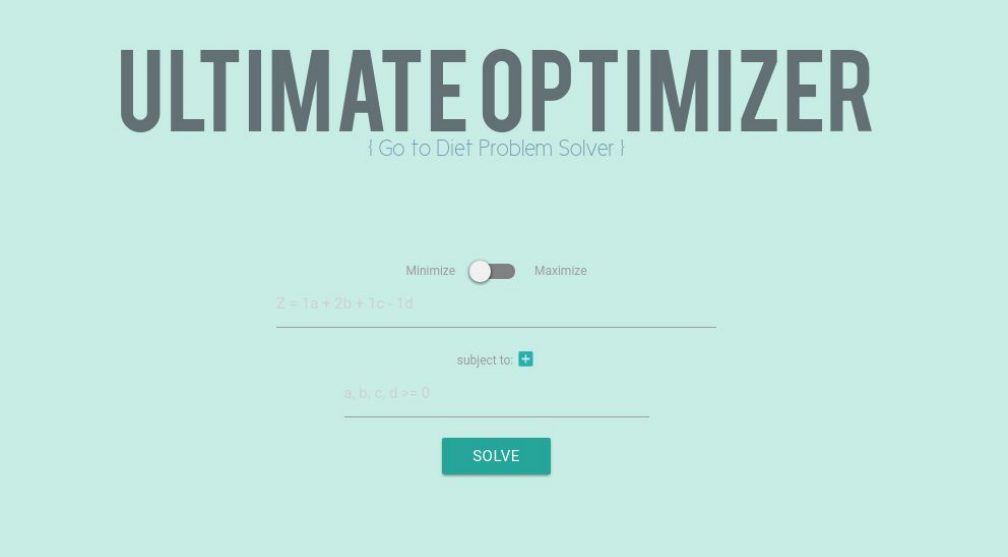


CMSC 150 Ultimate Optimizer and Diet Problem Solver

User Manual

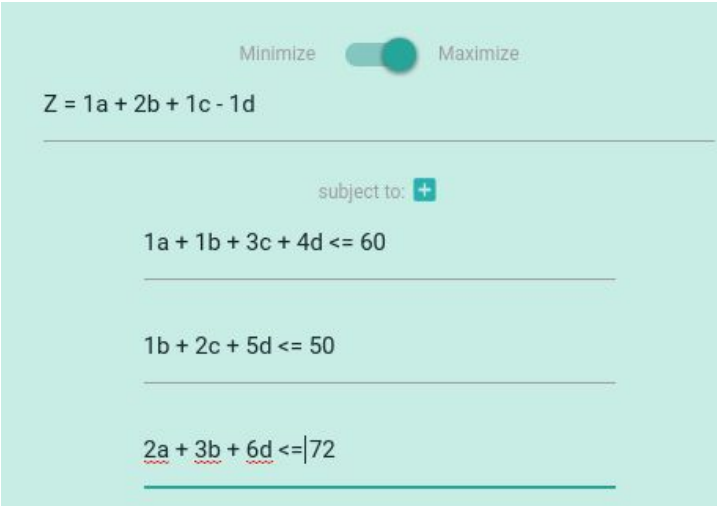
a. Ultimate Optimizer

- i. The web page contains the link to the Diet Problem Solver. The user will input on the form in the center.



The screenshot shows the 'ULTIMATE OPTIMIZER' web interface. At the top, the title 'ULTIMATE OPTIMIZER' is displayed in large, bold, dark blue letters, with a link '(Go to Diet Problem Solver)' underneath it. Below the title, there is a toggle switch for 'Minimize' and 'Maximize'. The 'Minimize' option is selected. The objective function is entered as $Z = 1a + 2b + 1c - 1d$. Below this, there is a 'subject to:' label with a '+' button. The constraints are entered as $a, b, c, d \geq 0$. At the bottom, there is a green 'SOLVE' button.

- ii. It can do both minimization and maximization by toggling the switch. Constraints can be added by clicking the + symbol.



This screenshot shows the 'Ultimate Optimizer' interface with the 'Maximize' toggle selected. The objective function is $Z = 1a + 2b + 1c - 1d$. The 'subject to:' section shows three constraints added by clicking the '+' button: $1a + 1b + 3c + 4d \leq 60$, $1b + 2c + 5d \leq 50$, and $2a + 3b + 6d \leq 72$. Each constraint is displayed on a separate line with a horizontal input field below it.

- iii. Clicking solve will show the initial tableau. The buttons will show the prev/next tableaus.

	a	b	c	d	s1	s2	s3	s4	Z	RHS
<	1	1	3	4	1	0	0	0	0	60
	0	1	2	5	0	1	0	0	0	50
	2	3	0	6	0	0	1	0	0	72
	-1	-2	-1	1	0	0	0	1	0	0
	EDIT INPUT									

>

b. Diet Problem Solver

- i. The web page contains the link to the Diet Problem Solver. The food items are divided to different categories for easier access.

DIET PROBLEM SOLVER

{ Go to Ultimate Optimizer }

VEGETABLES FRUITS BREADS AND PASTRIES PASTA DAIRY AND EGGS MEAT AND FISH CEREAL

☐ Carrots, Raw
☐ Celery, Raw
☐ Frozen Corn
☐ Lettuce, Iceberg, Raw
☐ Peppers, Sweet, Raw

SOLVE

VEGETABLES FRUITS BREADS AND PASTRIES PASTA DAIRY AND EGGS MEAT AND FISH CEREAL

- ii. The foods can be marked by clicking on them. There will also be a table to show its information when the side of the text is clicked.

☒ Carrots, Raw

☐ Celery, Raw

☒ Frozen Corn

☒ Lettuce, Iceberg, Raw

☐ Peppers, Sweet, Raw

SOLVE

☒ Wheat Bread

Price	0.05
Serving Size	1 Sl
Calories	65
Cholesterol	0
Total Fat	1
Sodium	134.5
Carbohydrates	12.4
Fiber	1.3
...	...

SOLVE