to *i*).

```
1<?xml version="1.0" encoding="UTF-8"
2  standalone="no"?>
3<graph>
4  <name>CE_sample</name>
5  <author>Eranda Cela and Rostislav Stanek</author>
6  <description>A sample graph.</description>
7  <vertex>
8    <edge>1</edge>
9    <edge>3</edge>
10   <edge>4</edge>
11 </vertex>
12 <vertex>
13   <edge>0</edge>
14   <edge>2</edge>
15   <edge>3</edge>
16 </vertex>
17 <vertex>
18   <edge>1</edge>
19   <edge>3</edge>
20 </vertex>
21 <vertex>
22   <edge>0</edge>
23   <edge>1</edge>
24   <edge>2</edge>
25   <edge>4</edge>
26 </vertex>
27 <vertex>
28   <edge>0</edge>
29   <edge>3</edge>
30 </vertex>
31</graph>
```

Listing 1: *Graph*.