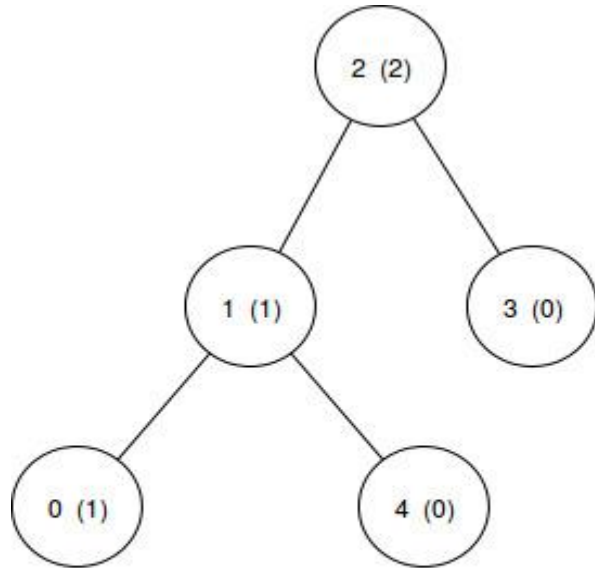


SPY UNION

Izabela Kolibska, Aleksandra Maciążek, Dagmara Studniarek

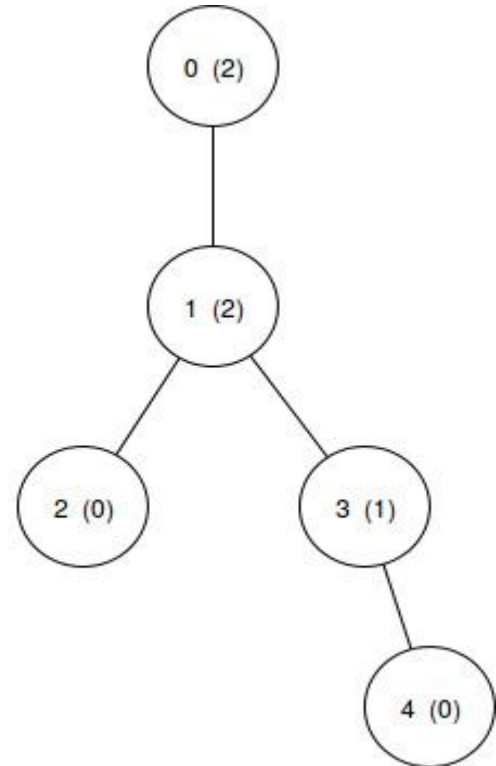
19.06.2017r.

SPY UNION - PRZYKŁADOWY PROBLEM:



WSA

UNION



PROGRAM CAŁKOWITOLICZBOWY:

$$\min x_0 + x_1 + x_2 + x_3 + x_4$$

Subject to:

$$x_0 \geq 1$$

$$x_0 + x_1 + x_2 + x_3 + x_4 \geq 2$$

$$x_0 + x_1 + x_4 \geq 1$$

$$x_1 + x_2 + x_3 + x_4 \geq 2$$

$$x_0 + x_1 + x_2 + x_3 + x_4 \geq 2$$

$$x_3 \geq 0$$

$$x_3 + x_4 \geq 1$$

$$x_4 \geq 0$$

$$x_4 \geq 0$$

Bounds:

$$1 \geq x_0 \geq 0$$

$$1 \geq x_1 \geq 0$$

$$1 \geq x_2 \geq 0$$

$$1 \geq x_3 \geq 0$$

$$1 \geq x_4 \geq 0$$

Generals:

$$x_0$$

$$x_1$$

$$x_2$$

$$x_3$$

$$x_4$$

CZAS PRZEPROWADZONYCH TESTOW:

```
TEST 0
real    0m5.668s
user    0m5.033s
sys     0m0.658s
```

```
TEST 1
real    0m5.706s
user    0m5.069s
sys     0m0.666s
```

```
TEST 2
real    0m5.755s
user    0m5.133s
sys     0m0.654s
```

```
TEST 3
real    0m5.839s
user    0m5.198s
sys     0m0.649s
```

```
TEST 4
real    0m6.120s
user    0m5.501s
sys     0m0.649s
```

```
TEST 5
real    0m6.893s
user    0m6.248s
sys     0m0.649s
```

```
TEST 6
real    0m9.360s
user    0m8.703s
sys     0m0.661s
```

```
TEST 7
real    0m21.286s
user    0m20.534s
sys     0m0.739s
```

```
TEST 8
real    1m15.670s
user    1m14.396s
sys     0m1.083s
```

```
TEST 9
real    3m57.028s
user    3m54.114s
sys     0m2.255s
```

```
TEST 10
real    26m42.287s
user    26m23.066s
sys     0m14.329s
```

DZIEKUJEMY ZA UWAGĘ