Shawarma (Shoarma in Dutch)

- We need 3 ingredients: meat, bread and sauce
- For 200 people, so we want a lot
- We consider package deals, but don't know all possible deals (bargaining is possible)
- We want to find the cheapest combination of package deals

Example designed by Paul Bouman



dealer

current amount

price

Total: € ...

 $... \geq 50kg$



...

...

≥ 400



...

...

≥ 20*l*



...



Minimize



JUMBO

10

€8,00

€5,00

Total: € 370

1,5 <i>kg</i>

0.75kg

 \geq 50kg



0



8

≥ 400



0,625



0l

≥ 20*l*



6



Minimize

Can we find a new deal with price c such that, if a_b is the amount of bread and a_s is the amount of sauce, we have $c < 0.625 a_b + 6 a_s$?

OK!

Minimize

< 0,625 a_b + 6 a_s ? al: € 370

I can sell you packages of 2 breads and 0,5 l sauce for \leq 4 (And $0.625 \cdot 2 + 6 \cdot 0.5 > 4$ is valid)

≥ 50.



0



0,625

0,5



6



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Minimize



0l

0,5*l*

 \geq

20*l*

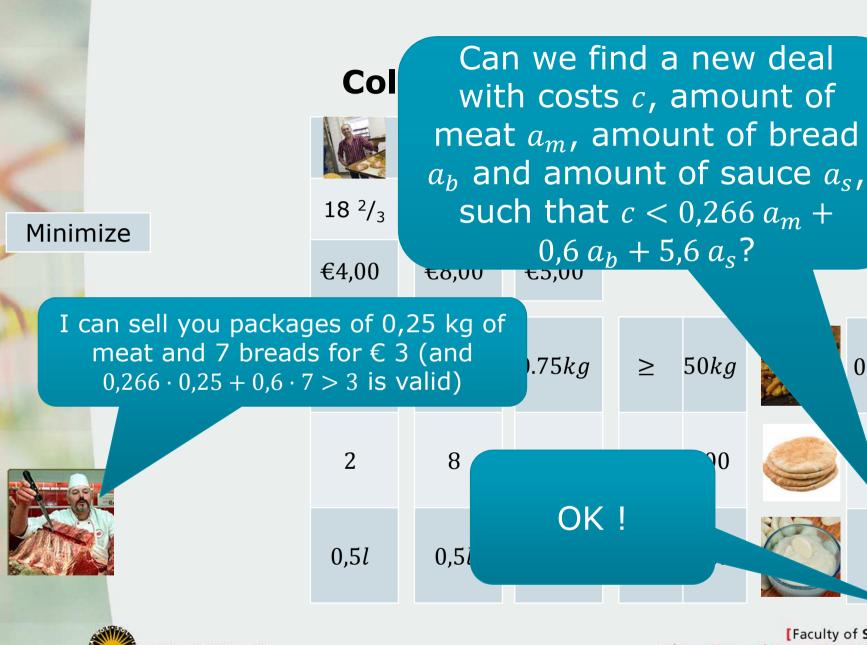


0,5*l*

0,266

0,6

5,6





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0,266

5,6

		on	Јимво
20	10	30	0
€3,00	€4,00	€8,00	€5,00
0,25 <i>kg</i>	0	1,5 <i>kg</i>	0.75 <i>k.g</i>

8

0,5*l*

0,5*l*

8

0l

Total: € 340 50*kg* 1,11

 \geq

 \geq

≥

20*l*





0

Minimize

Do not include all variables (columns), only generate the columns that are necessary

Successful applications:

- Cutting stock
- Personnel rostering
- Crew pairing in airlines (AA)
- Vehicle scheduling for bus companies
- Transportation planning

