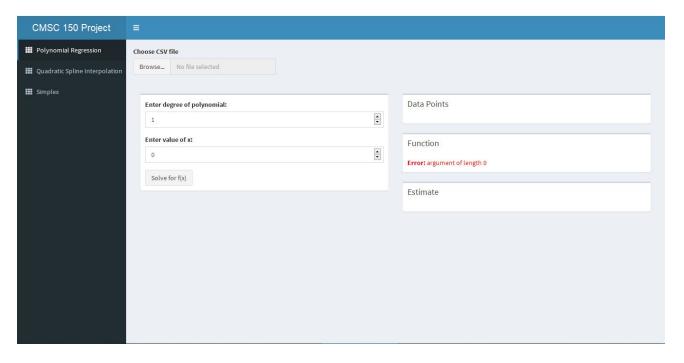# CMSC 150 Project Manual
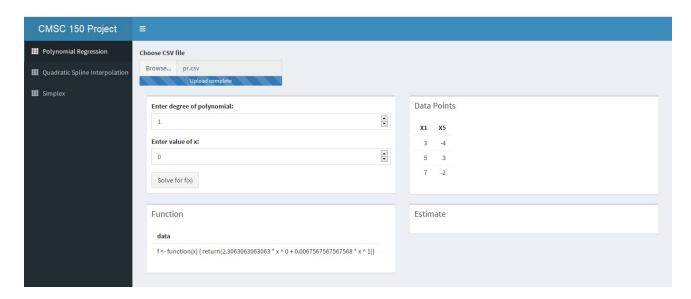
Stephanie Legaspi 2015-00649

CMSC 150 B-5L

1. Polynomial Regression
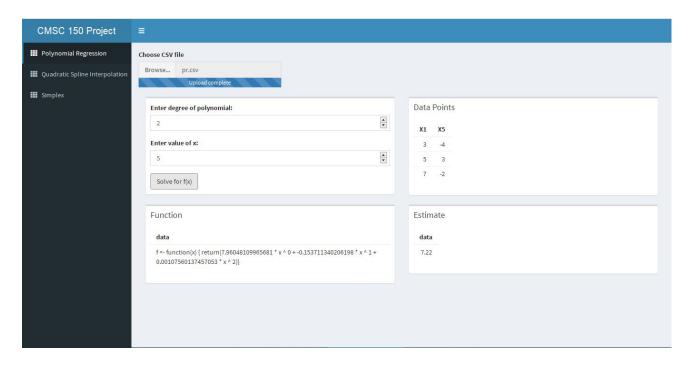
Initial User Interface

Upload a CSV file

You can upload a CSV file by clicking the "Browse" button and choosing a file with CSV format.

Compute for f(x)

In order to compute for f(x), you must first enter a value of x on the "Enter value of x: " field and click the "Solve for f(x)" button. You can also modify the degree of the polynomial by entering a degree on The field "Enter degree of polynomial".

CMSC 150 Project ≡

- Polynomial Regression
- Quadratic Spline Interpolation
- Simplex

Choose CSV file
Browse... pr.csv
Upload complete

Enter degree of polynomial:
2

Enter value of x:
5

Solve for f(x)

Data Points

X1	X5
3	-4
5	3
7	-2

Function

data

f <- function(x) { return(7.96048109965681 * x ^ 0 + -0.153711340206198 * x ^ 1 + 0.00107560137457053 * x ^ 2)}

Estimate

data

7.22

2. Quadratic Spline Interpolation

Initial User Interface

CMSC 150 Project ≡

- Polynomial Regression
- Quadratic Spline Interpolation
- Simplex

Choose CSV file
Browse... No file selected

Enter value of x:
0

Solve for f(x)

Show function for interval

Data Points

Functions per Interval

Error: argument of length 0

Estimate

Interval Function

Upload a CSV file

You can upload a CSV file by clicking the "Browse" button and choosing a file with CSV format.

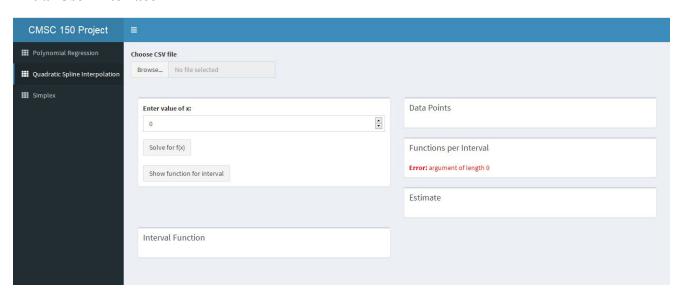## Show f(x) for the interval and Compute for f(x)

Enter a value of x on the "Enter value of x: " field. Click the "Solve for f(x)" to compute for f(x) and click the "Show function for interval" button to show f(x) for the given interval.

3. Simplex Method (Minimization)

Initial User Interface

Perform Simplex Method
In order to perform simplex method on the given input on the table, click the "Solve" button and then the resulting values will appear on the table on the right.

Show Tableau for a Specific Iteration
The simplex method for minimization has two phases. You can view specific iteration per phase by entering a value on the "Enter Iteration" field.

Phase One

x1	x2	x3	x4	x5	x6	x7	x8	x9	x10	x11	x12	x13	x14	x15	s1	s2	s3	s4	s5	s6	s7	s8	Z
1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	-1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	2
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	2
-1.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	-1
0.00	-1.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	-
0.00	0.00	-1.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	-2
0.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	-1
-0.00	-0.00	-0.00	-0.00	1.00	-0.00	-0.00	-0.00	-0.00	1.00	-0.00	-0.00	-0.00	-0.00	1.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-1.00	-0.00	2
10.00	8.00	6.00	5.00	0.00	6.00	5.00	4.00	3.00	2.00	3.00	4.00	5.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	1.00	-8

Phase Two

x1	x2	x3	x4	x5	x6	x7	x8	x9	x10	x11	x12	x13	x14	x15	s1	s2	s3	s4	s5	s6	s7	s8	Z	RHS
0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	80.00
1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	0.00	180.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	10.00
1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	-1.00	-1.00	0.00	0.00	-1.00	-1.00	-1.00	-1.00	0.00	0.00	0.00	180.00
-1.00	-1.00	-1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	80.00
-1.00	-1.00	0.00	0.00	0.00	-1.00	-1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	20.00
1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	-1.00	0.00	-1.00	0.00	-1.00	-1.00	-1.00	-1.00	-1.00	0.00	80.00
0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	-1.00	0.00	0.00	0.00	0.00	0.00	-1.00	0.00	220.00
6.00	3.00	0.00	0.00	0.00	4.00	2.00	0.00	0.00	4.00	0.00	0.00	0.00	1.00	6.00	0.00	2.00	1.00	4.00	5.00	6.00	5.00	4.00	1.00	-3200.00