

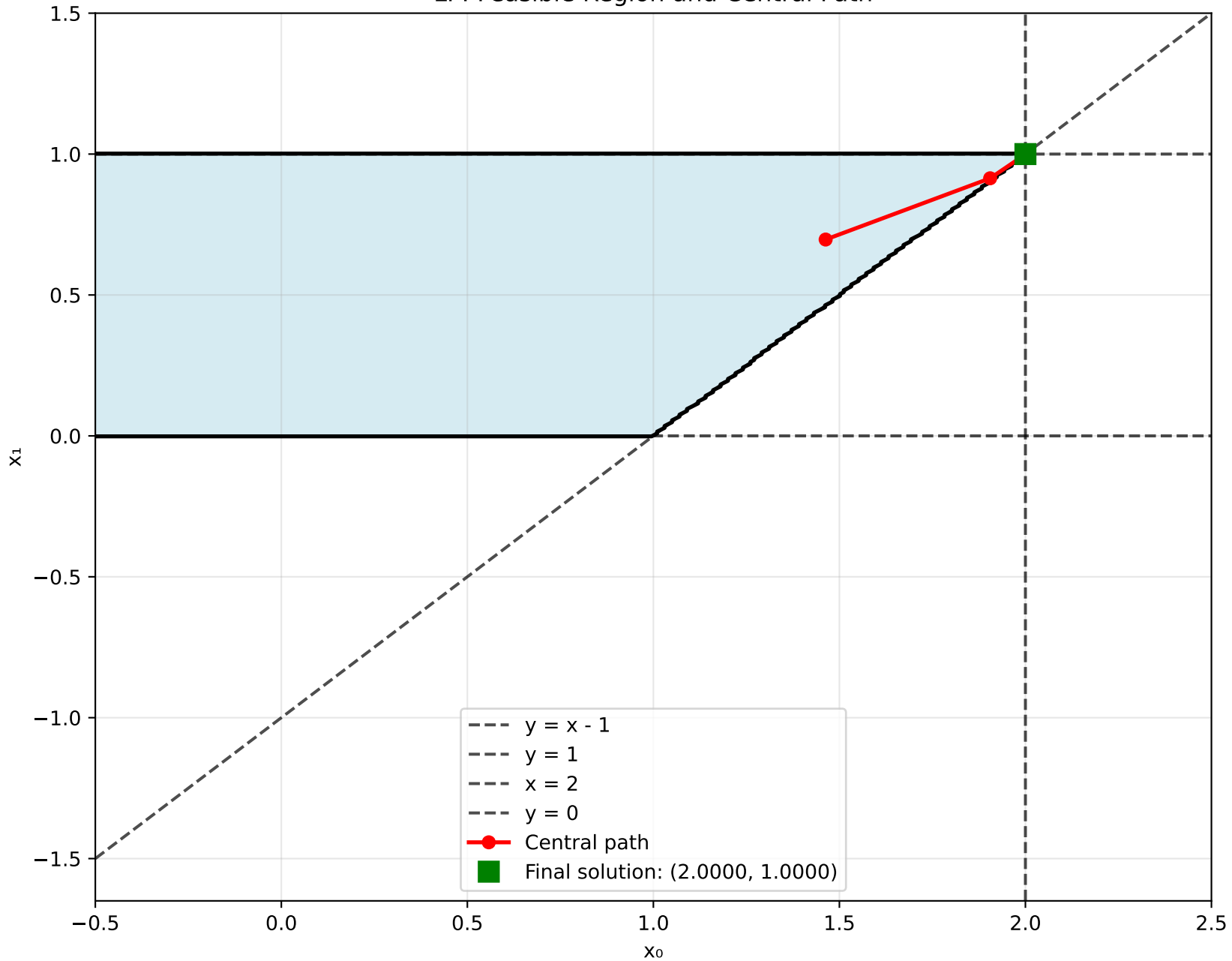
Constrained Optimization Results

Link to Github Repository:

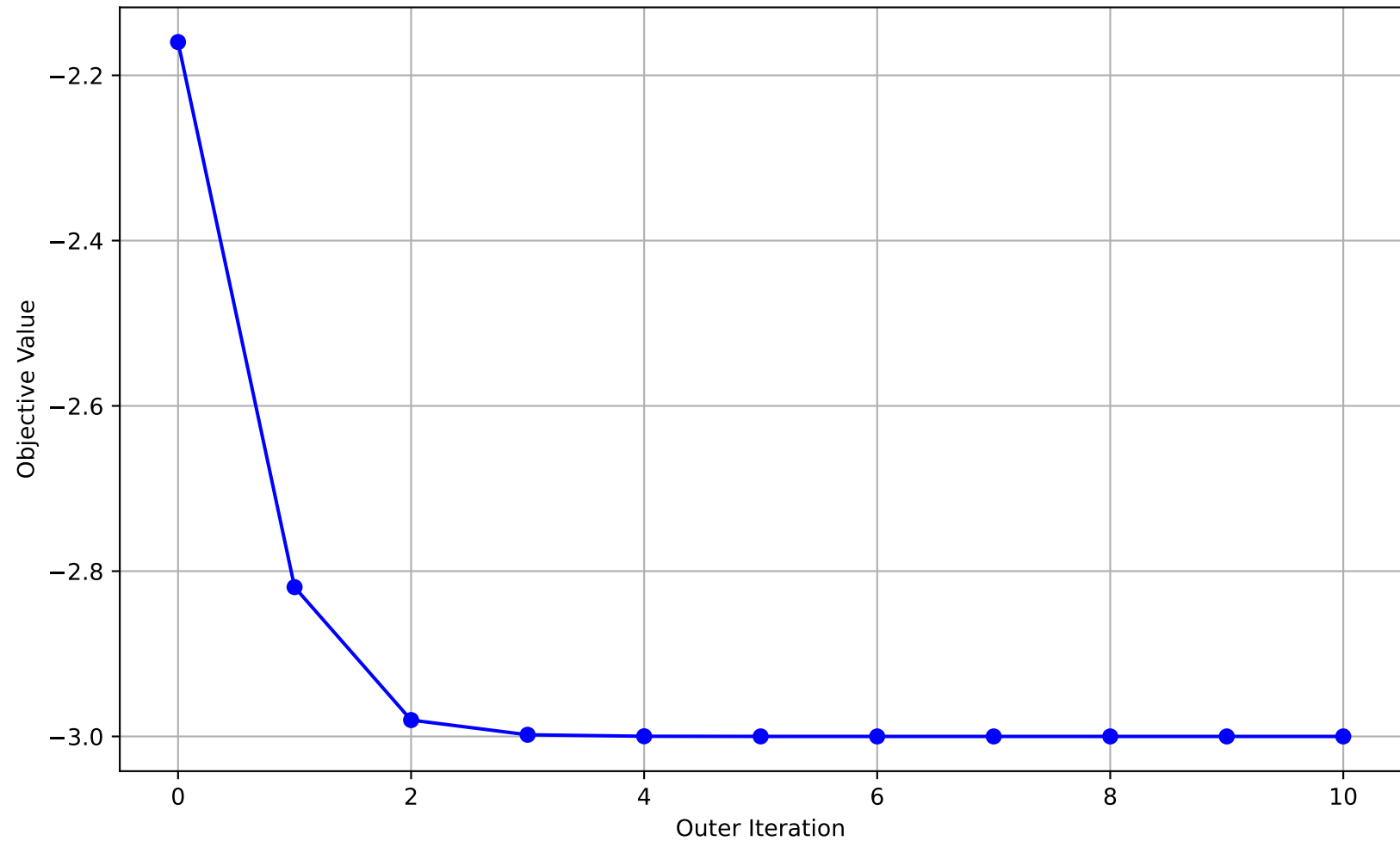
https://github.com/queenkatherinecodes/python_hw2

Amit Parann and Katherine Berger

LP: Feasible Region and Central Path



LP: Objective Value vs Iteration



LINEAR PROGRAMMING RESULTS

LINEAR PROGRAMMING RESULTS

Final Solution:

$x = [2.000000, 1.000000]$

Objective Value:

$f(x) = -3.000000$

Original objective $-(x_0 + x_1)$: -3.000000

Constraint Values (should be ≥ 0):

$y - (x - 1)$: 0.000000

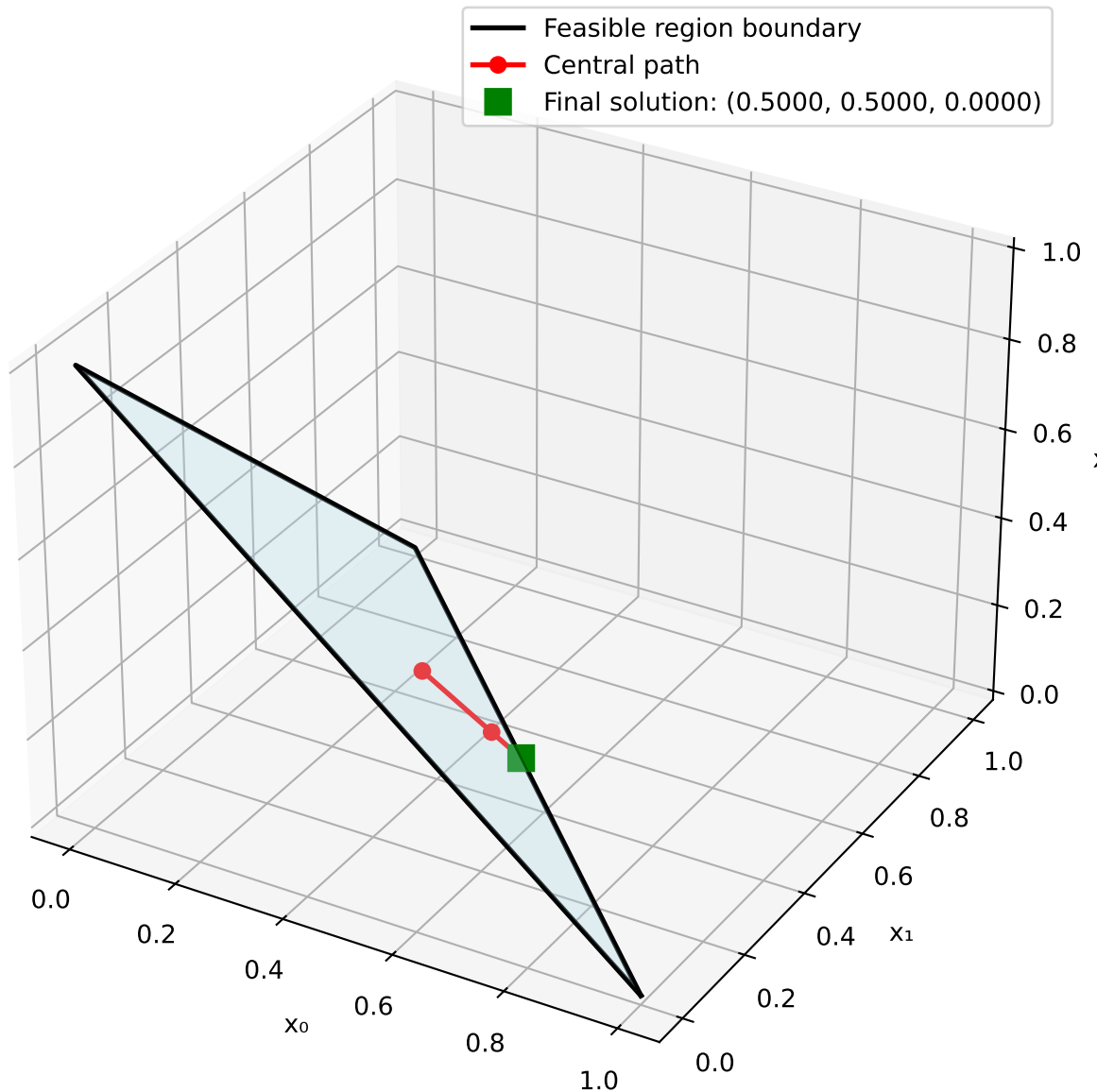
$1 - y$: 0.000000

$2 - x$: 0.000000

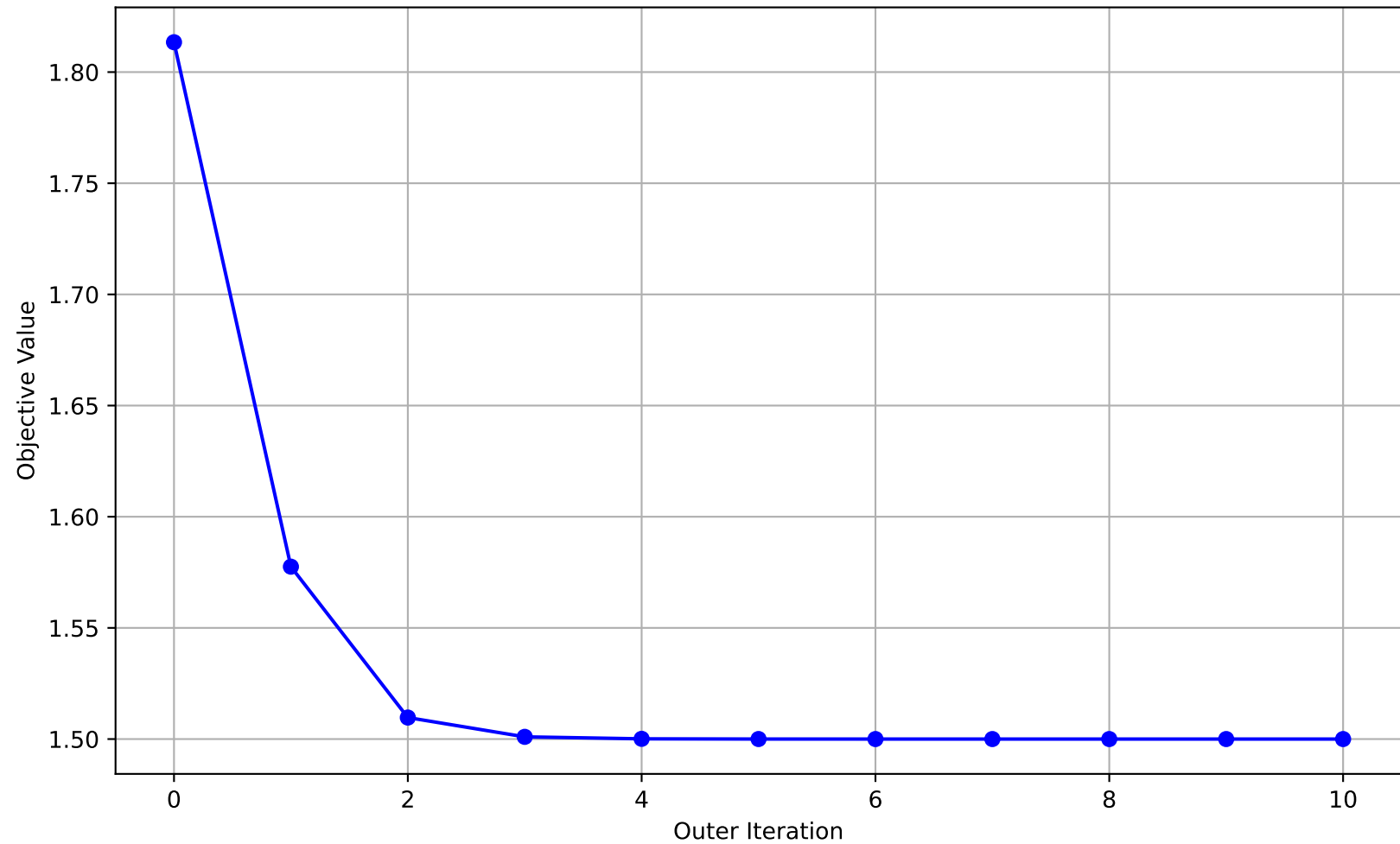
y : 1.000000

Number of outer iterations: 11

QP: Feasible Region and Central Path



QP: Objective Value vs Iteration



QUADRATIC PROGRAMMING RESULTS

QUADRATIC PROGRAMMING RESULTS

Final Solution:

$x = [0.500000, 0.500000, 0.000000]$

Objective Value:

$f(x) = 1.500000$

Constraint Values:

Equality constraint ($x_0 + x_1 + x_2 - 1$): -0.000000

Inequality constraints:

$x_0 \geq 0$: 0.500000

$x_1 \geq 0$: 0.500000

$x_2 \geq 0$: 0.000000

Number of outer iterations: 11