

$$c[i, k] - v[k] = \min \{c[i, j] - v[j] \mid j = 1 \dots n\}.$$

7. A Pascal Implementation

Listings of the Fortran code for dense LAPs and of the Pascal and Fortran code for sparse LAPs can be obtained from the authors on request.

v : dual column variables}

```
col, d, free, pred: vec;
```

$$(k = \text{up} \dots n);$$

last: last column in col-array with $d[j] < \min.$

```

      for  $i := 1$  to  $n$  do  $x[i] := 0$ ;

```

```

end;
if f = 0 then cnt := 2 else
  cnt := 0;

```

```
{### AUGMENTING ROW REDUCTION}
```

```
{ ## routine applied twice}
```

{### AUGMENTATION}

```
{ ## initialize  $d$ - and pred-array}
```

```
{ ## find columns with new value for minimum d}
```

$$j := \text{col}[k]; h := d$$

if $h \leq \min$ then