PROJECT IN CMSC150

Polynomial Regression | Quadractic Spline Interpolation | Simplex Implementation

Choose file to upload

Browse... No file selected

Estimate [N]:

5

Show Interpolated Value

Show Interval Equations

Show Final Matrix

Polynomial Regression | Quadractic Spline Interpolation | Simplex Implementation

Choose file to upload

Browse... No file selected

Enter degreeVal:

1

Estimate [N]:

1

Show results

Current Iteration at [N]:

1

Show Minimum Cost

Show Tableaus Per Iteration

Final Tableau/Matrix

	W1	W2	W3	W4	W5
DEM:	431.00	332.00	350.00	450.00	400.00

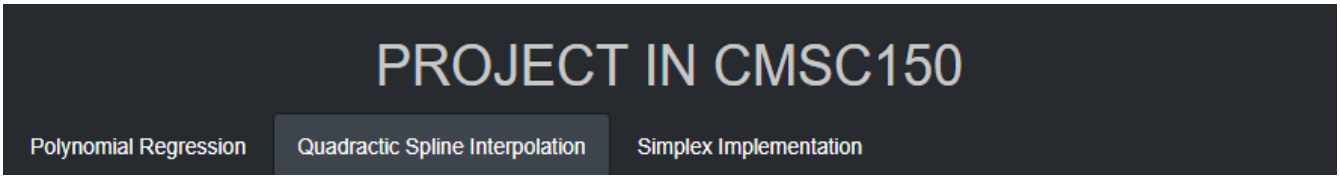
	SUPPLY	W1	W2	W3	W4	W5
P1	1400.00	30.00	29.00	31.00	35.00	33.00
P2	400.00	26.00	24.00	23.00	25.00	27.00
P3	200.00	11.00	13.00	15.00	20.00	17.00

CMSC 150 PROJECT MANUAL

KIRBY M. LEOPARDAS
B3L

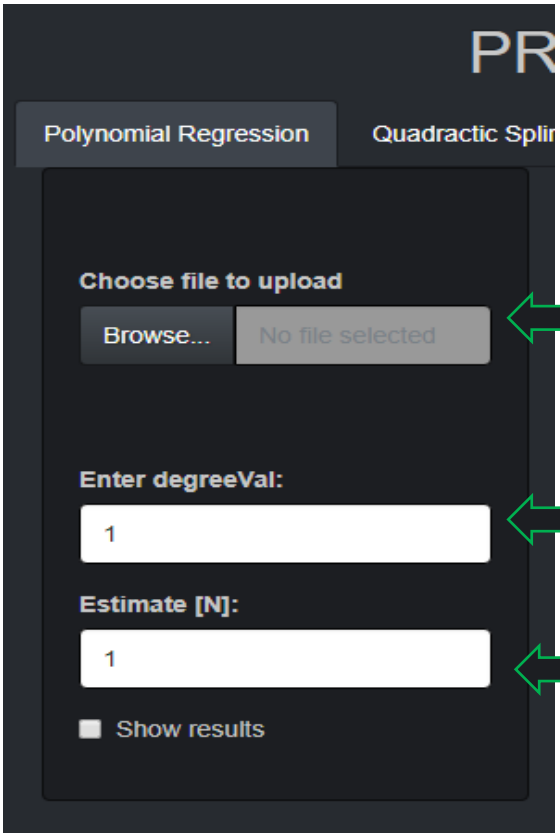
USER'S MANUAL

THE NAVIGATION BAR



This bar contains the three main parts of this project mainly the Polynomial Regression Generic Solver, Quadratic Spline Interpolation Generic Solver, and lastly, the Simplex Method Solver.

POLYNOMIAL REGRESSION

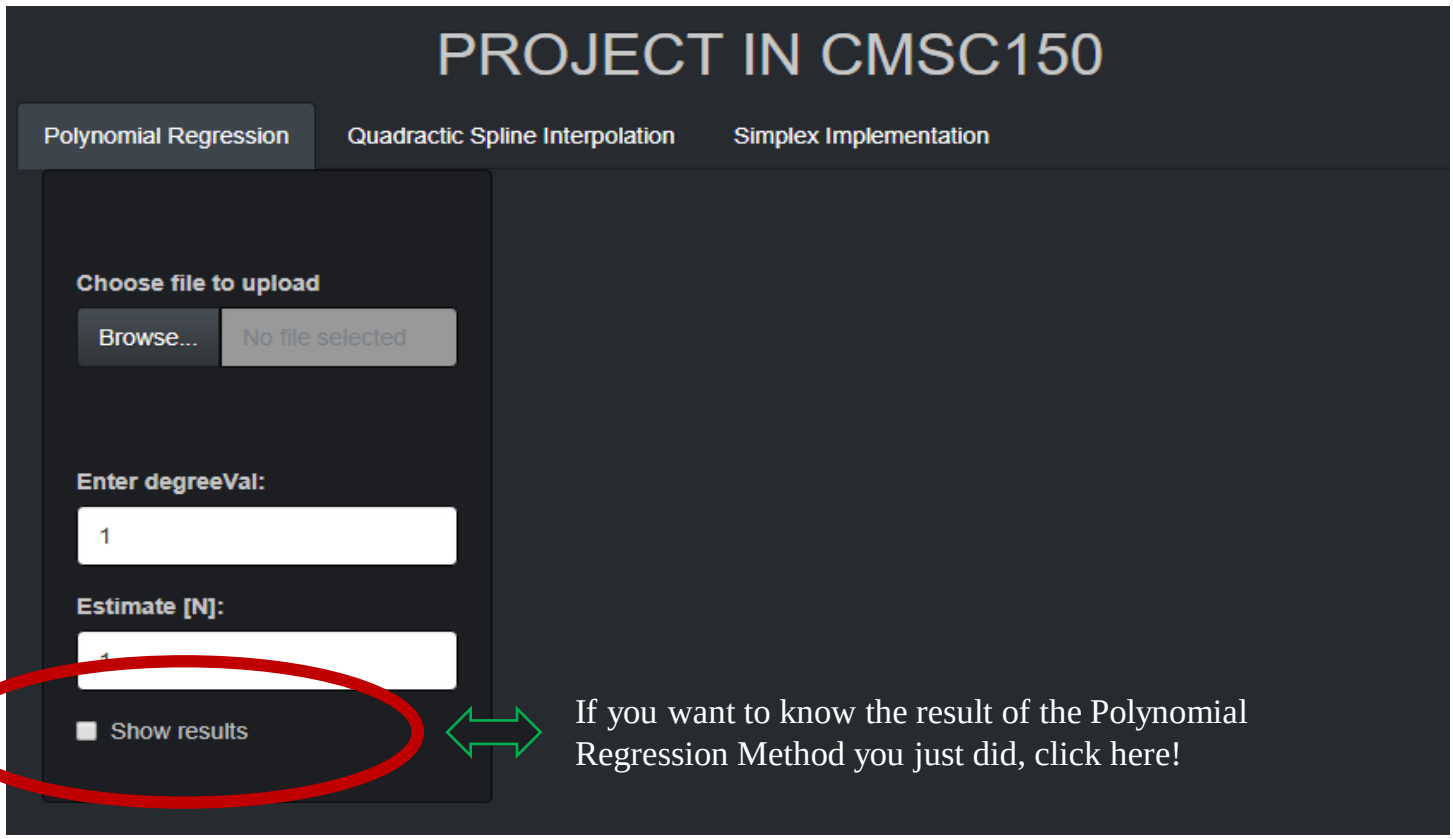


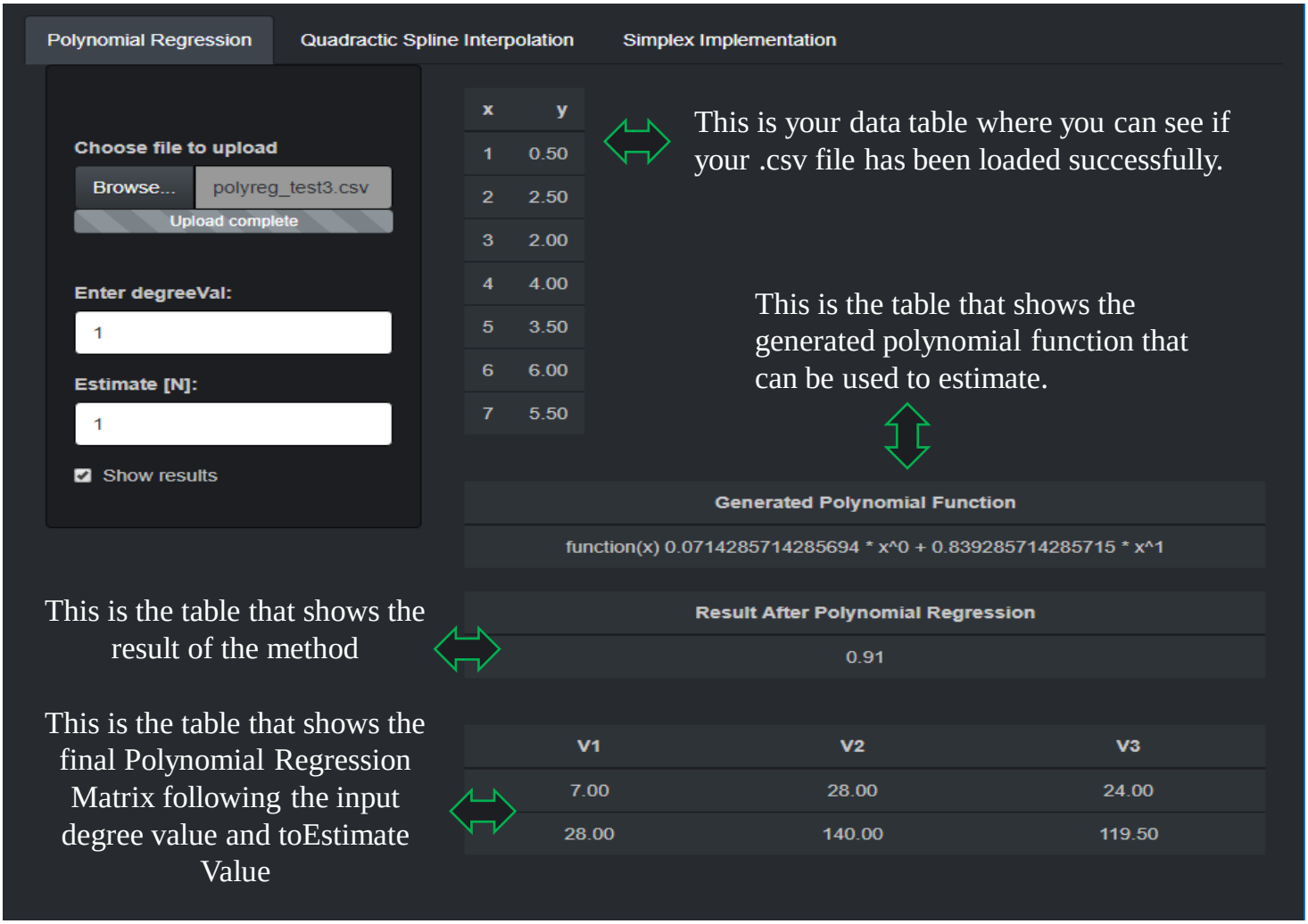
This part is where you can browse for a .csv (comma-separated-values) in your directories and load it as the source of your data

This is where you enter the degree of the Polynomial that will generate a polynomial function that can be used to solve for a given set of data.

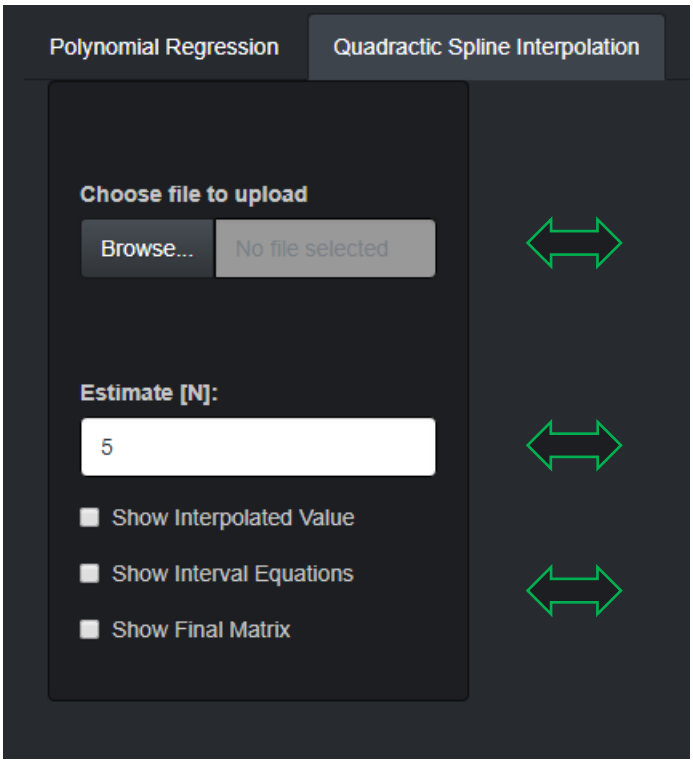
This is where you enter the number you want to estimate using the Polynomial Regression Method

POLYNOMIAL REGRESSION





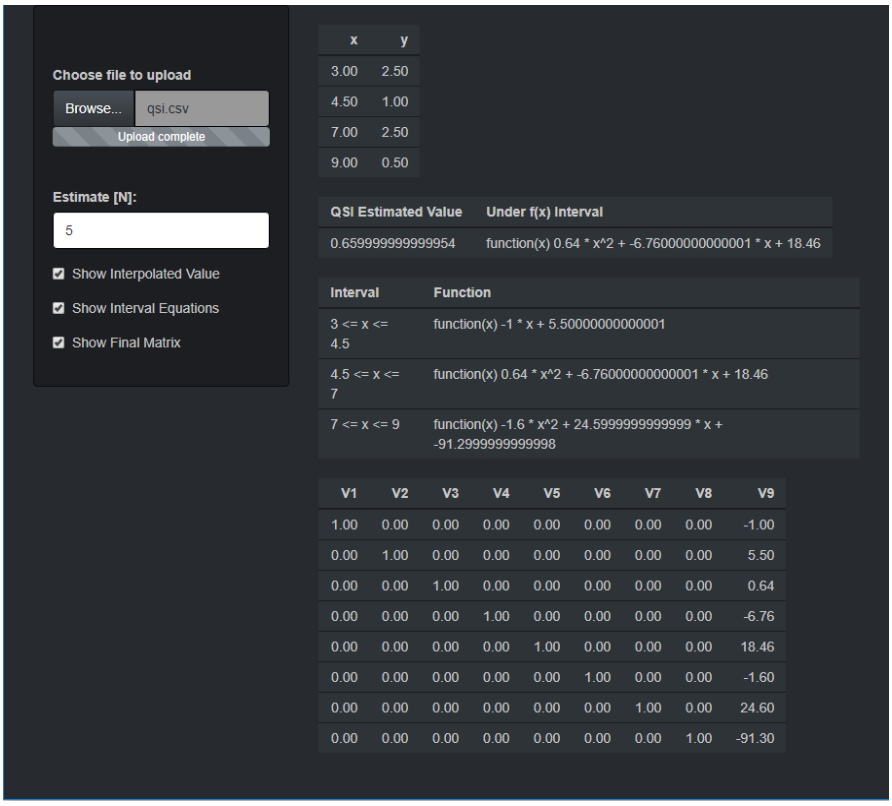
QUADRATIC SPLINE INTERPOLATION



This part is where you can browse for a .csv (comma-separated-values) in your directories and load it as the source of your data

This is where you put the [N] that you want to estimate using the Quadratic Spline Interpolation Method

These checkboxes are the ones that will allow you to see the result of the method. You have 3 choices:
Show the Interpolated Value, Show the Interval Equations, or Show the final Matrix



x	y
3.00	2.50
4.50	1.00
7.00	2.50
9.00	0.50

QSI Estimated Value	Under f(x) Interval
0.659999999999954	function(x) 0.64 * x^2 + -6.76000000000001 * x + 18.46

Interval	Function
3 <= x <= 4.5	function(x) -1 * x + 5.50000000000001
4.5 <= x <= 7	function(x) 0.64 * x^2 + -6.76000000000001 * x + 18.46
7 <= x <= 9	function(x) -1.6 * x^2 + 24.5999999999999 * x + -91.2999999999998

V1	V2	V3	V4	V5	V6	V7	V8	V9
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-1.00
0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.64
0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	-6.76
0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	18.46
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	-1.60
0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	24.60
0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	-91.30

Data table showing the content of the .csv file loaded

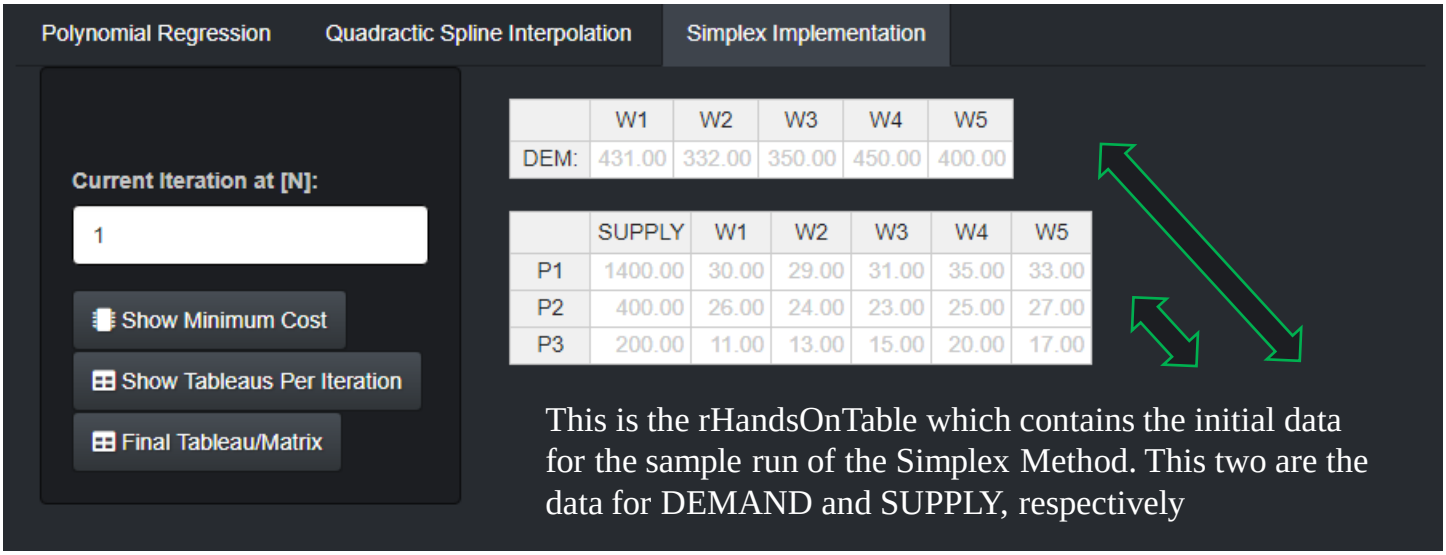
Shows the estimated result and from what interval it was derived from

Shows all the interval equations computed

Shows the final matrix after the Quadratic Spline Interpolation

This is what it looks like if you checked all the checkboxes. It will shows all the results that came from the QSI method implemented on the back end.

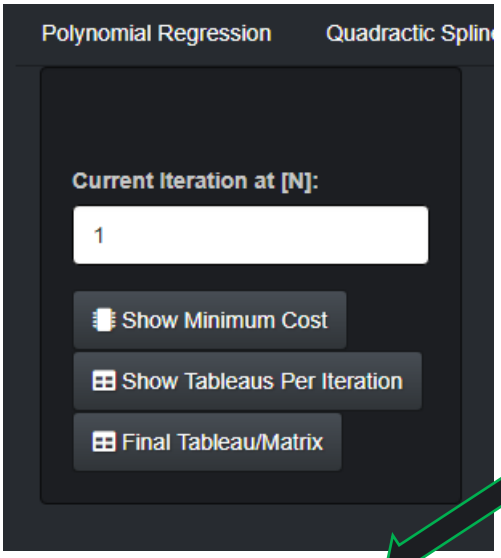
SIMPLEX METHOD



	W1	W2	W3	W4	W5
DEM:	431.00	332.00	350.00	450.00	400.00

	SUPPLY	W1	W2	W3	W4	W5
P1	1400.00	30.00	29.00	31.00	35.00	33.00
P2	400.00	26.00	24.00	23.00	25.00	27.00
P3	200.00	11.00	13.00	15.00	20.00	17.00

This is the rHandsOnTable which contains the initial data for the sample run of the Simplex Method. This two are the data for DEMAND and SUPPLY, respectively



After clicking the Show Minimum Cost Action Button this will show.

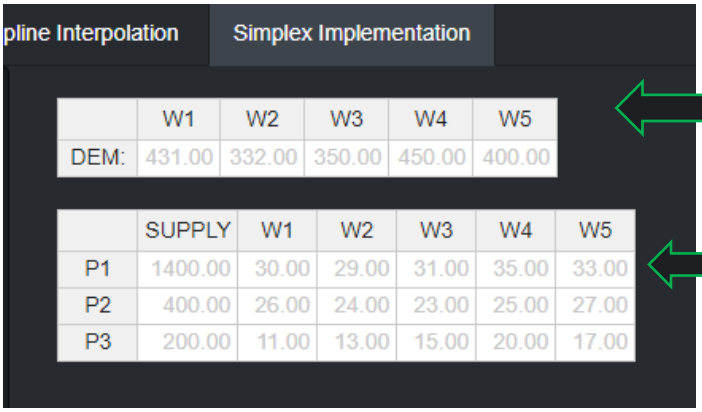
Minimized Cost:	No of Iterations:
54558.00	12.00

	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10
S1	-1.00	-1.00	-1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S2	0.00	0.00	0.00	-1.00	-1.00	-1.00	0.00	0.00	0.00	0.00
S3	0.00	0.00	0.00	0.00	0.00	0.00	-1.00	-1.00	-1.00	0.00
S4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-1.00
S5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S6	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00
S7	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
S8	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Z	30.00	26.00	11.00	29.00	24.00	13.00	31.00	23.00	15.00	35.00

This right here is the table that corresponds to the nth number of iteration of your choice

	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10
S1	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
S2	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00
S3	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
S4	0.00	-1.00	0.00	0.00	-1.00	0.00	0.00	-1.00	0.00	1.00
S5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S6	1.00	1.00	0.00	0.00	0.00	-1.00	0.00	0.00	-1.00	0.00
S7	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
S8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

This is this table which is the final table after implementing the simplex method.



	W1	W2	W3	W4	W5
DEM:	431.00	332.00	350.00	450.00	400.00

	SUPPLY	W1	W2	W3	W4	W5
P1	1400.00	30.00	29.00	31.00	35.00	33.00
P2	400.00	26.00	24.00	23.00	25.00	27.00
P3	200.00	11.00	13.00	15.00	20.00	17.00

Lastly, you can edit the first two tables (DEMAND AND SUPPLY) by clicking it and putting an input of your choice.

Then Click the buttons again to see the changes. That's all for this shinyApp.