



Escuela de Ingeniería en Computación  
Ingeniería en Computación  
IC-6400 - Investigación de Operaciones

## Project 04

### Simplex Report

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# **Chapter 1**

## **Simplex Description**

The simplex algorithm is a very simple algorithm.

# Chapter 2

## Solving mofongo

### 2.1 Mathematical representation

**Maximize:**

$$z = 60,0000abeja + 35,0000babuino + 20,0000coyote \quad (2.1)$$

**Subject To:**

$$8,0000abeja + 6,0000babuino + 1,00000coyote \leq 48,00000 \quad (2.2)$$

$$4,0000abeja + 2,0000babuino + 1,50000coyote \leq 20,00000 \quad (2.3)$$

$$2,0000abeja + 1,5000babuino + 0,50000coyote \leq 8,00000 \quad (2.4)$$

$$0,0000abeja + 1,0000babuino + 0,00000coyote \leq 5,00000 \quad (2.5)$$

### 2.2 The initial simplex table

Pivoteo(1)

$Z$	$abeja$	$babuino$	$coyote$	$s_1$	$s_2$	$s_3$	$s_4$	$B$
1,00000	0,00000	10,00000	-5,00000	0,00000	0,00000	30,00000	0,00000	240,00000
0,00000	0,00000	0,00000	-1,00000	1,00000	0,00000	-4,00000	0,00000	16,00000
0,00000	0,00000	-1,00000	0,50000	0,00000	1,00000	-2,00000	0,00000	4,00000
0,00000	1,00000	0,75000	0,25000	0,00000	0,00000	0,50000	0,00000	4,00000
0,00000	0,00000	1,00000	0,00000	0,00000	0,00000	0,00000	1,00000	5,00000

Pivoteo(2)

$Z$	$abeja$	$babuino$	$coyote$	$s_1$	$s_2$	$s_3$	$s_4$	$B$
1,00000	0,00000	0,00000	0,00000	0,00000	10,00000	10,00000	0,00000	280,00000
0,00000	0,00000	-2,00000	0,00000	1,00000	2,00000	-8,00000	0,00000	24,00000
0,00000	0,00000	-2,00000	1,00000	0,00000	2,00000	-4,00000	0,00000	8,00000
0,00000	1,00000	1,25000	0,00000	0,00000	-0,50000	1,50000	0,00000	2,00000
0,00000	0,00000	1,00000	0,00000	0,00000	0,00000	0,00000	1,00000	5,00000