

USER MANUAL

How to use the Optimizer

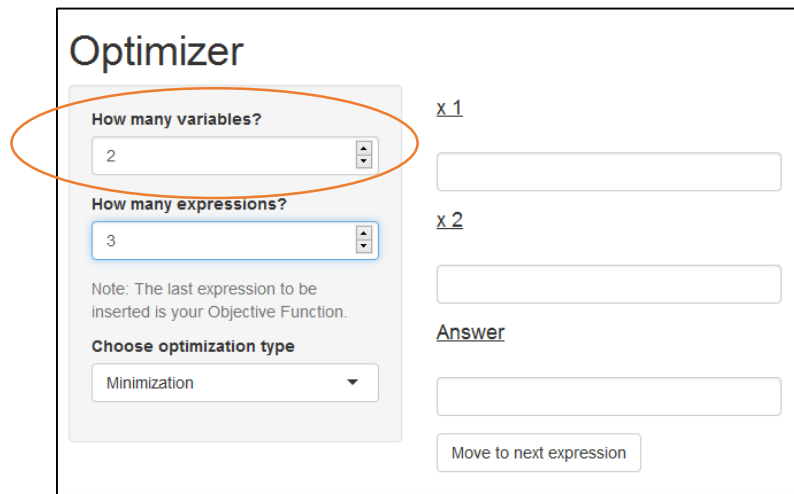
1. Place the no. of variables
2. Place the no. of expressions of your system excluding the objective function
3. Choose the type of optimization (Minimization or Maximization)
4. Insert the values of each expression
5. Insert the values of the objective function

The screenshot shows a web-based interface titled "Optimizer". On the left, a grey sidebar contains three sections: "How many variables?" with a spinner set to 2, "How many expressions?" with a spinner set to 3, and "Choose optimization type" with a dropdown menu set to "Minimization". A note below the expressions section states: "Note: The last expression to be inserted is your Objective Function." To the right of the sidebar, the main panel has three input fields. The first is labeled "x 1", the second "x 2", and the third "Answer". Below these fields is a button labeled "Move to next expression".

Illustration 1

The Optimizer has 2 divisions: side panel and main panel. Left panel asks for the details of the system and the type of optimization that the user intends to use. The main panel contains input text areas for the values of the expressions in the system. The input text areas will adjust depending on the number of variables that will be set.

Changing the no. of variables

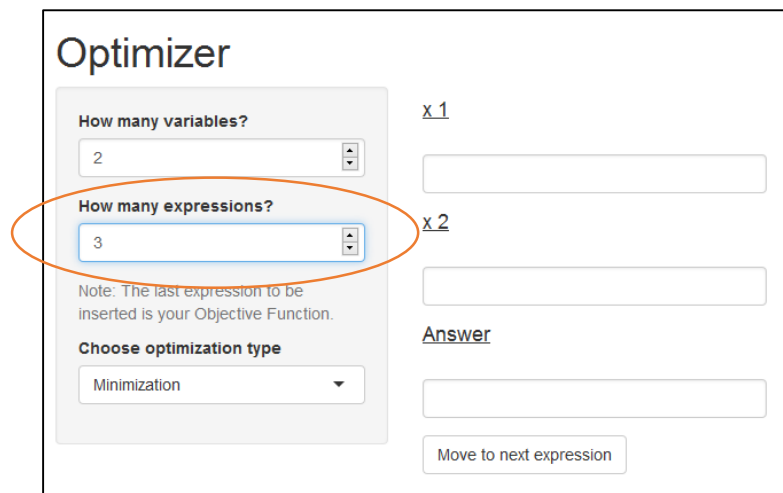


The screenshot shows the 'Optimizer' interface. On the left, there is a grey sidebar with three sections: 'How many variables?' with a numeric input set to 2, 'How many expressions?' with a numeric input set to 3, and 'Choose optimization type' with a dropdown menu set to 'Minimization'. A note below the expressions section states: 'Note: The last expression to be inserted is your Objective Function.' On the right, there are three input fields labeled 'x 1', 'x 2', and 'Answer'. A 'Move to next expression' button is at the bottom right. The 'How many variables?' input field is circled in orange.

Illustration 2

The user can set the no. of variables by adjusting the first numeric input space. The values should not be 0 and negative numbers.

Changing the no. of expressions



This screenshot is identical to the previous one, showing the 'Optimizer' interface. In this instance, the 'How many expressions?' input field, which is set to 3, is circled in orange.

Illustration 3

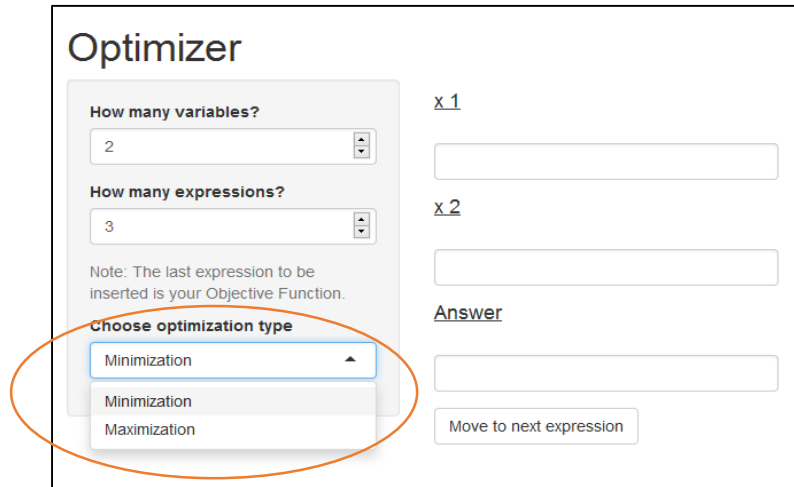
The second numeric space asks for the no. of expressions of the system. This excludes the objective function. For example, given a system of equations:

$$2x + 4y \geq 6 \quad 3x + 7y \geq 5 \quad 6x - 8y \geq 5$$

$$\text{Objective Function: } z = 4x + 56y$$

The system has 3 expressions with 2 variables.

Setting the Optimization Method to be used

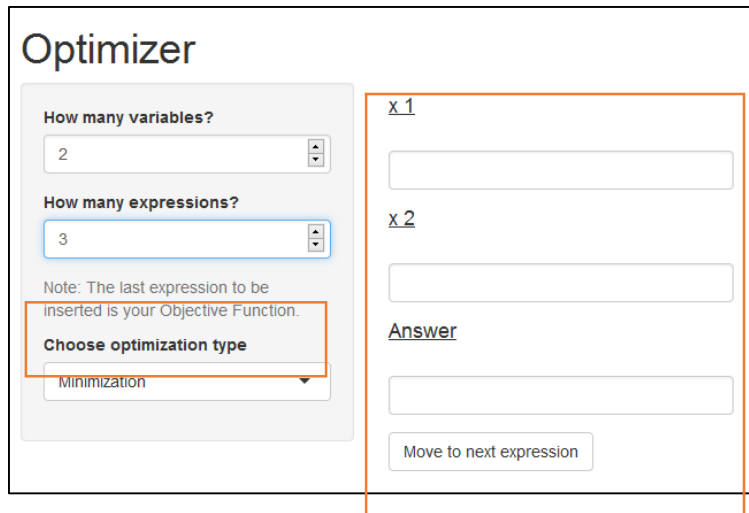


The screenshot shows the 'Optimizer' interface. On the left, there are two dropdown menus: 'How many variables?' set to 2 and 'How many expressions?' set to 3. Below these is a note: 'Note: The last expression to be inserted is your Objective Function.' A 'Choose optimization type' dropdown menu is open, showing 'Minimization' and 'Maximization' options. The 'Minimization' option is highlighted. To the right of the dropdown menu, there are three input fields labeled 'x 1', 'x 2', and 'Answer'. Below the 'Answer' field is a button labeled 'Move to next expression'.

Illustration 4

The user can set the type of optimization method to be used by selecting the dropdown box. The user can choose between Minimization and Maximization.

Forming the system



The screenshot shows the 'Optimizer' interface. On the left, there are two dropdown menus: 'How many variables?' set to 2 and 'How many expressions?' set to 3. Below these is a note: 'Note: The last expression to be inserted is your Objective Function.' A 'Choose optimization type' dropdown menu is open, showing 'Minimization' and 'Maximization' options. The 'Minimization' option is highlighted. To the right of the dropdown menu, there are three input fields labeled 'x 1', 'x 2', and 'Answer'. Below the 'Answer' field is a button labeled 'Move to next expression'.

Illustration 5

The user should add the coefficients of the variables one at a time. Once done with one expression, the user should click the "Move to next expression" to go the next one. Note that the last expression to be inserted is your Objective Function.