



Algoritmos Genéticos

Sistemas de Inteligencia Artificial

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El problema de la mochila

Este problema consiste armar una mochila que tenga el mejor beneficio posible sin sobrepasar el peso máximo. Cada elemento que se puede poner en la mochila tiene un beneficio y un peso, el cual hay que tener en cuenta a la hora de elegirlo.





Métodos de Cruza





① Uniforme

② Múltiple

con parámetro K

③ Simple



Métodos de Selección





①

Elite

②

Ruleta

③

Rank

④

Torneos

⑤

Boltzman

Con k, T_0, T_C

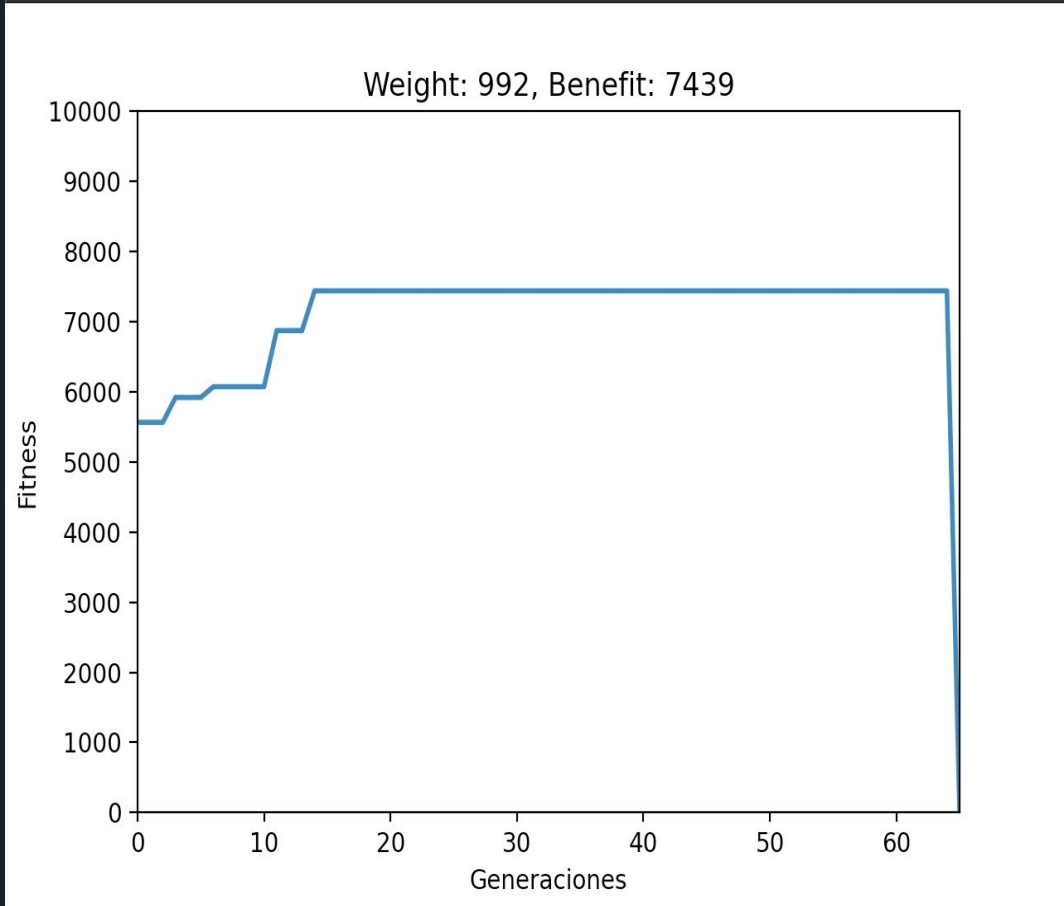
⑥

Truncada

con parámetro K

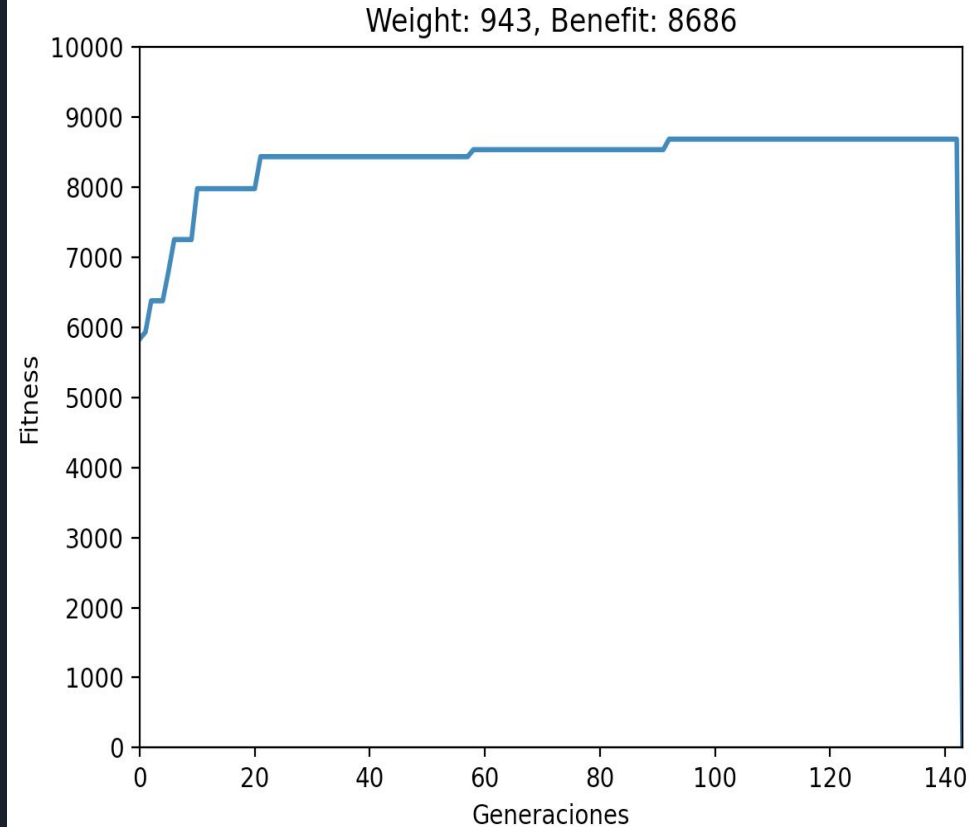
Truncated

- $P = 100$
- $K = 15$
- Mutación = 0,005
- Cruza = Simple
- Unchanged = 50
- Max = 500



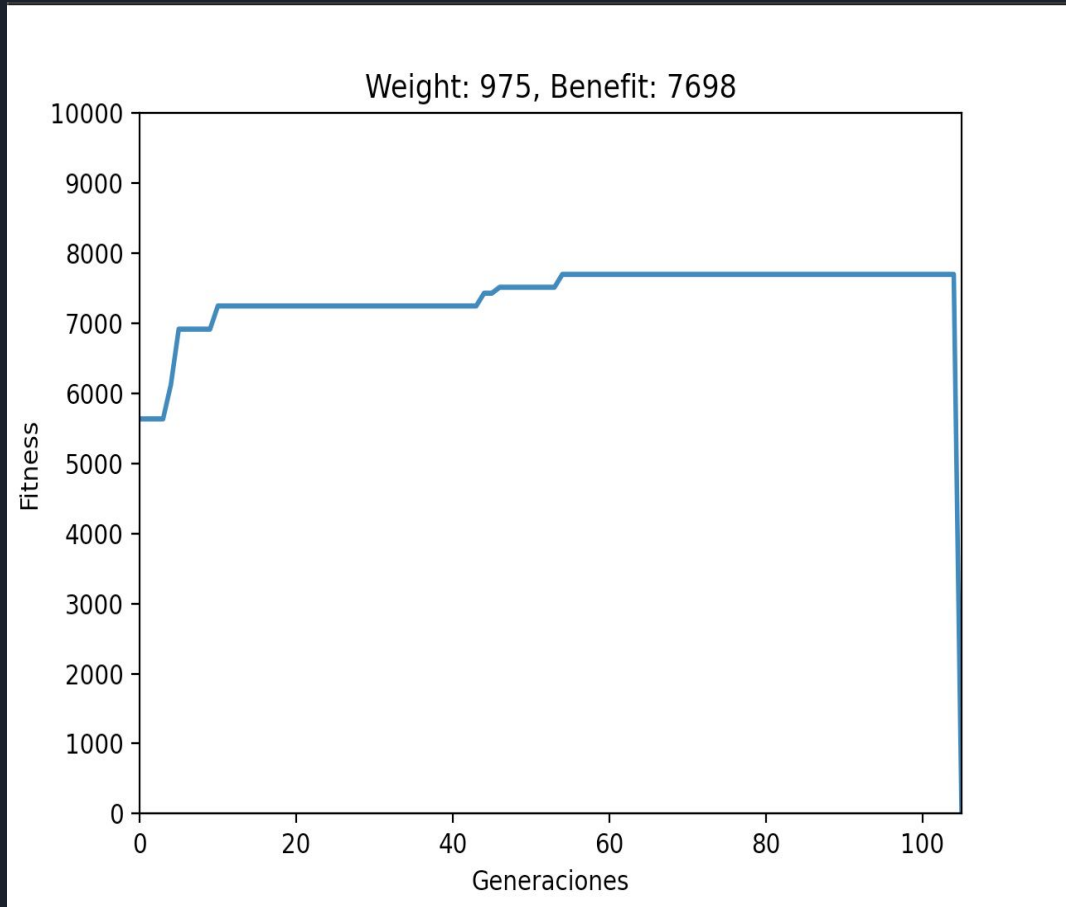
Truncated

- P = 100
- K = 15
- Mutación = 0,005
- Cruza = Múltiple
- ◆ Points = 2
- Unchanged = 50
- Max = 500



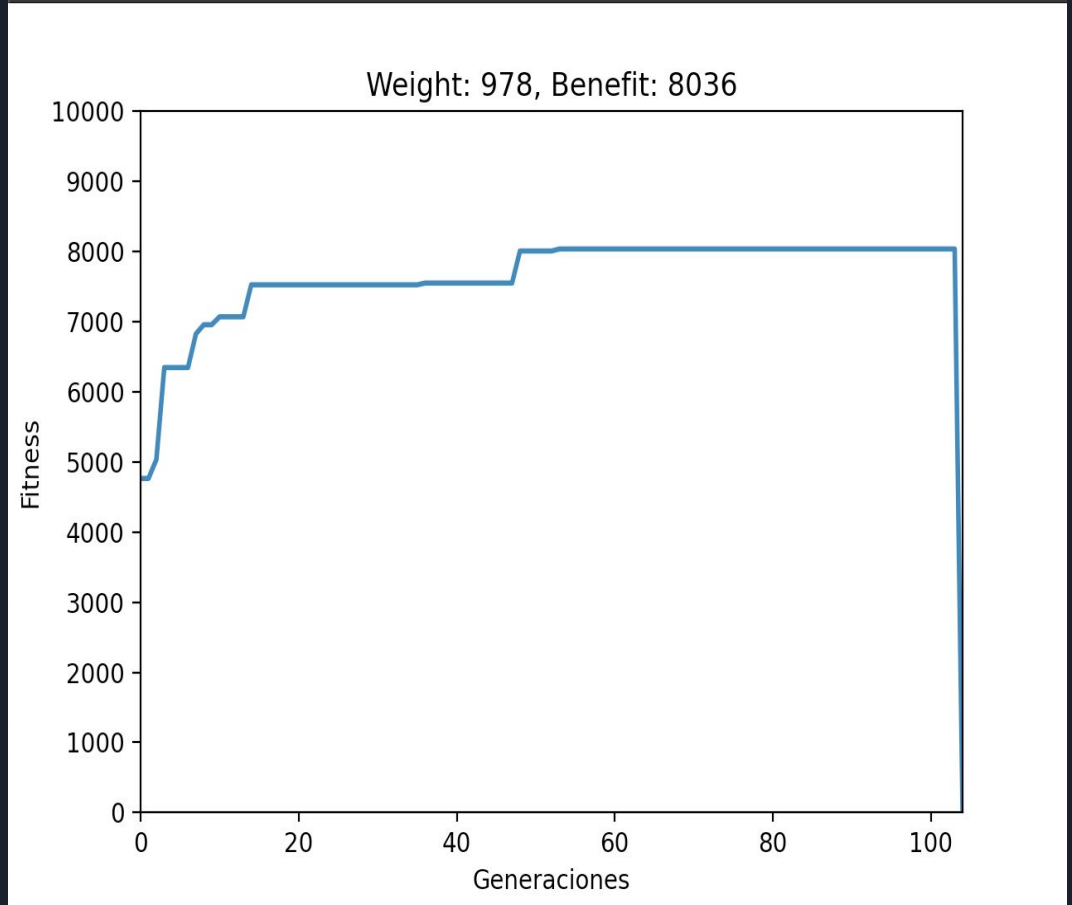
Truncated

- $P = 100$
- $K = 15$
- Mutación = 0,005
- Cruza = Múltiple
- ◆ Points = 5
- Unchanged = 50
- Max = 500



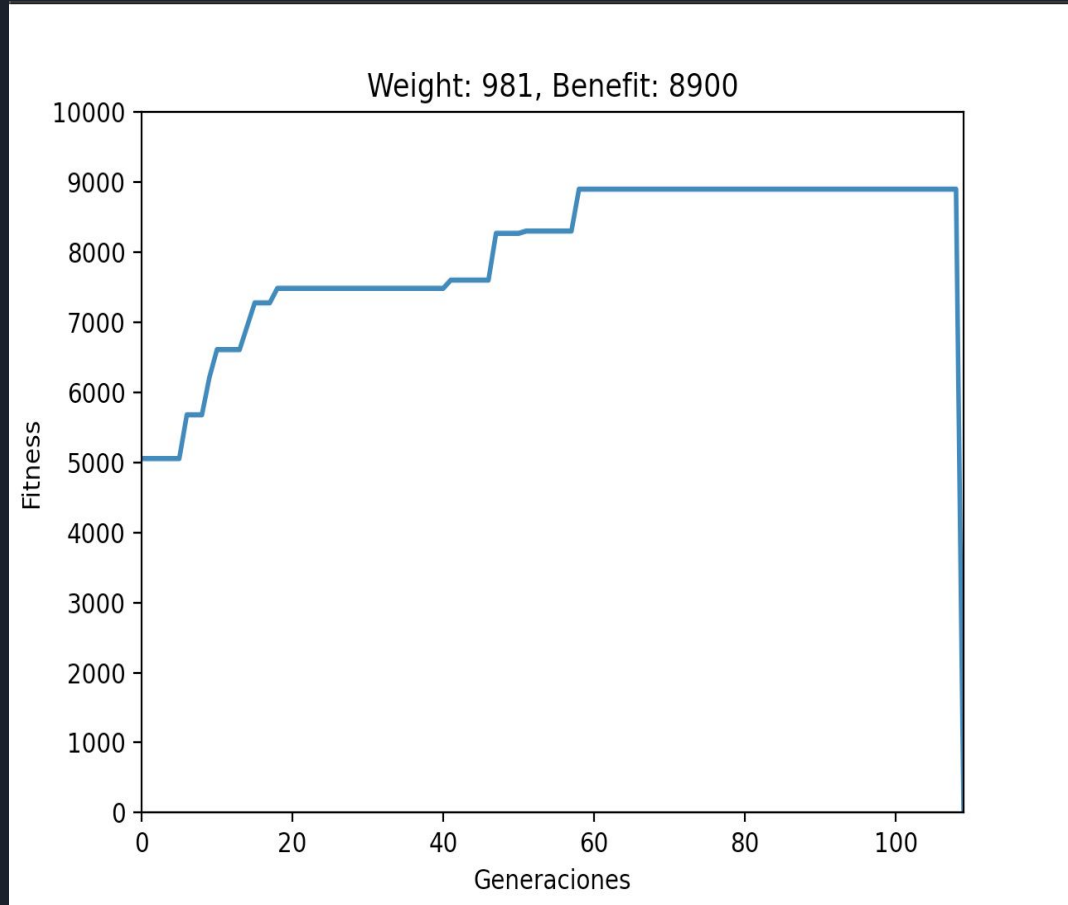
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- K = 15
- Mutación = 0,005
- Cruza = Múltiple
- ◆ Points = 10
- Unchanged = 50
- Max = 500



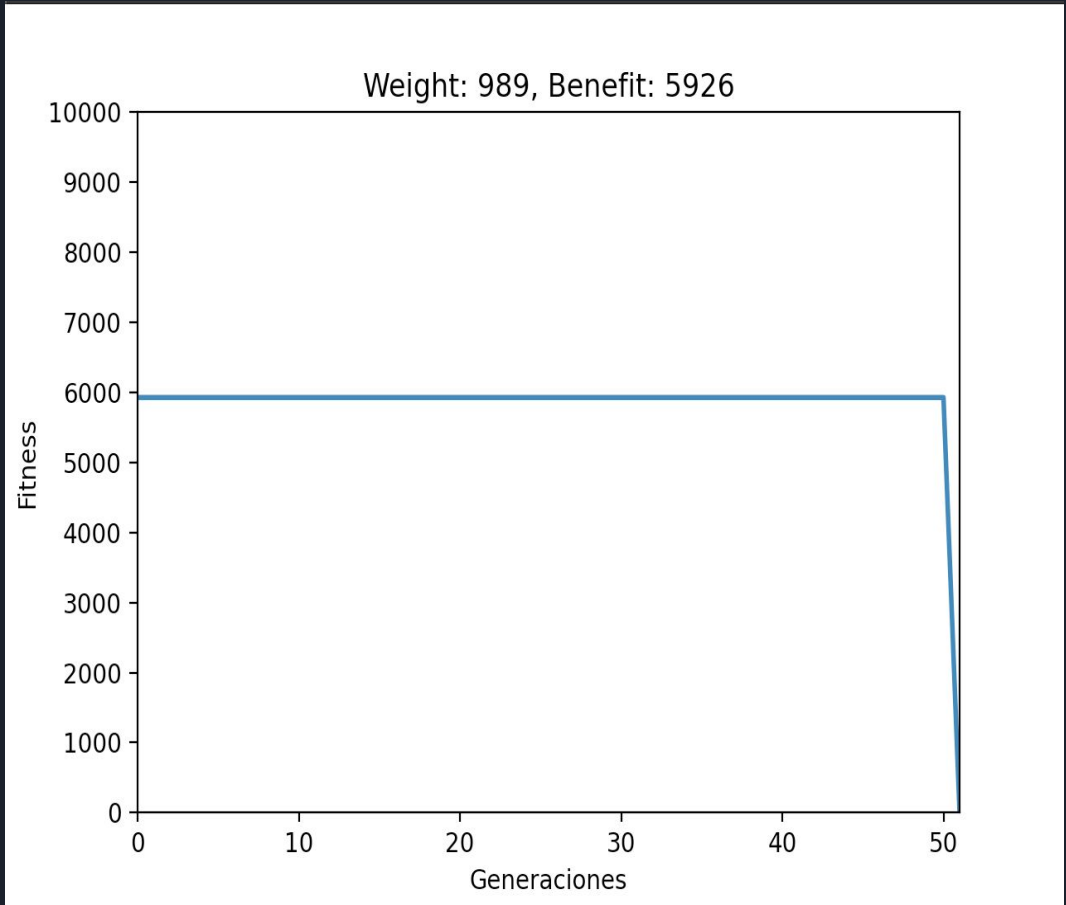
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- $P = 100$
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- Mutación = 0,005
- Cruza = Uniforme
- Unchanged = 50
- Max = 500



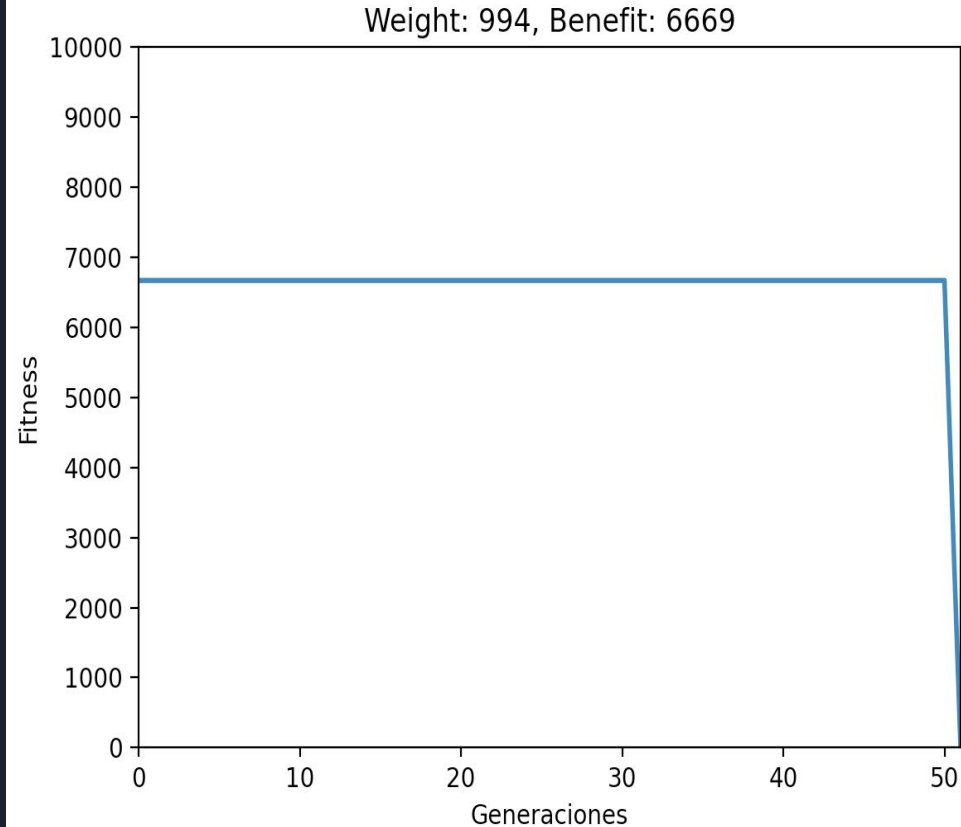
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- Cruza = Simple
- Unchanged = 50
- Max = 500



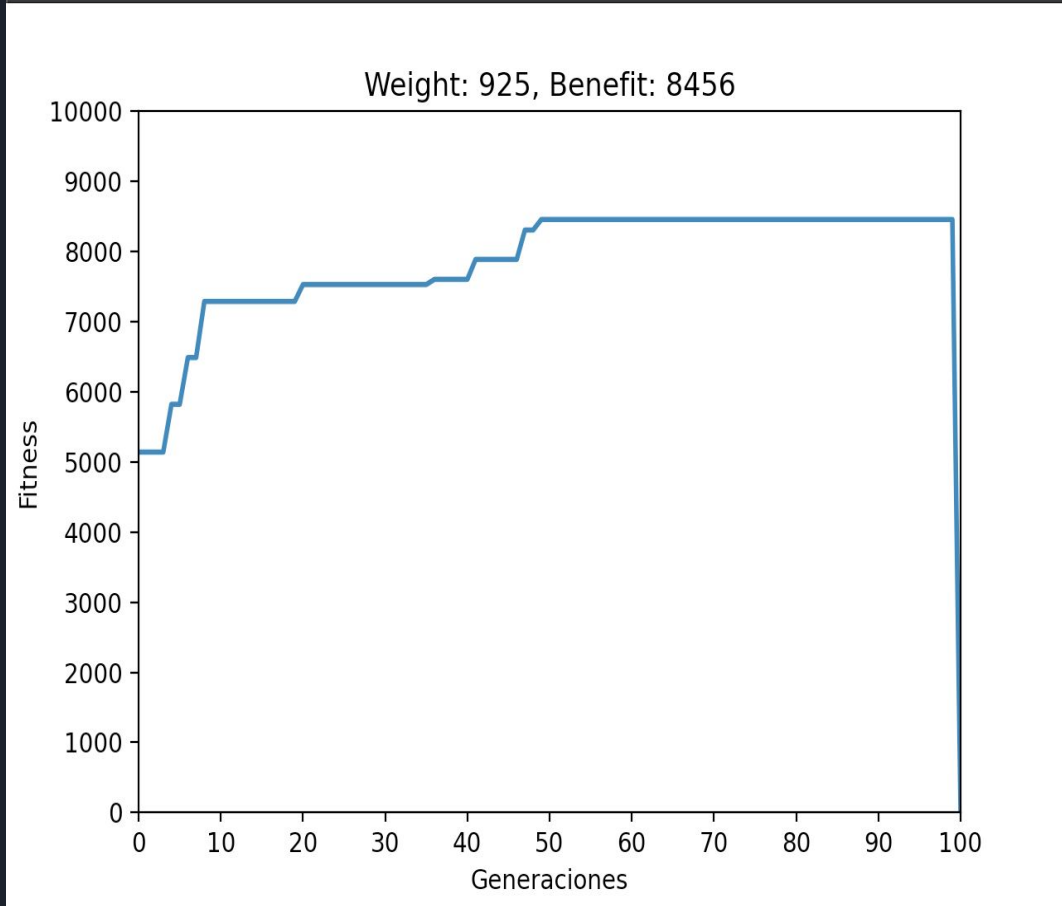
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- ◆ Points = 2
- Unchanged = 50
- Max = 500



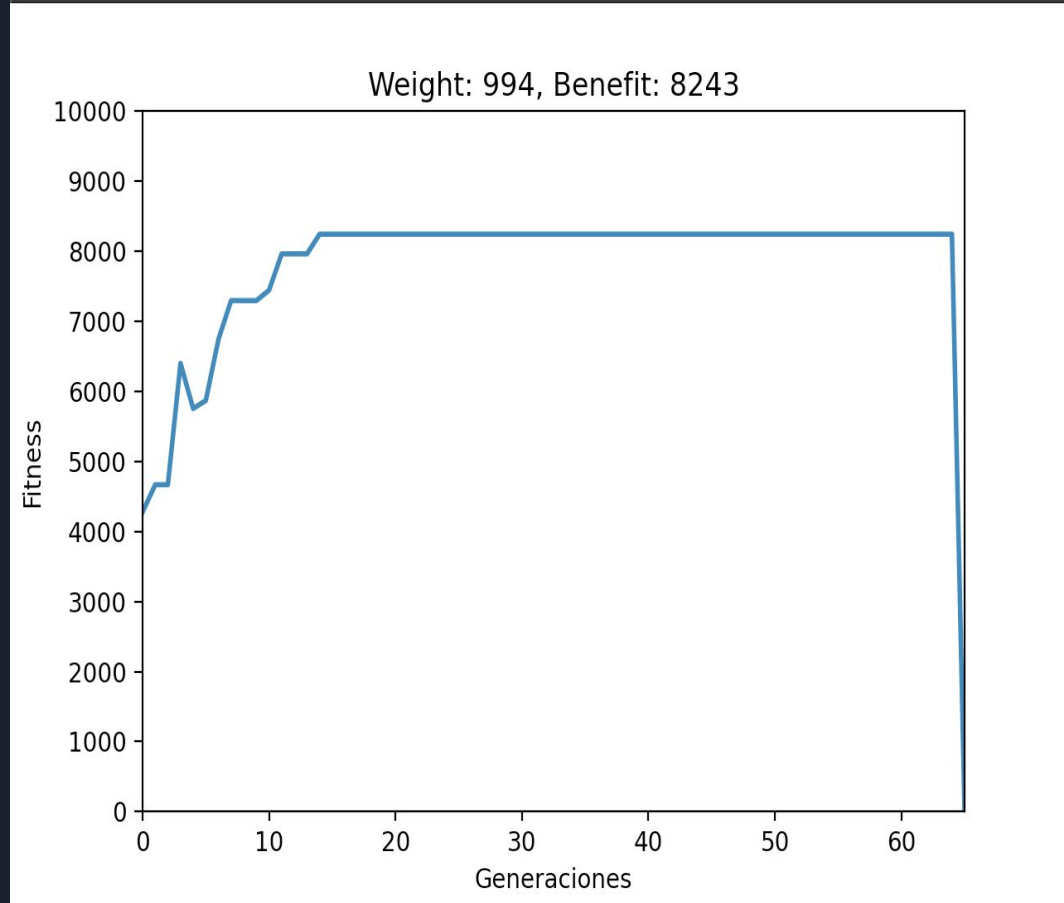
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- Cruza = Múltiple
- ◆ Points = 5
- Unchanged = 50
- Max = 500



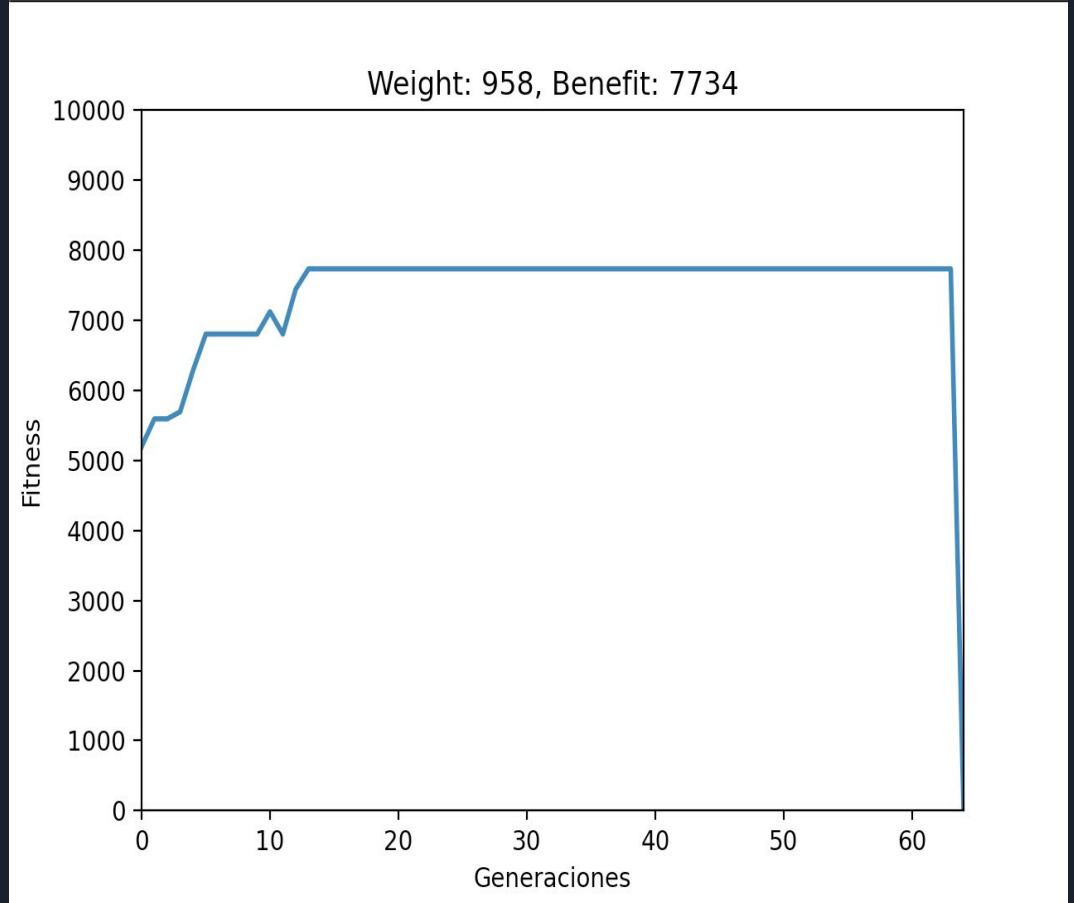
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- $P = 100$
- $K = 50$
- Mutación = 0,005
- Cruza = Múltiple
- ◆ Points = 10
- Unchanged = 50
- Max = 500



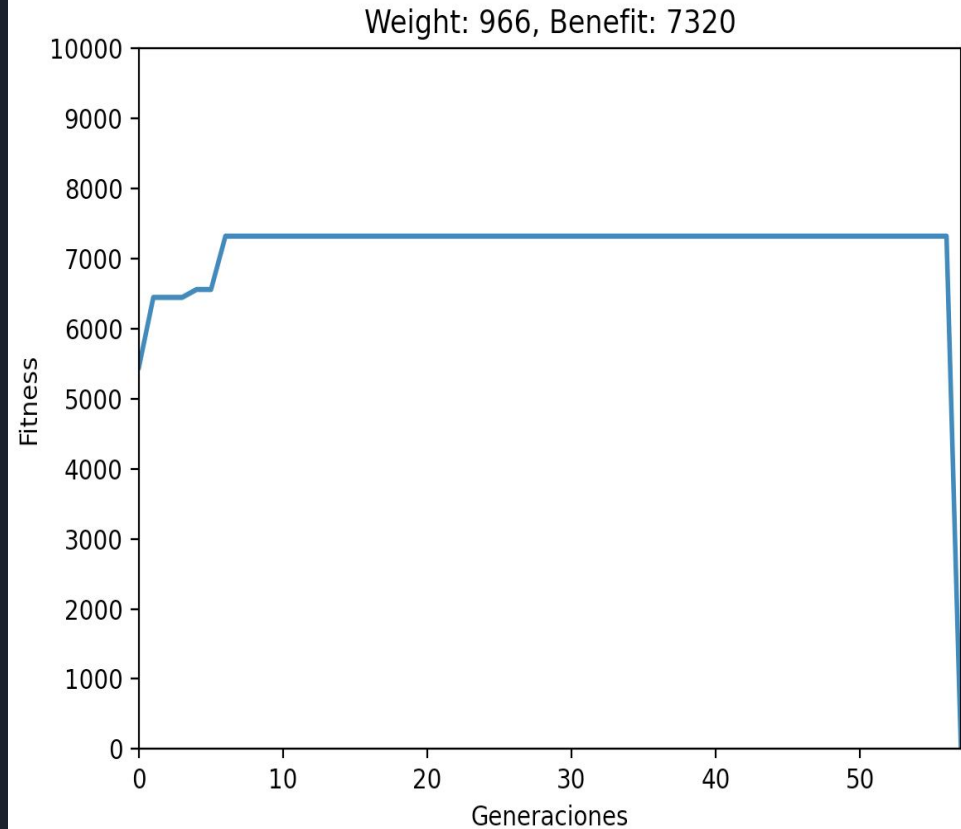
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- Mutación = 0,005
- Cruza = Uniforme
- Unchanged = 50
- Max = 500



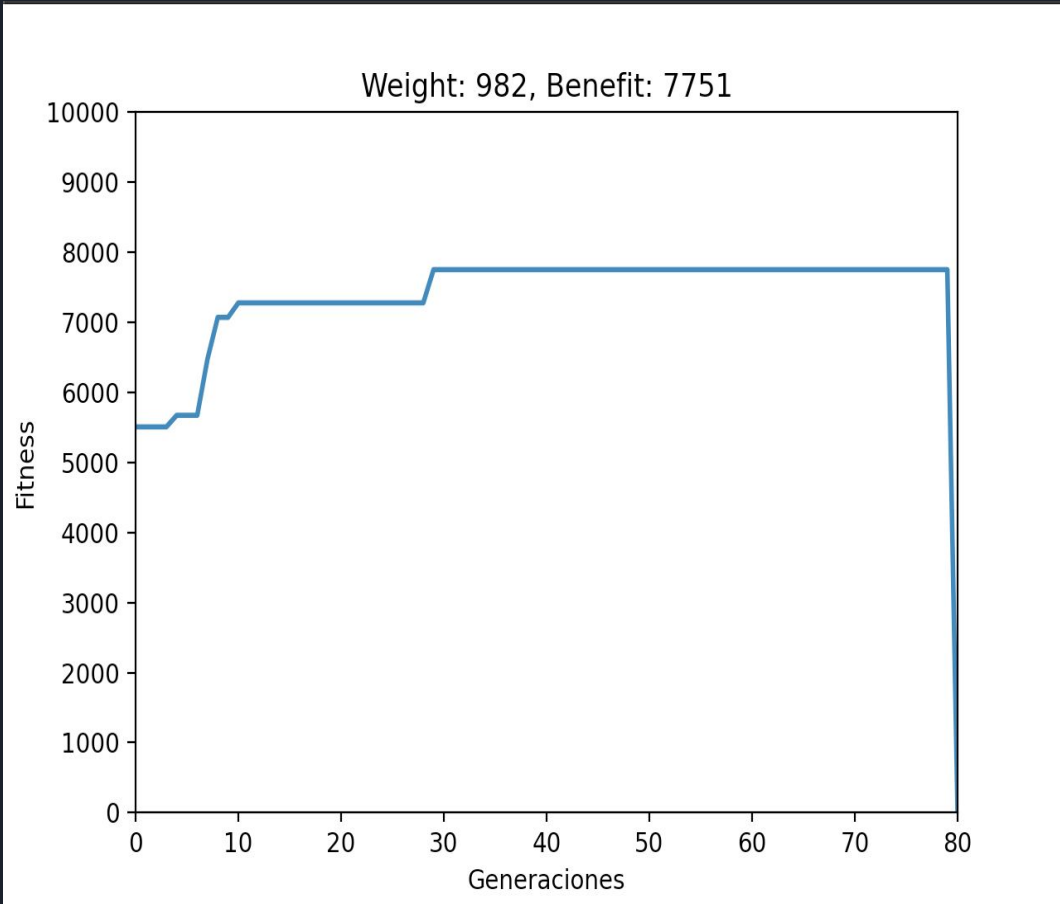
Tournament

- $P = 100$
- Mutación = 0,005
- Cruza = Simple
- Unchanged = 50
- Max = 500



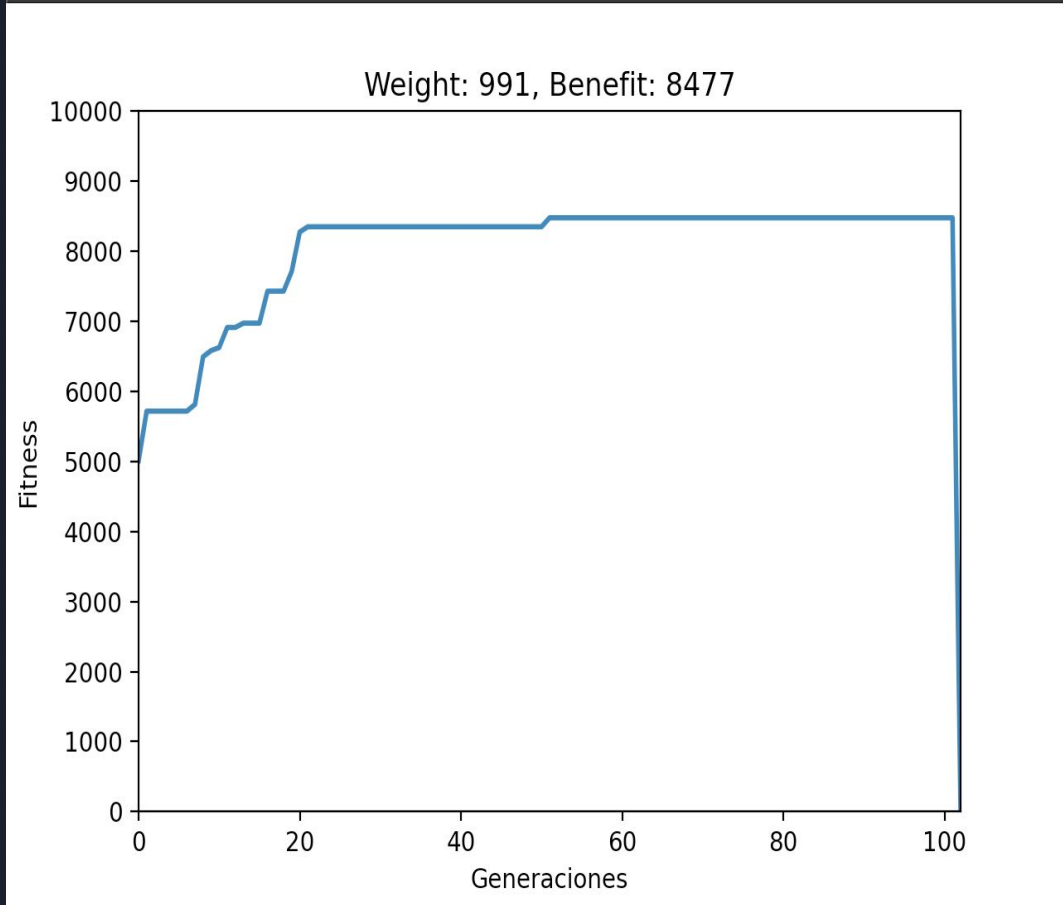
Tournament

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- Mutación = 0,005
- Cruza = Múltiple
 - ◆ Points = 2
- Unchanged = 50
- Max = 500



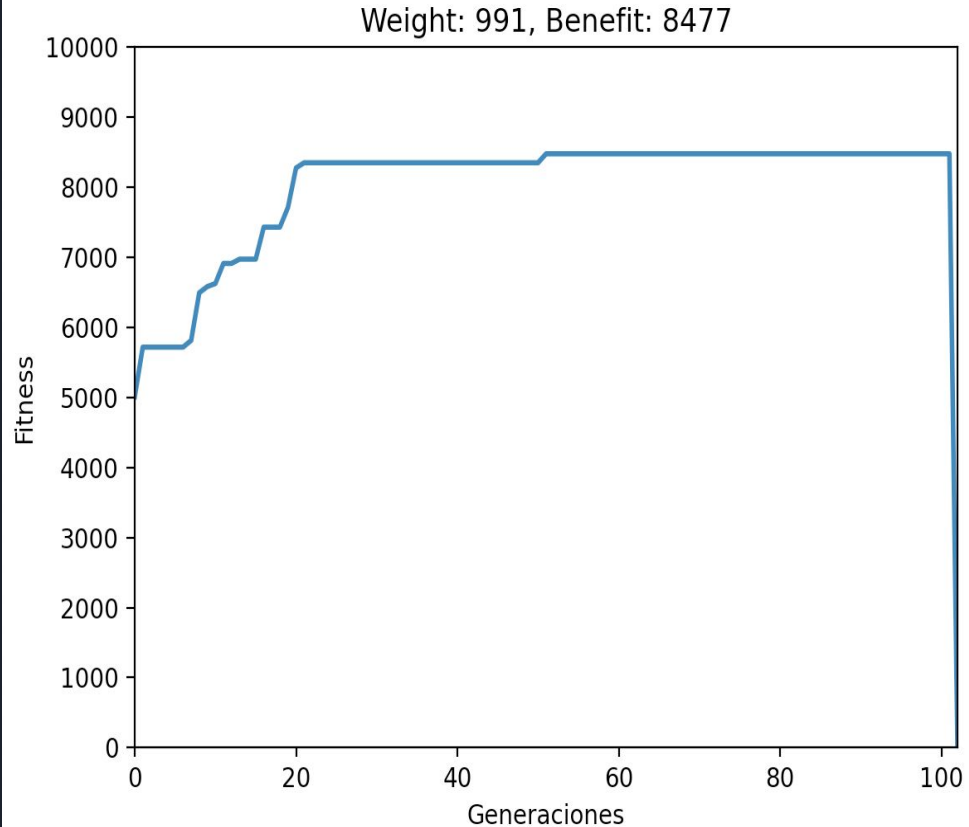
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- Cruza = Múltiple
 - ◆ Point = 5
- Unchanged = 50
- Max = 500



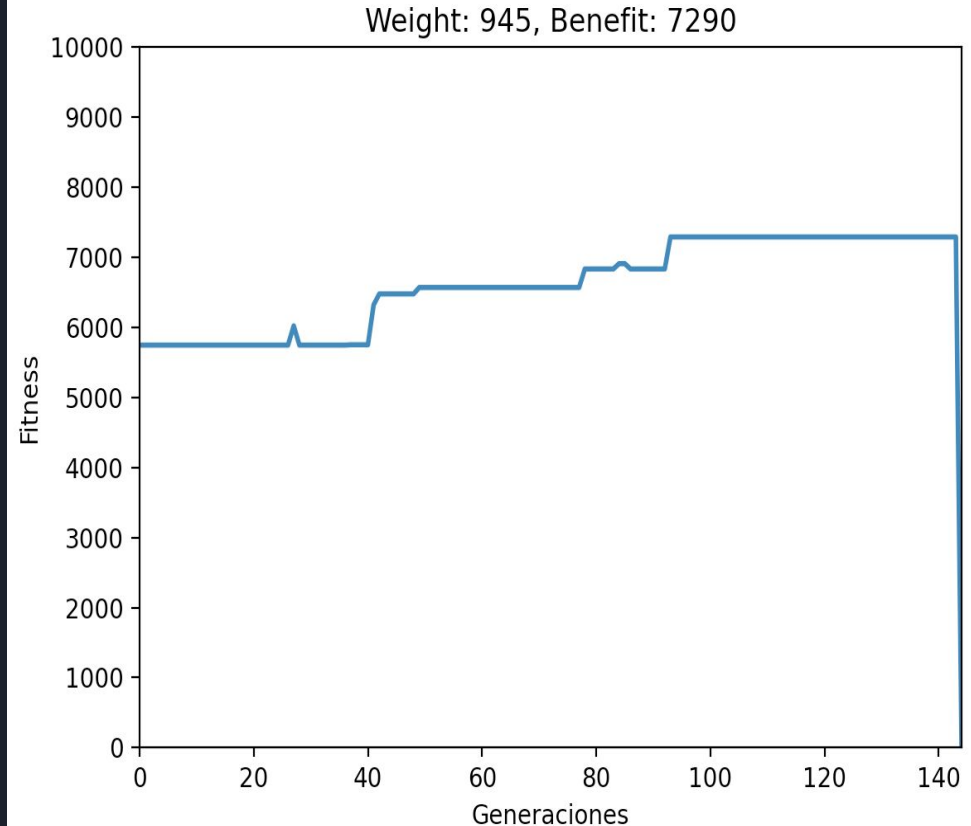
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- Mutación = 0,005
- Cruza = Múltiple
 - ◆ Points = 10
- Unchanged = 50
- Max = 500



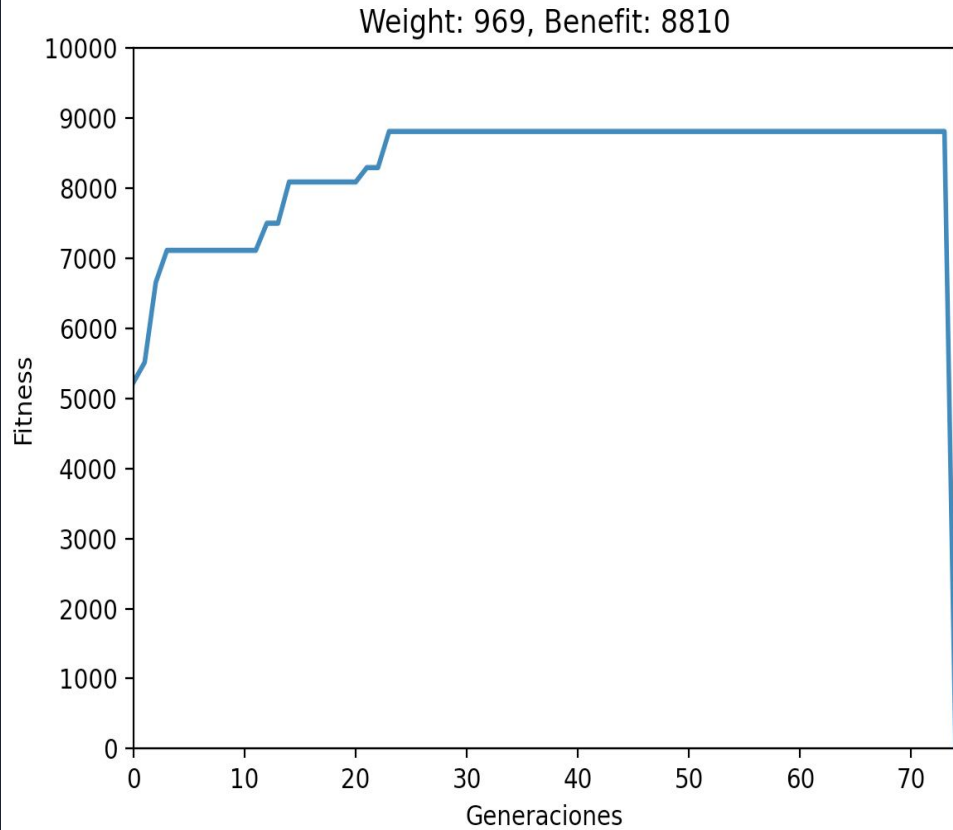
Tournament

- $P = 100$
- Mutación = 0,005
- Cruza = Simple
- Unchanged = 50
- Max = 500



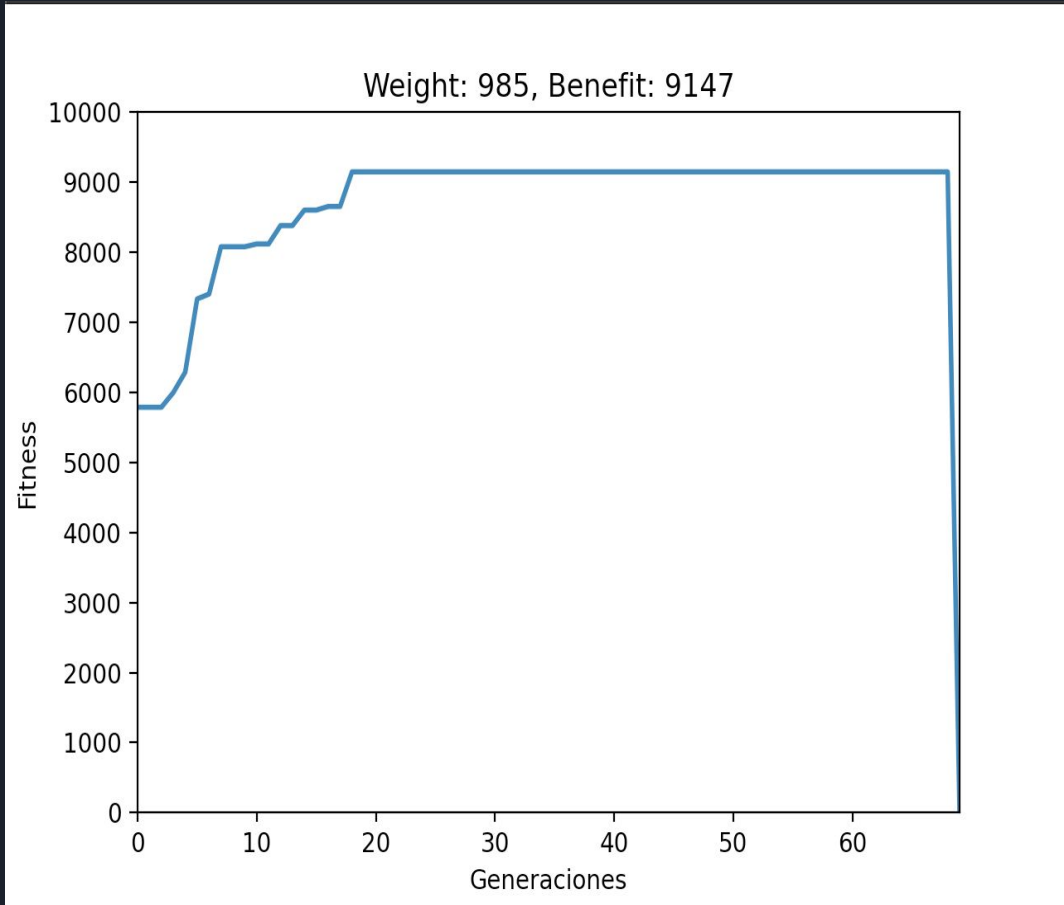
Elite

- $P = 100$
- Mutación = 0,005
- Cruza = Simple
- Unchanged = 50
- Max = 500



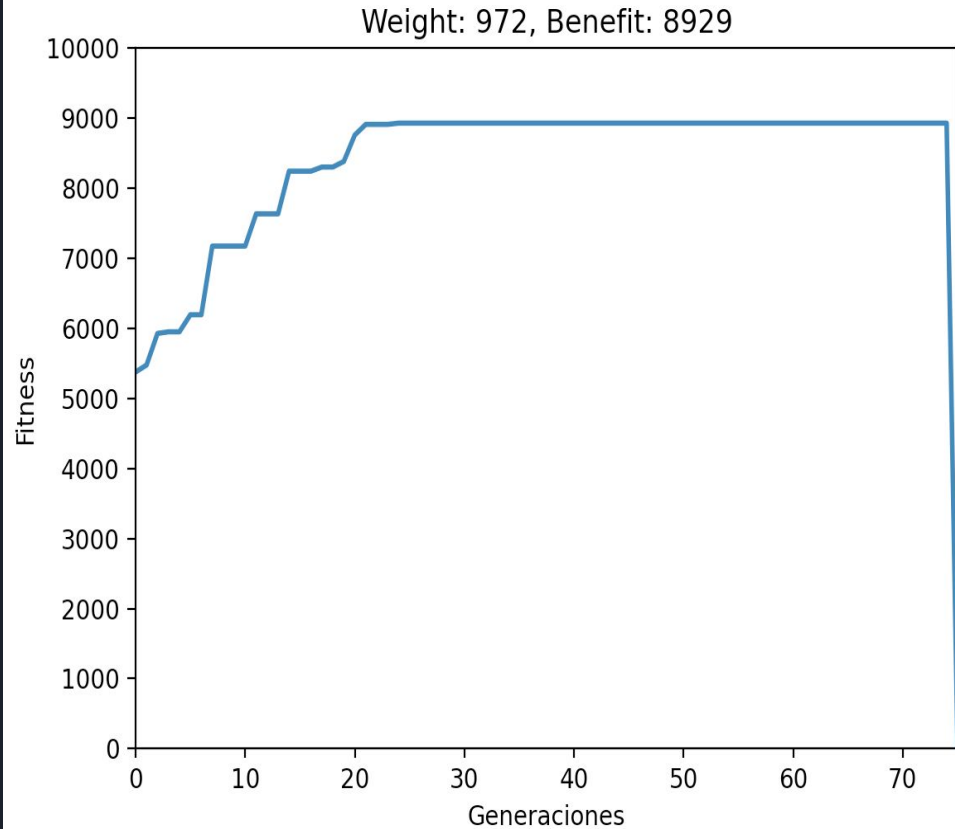
Elite

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- Cruza = Múltiple
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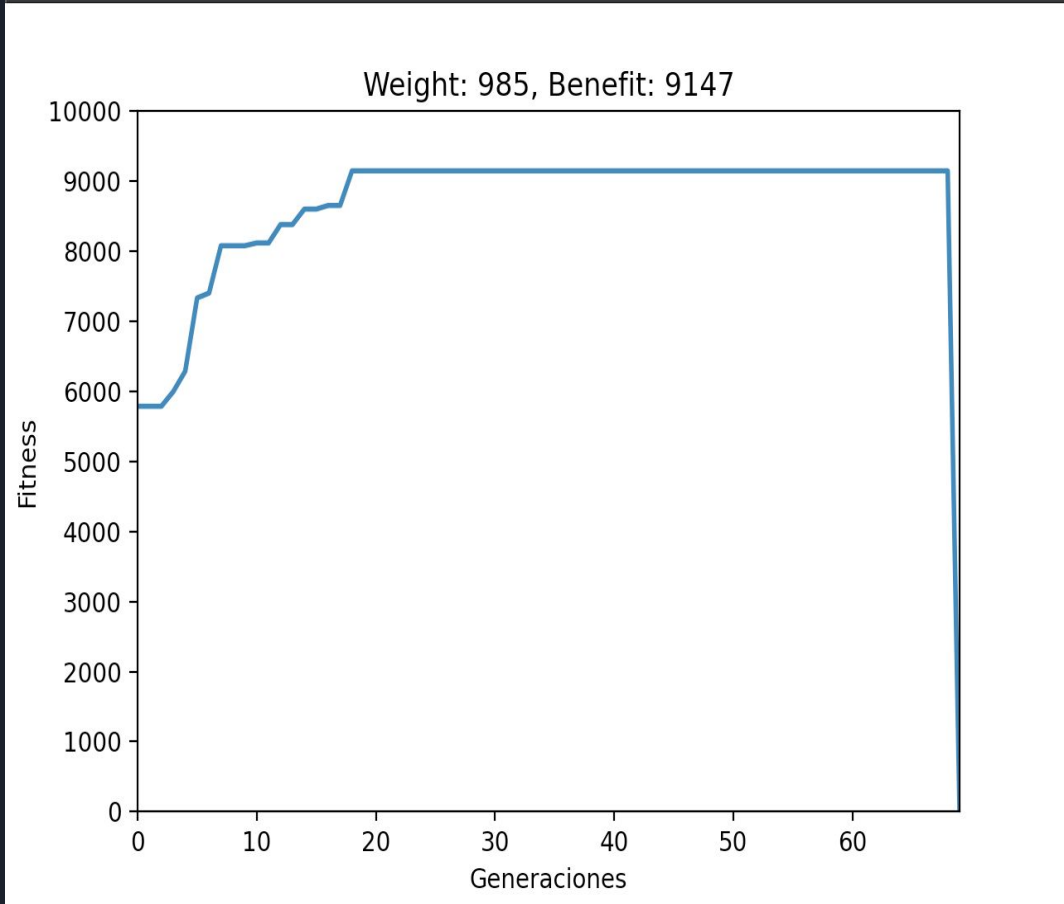
Elite

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- ◆ Points = 5
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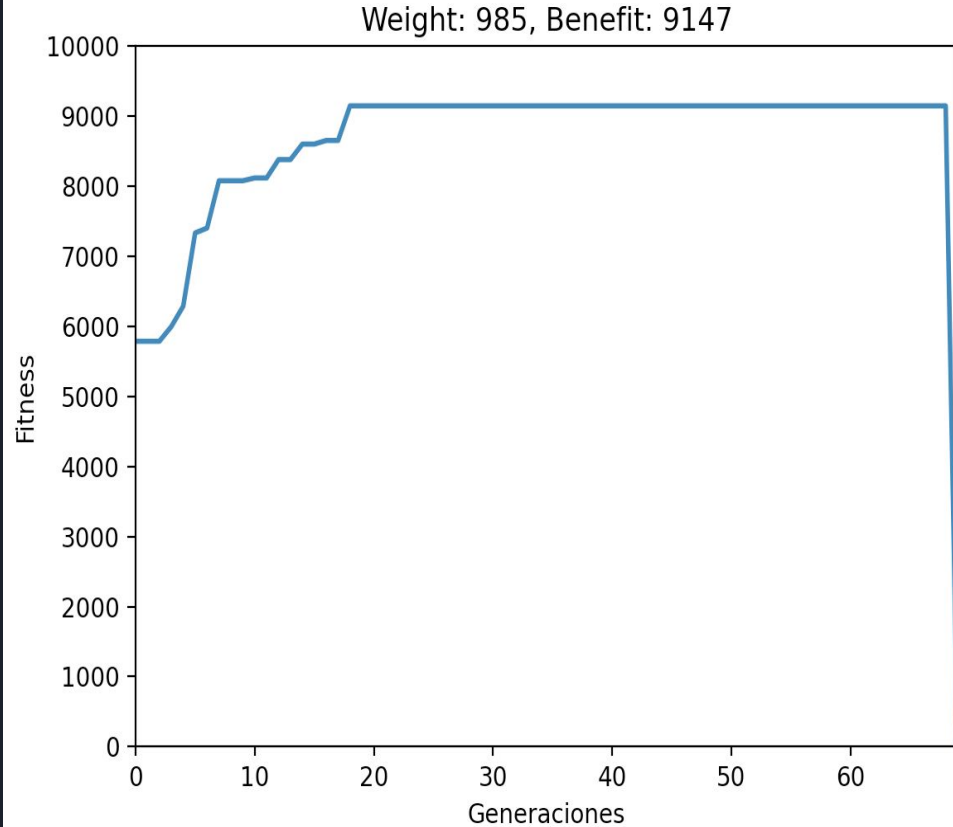
Elite

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- Cruza = Múltiple
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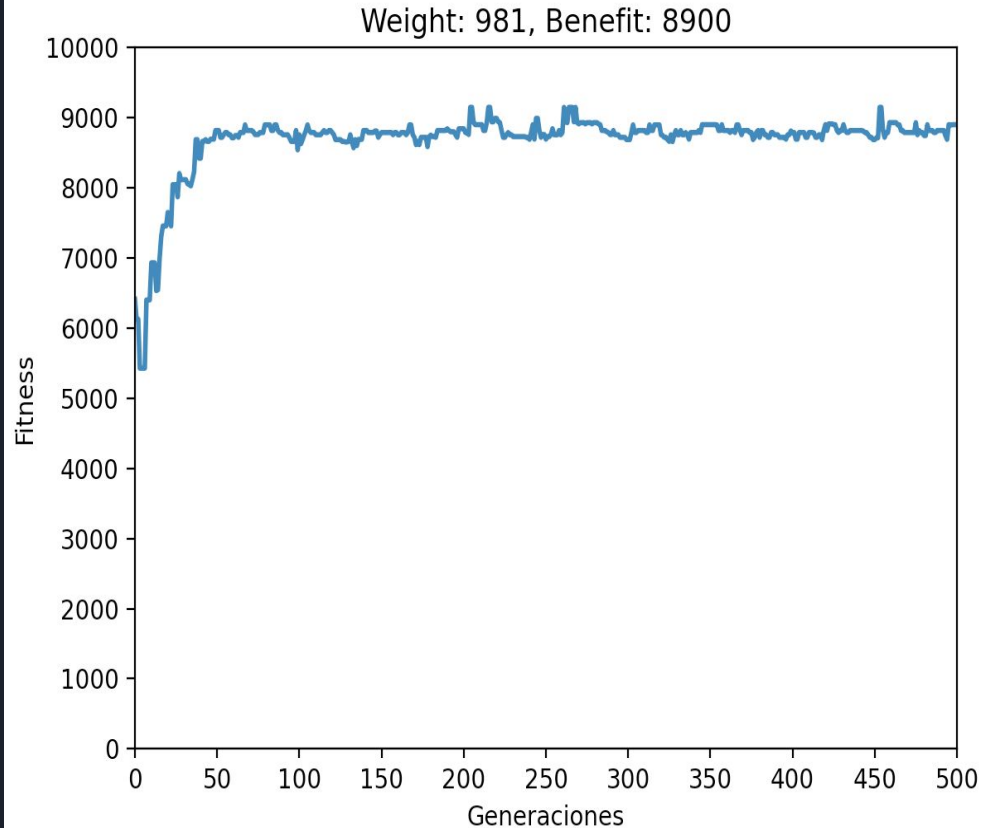
Elite

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- Mutación = 0,005
- Cruza = Uniforme
- Unchanged = 50
- Max = 500



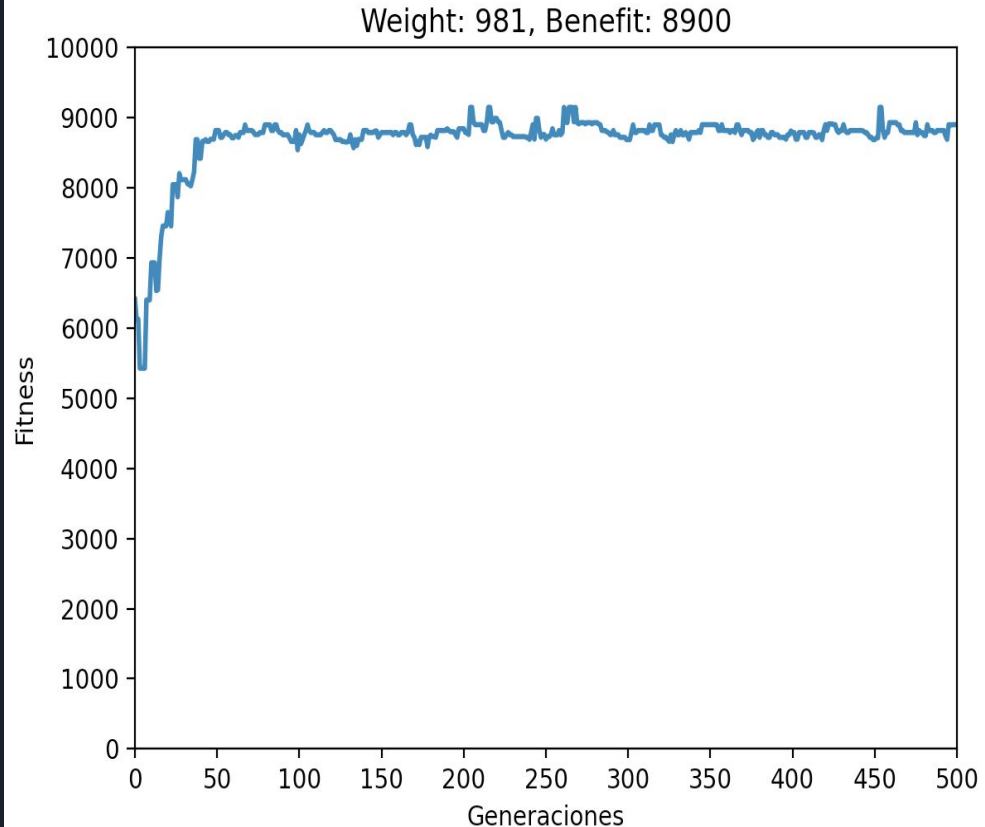
Rank

- $P = 100$
- Mutación = 0,005
- Cruza = Simple
- Unchanged = 50
- Max = 500



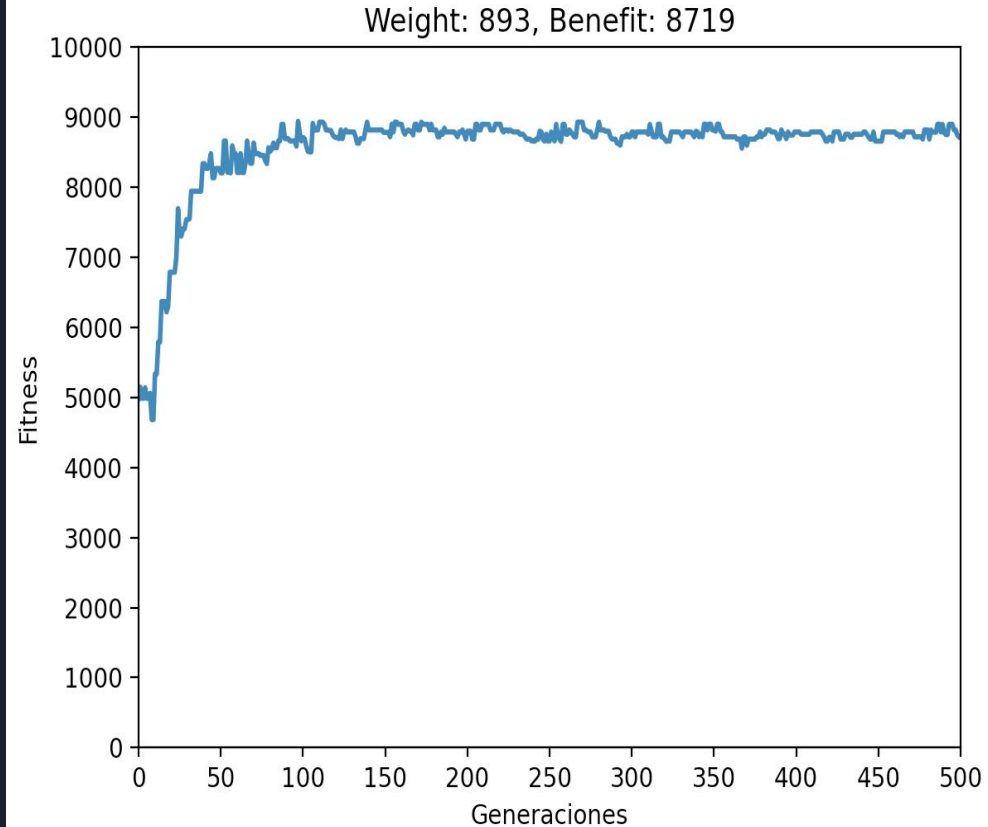
Rank

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- Mutación = 0,005
- Cruza = Múltiple
 - ◆ Points = 2
- Unchanged = 50
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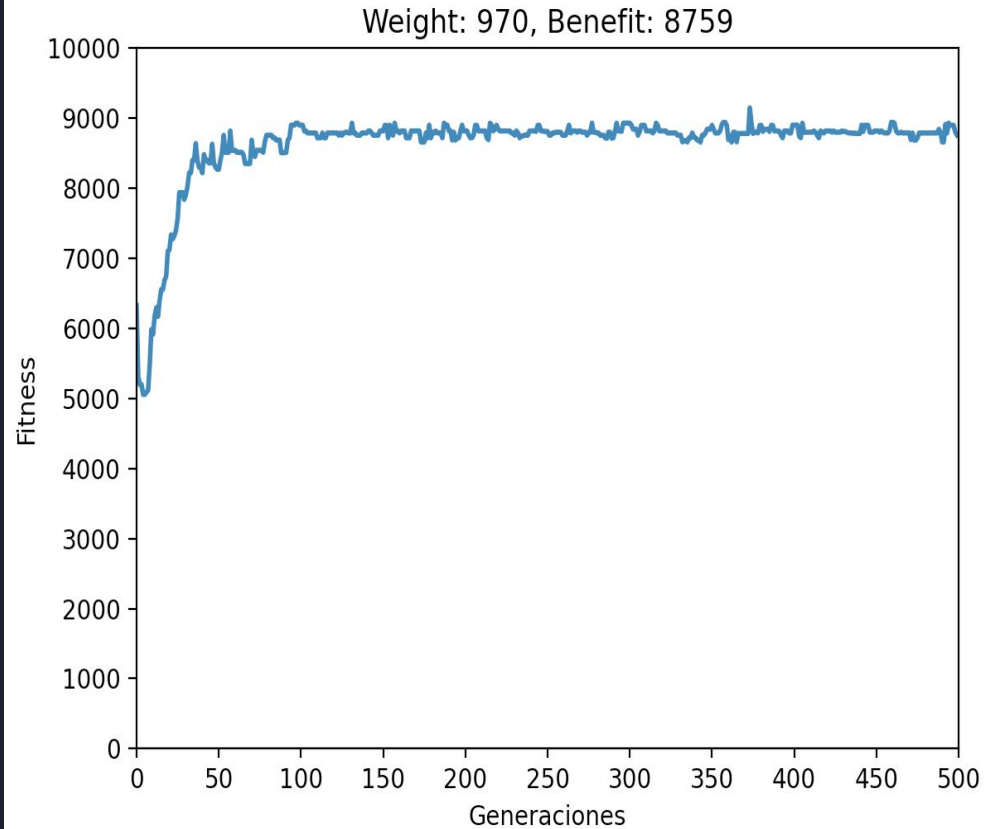
Rank

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- Mutación = 0,005
- Cruza = Múltiple
 - ◆ Points = 5
- Unchanged = 50
- Max = 500



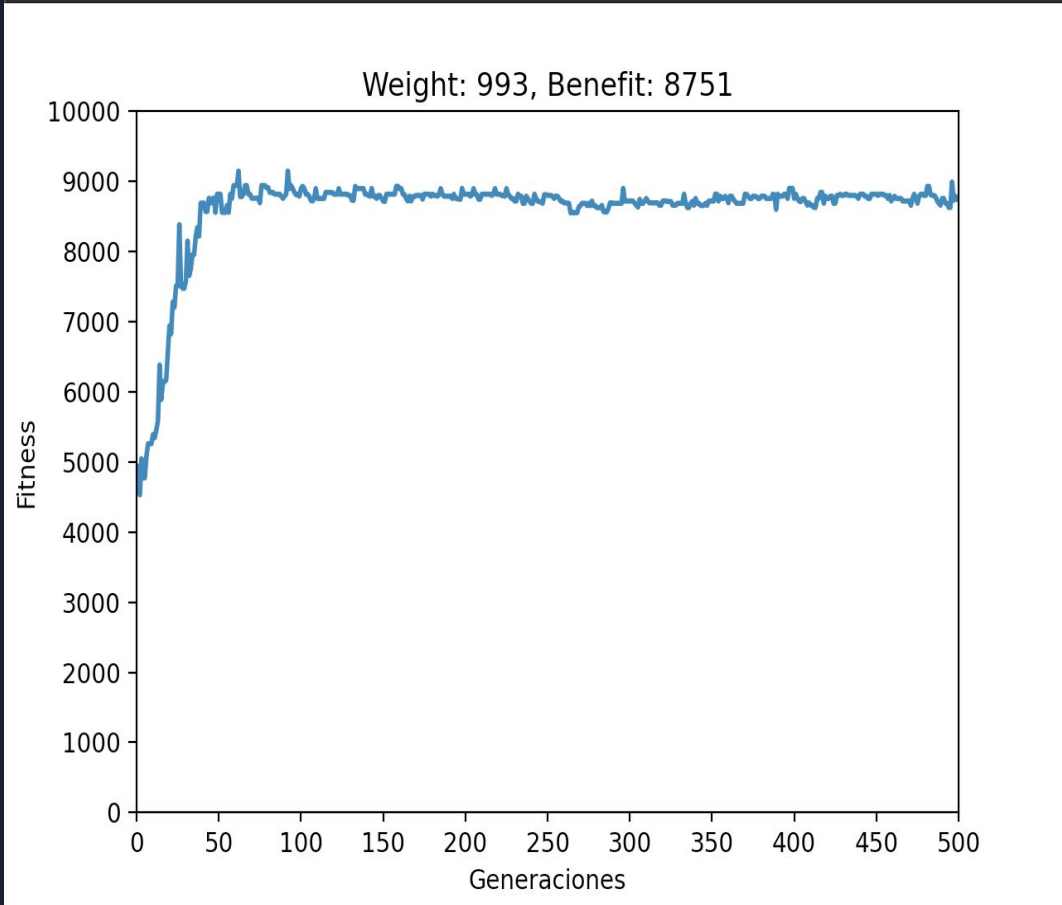
Rank

- $P = 100$
- Mutación = 0,005
- Cruza = Múltiple
 - ◆ Points = 10
- Unchanged = 50
- Max = 500



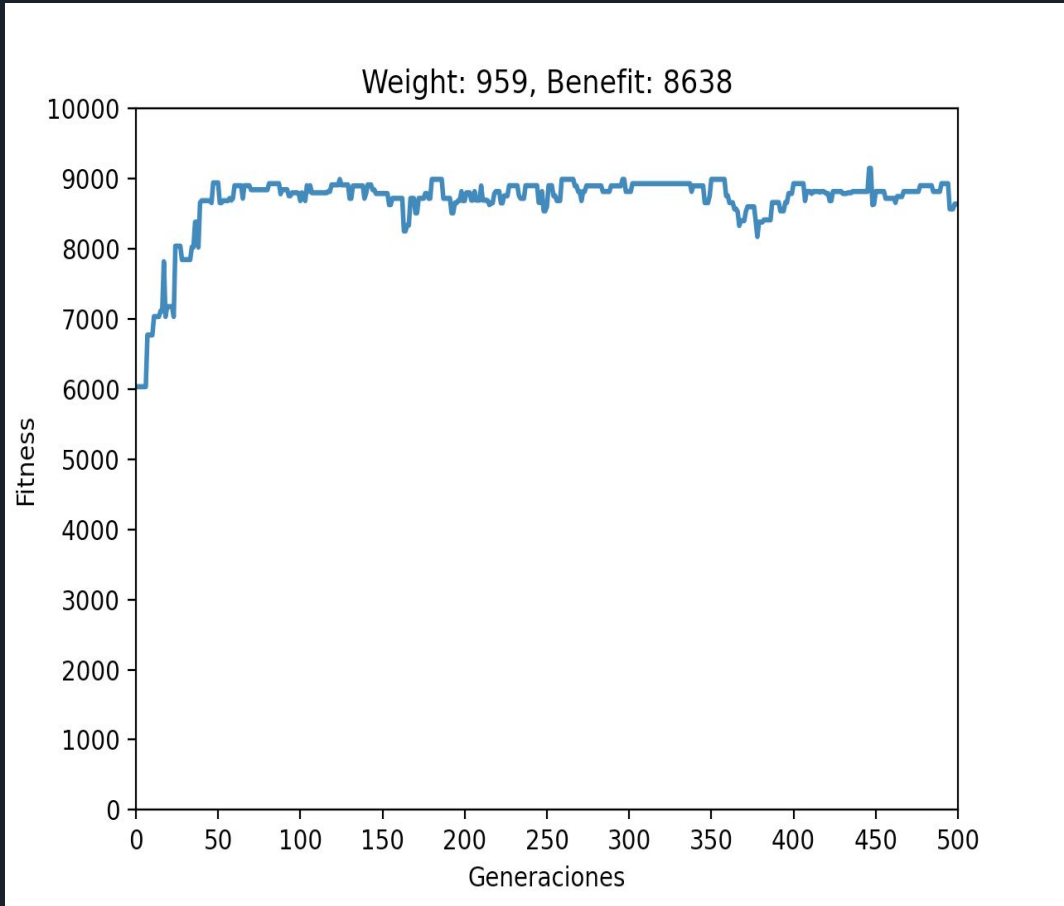
Rank

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- Mutación = 0,005
- Cruza = Uniforme
- Unchanged = 50
- Max = 500



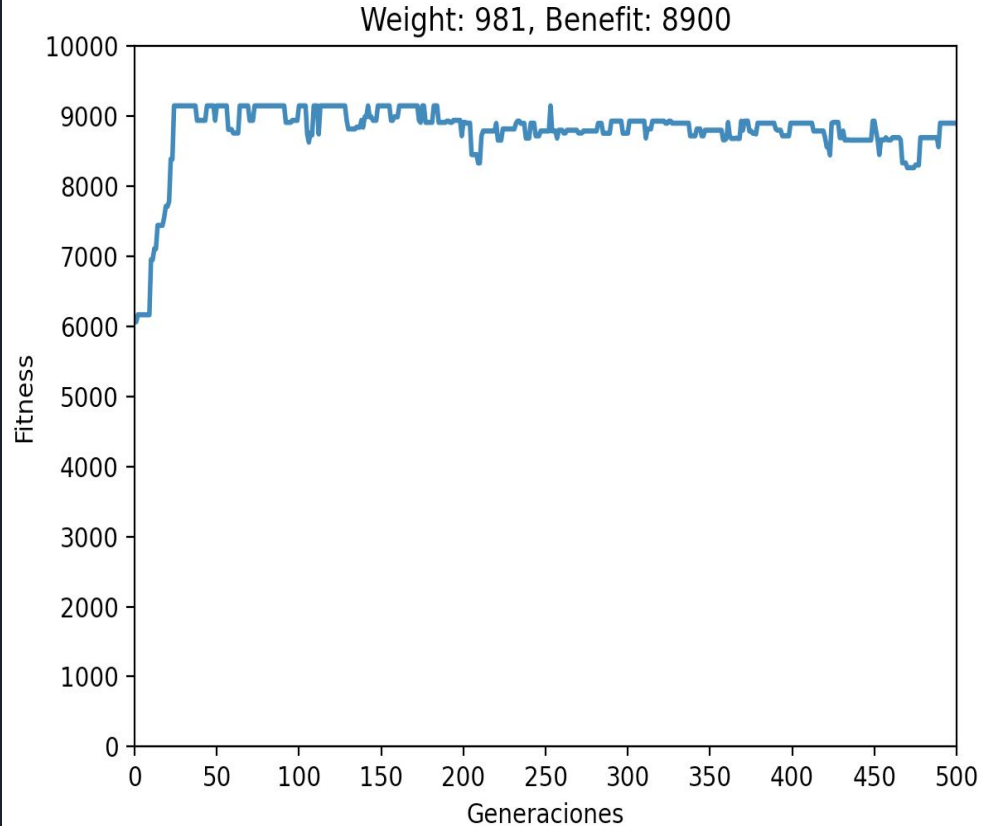
Ruleta

- $P = 100$
- Mutación = 0,005
- Cruza = Simple
- Unchanged = 50
- Max = 500



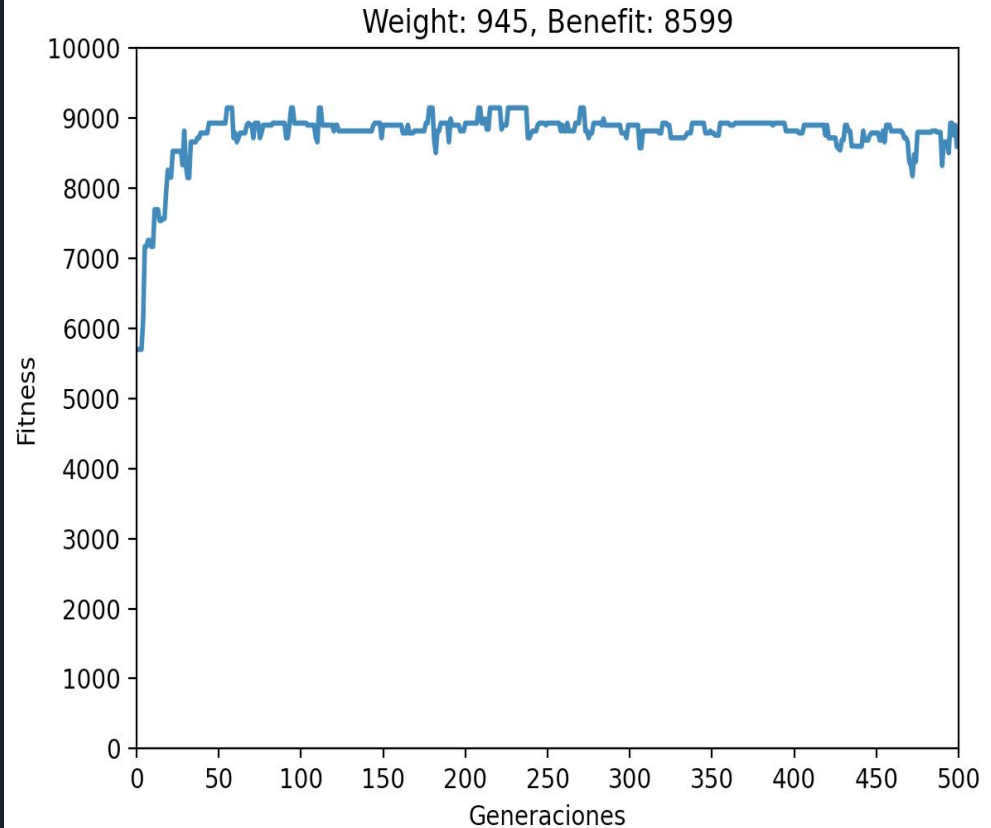
Ruleta

- $P = 100$
- Mutación = 0,005
- Cruza = Múltiple
 - ◆ Points = 2
- Unchanged = 50
- Max = 500



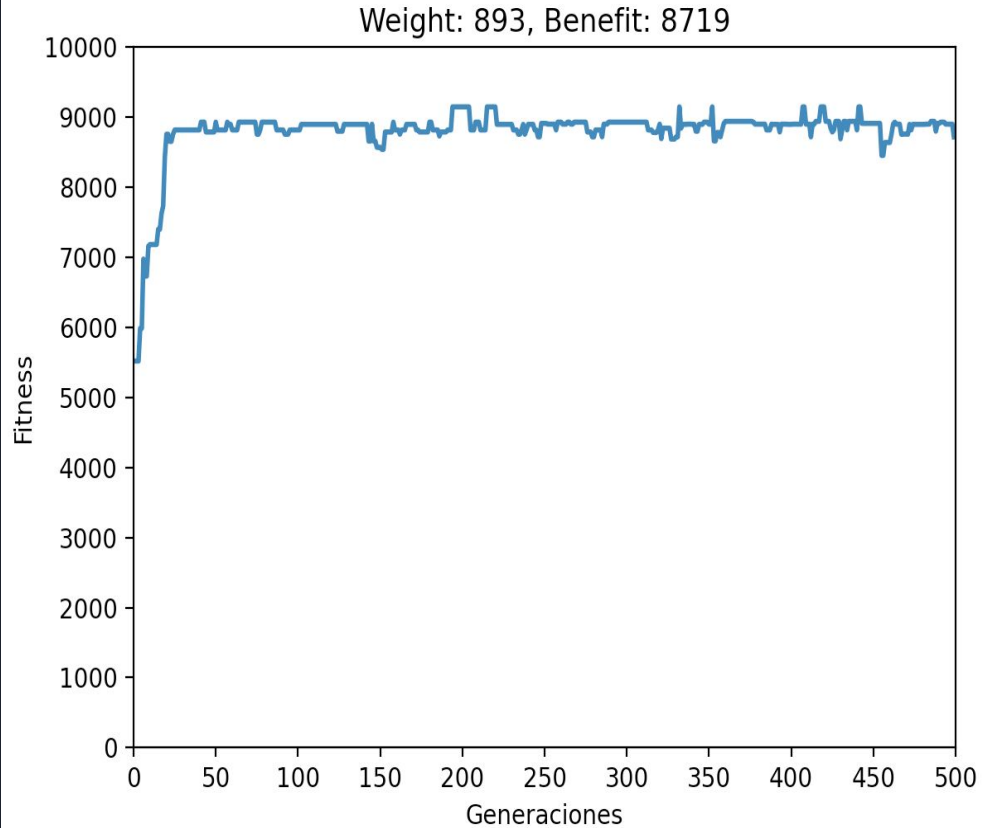
Ruleta

- $P = 100$
- Mutación = 0,005
- Cruza = Múltiple
 - ◆ Points = 5
- Unchanged = 50
- Max = 500



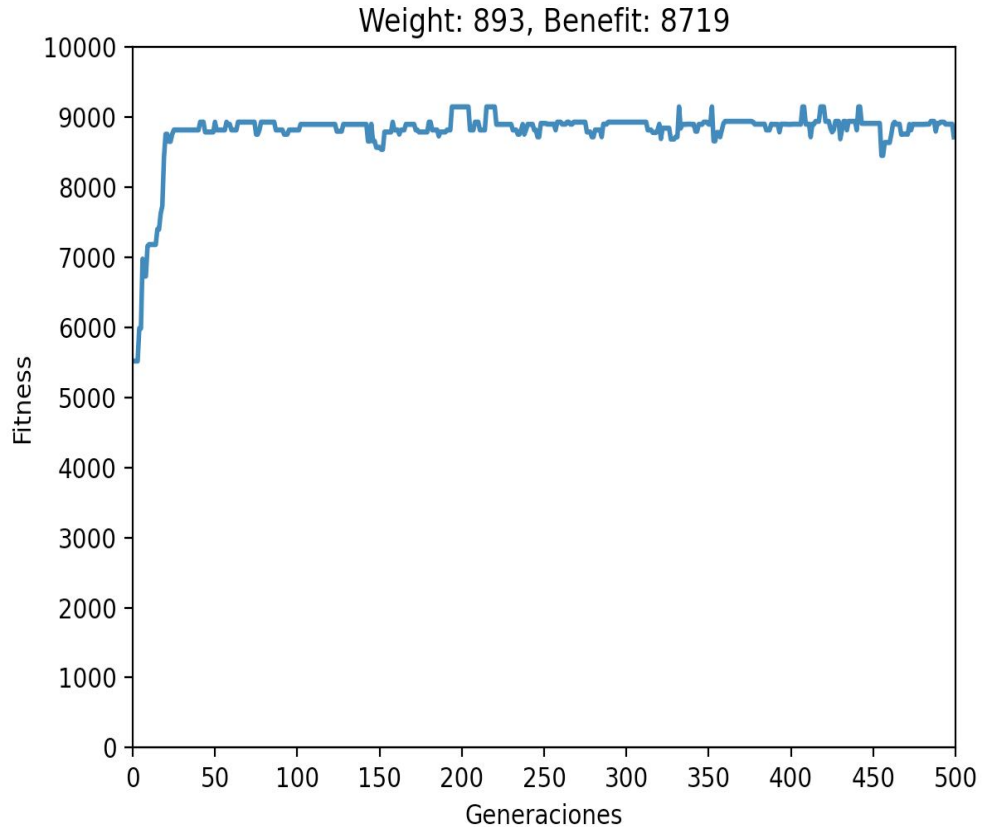
Ruleta

- $P = 100$
- Mutación = 0,005
- Cruza = Múltiple
 - ◆ Points = 10
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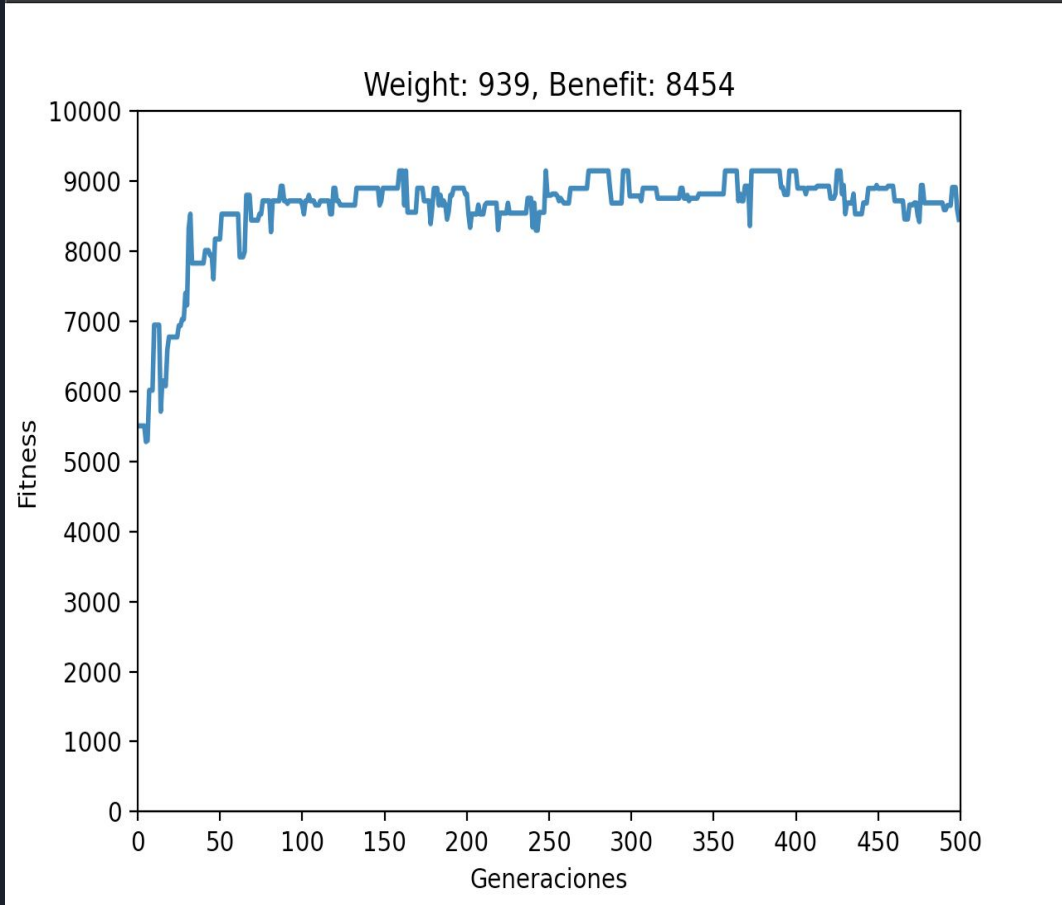
Ruleta

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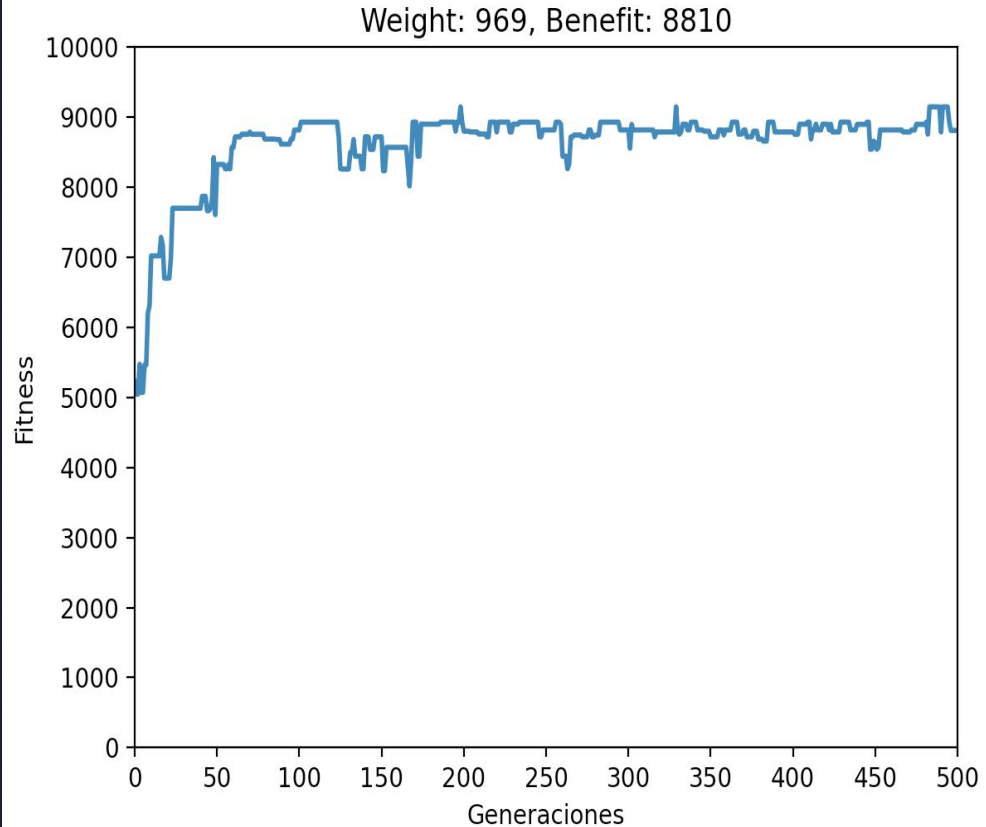
Boltzman

- $P = 100$
- $K = 1$
- $T_0 = 100$
- $T_c = 70$
- Mutación = 0,005
- Cruza = Simple
- Unchanged = 50
- Max = 500



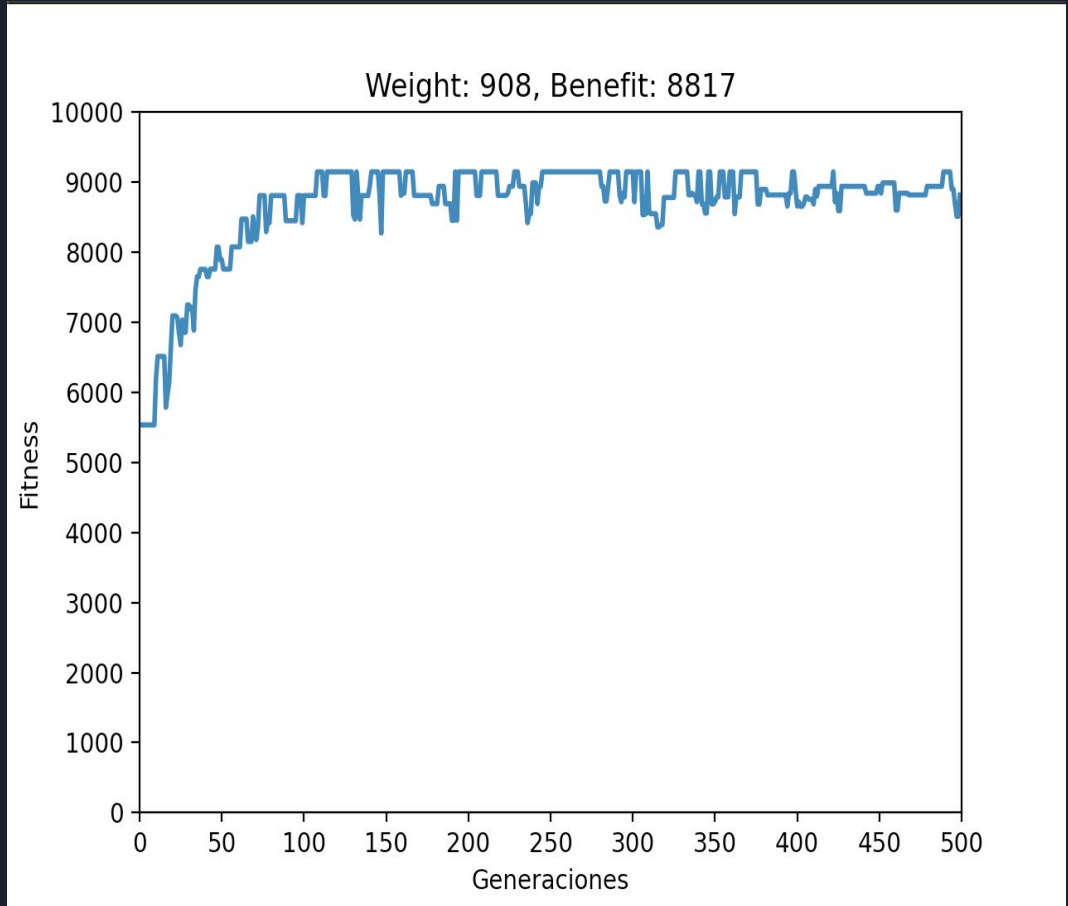
Boltzman

- $P = 100$
- $K = 1$
- $T_0 = 100$
- $T_c = 70$
- Mutación = 0,005
- Cruza = Múltiple
 - ◆ Points = 2
- Unchanged = 50
- Max = 500



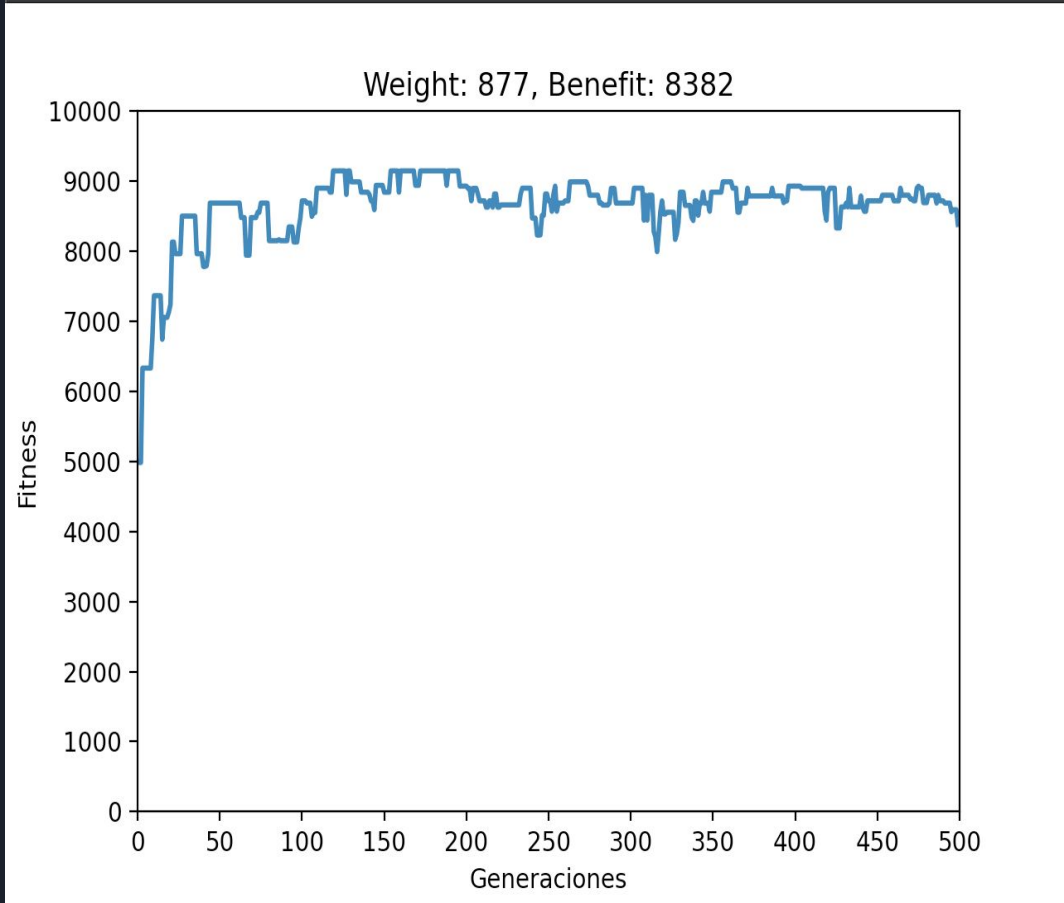
Boltzman

- $P = 100$
- $K = 1$
- $T_0 = 100$
- $T_c = 70$
- Mutación = 0,005
- Cruza = Múltiple
 - ◆ Points = 5
- Unchanged = 50
- Max = 500



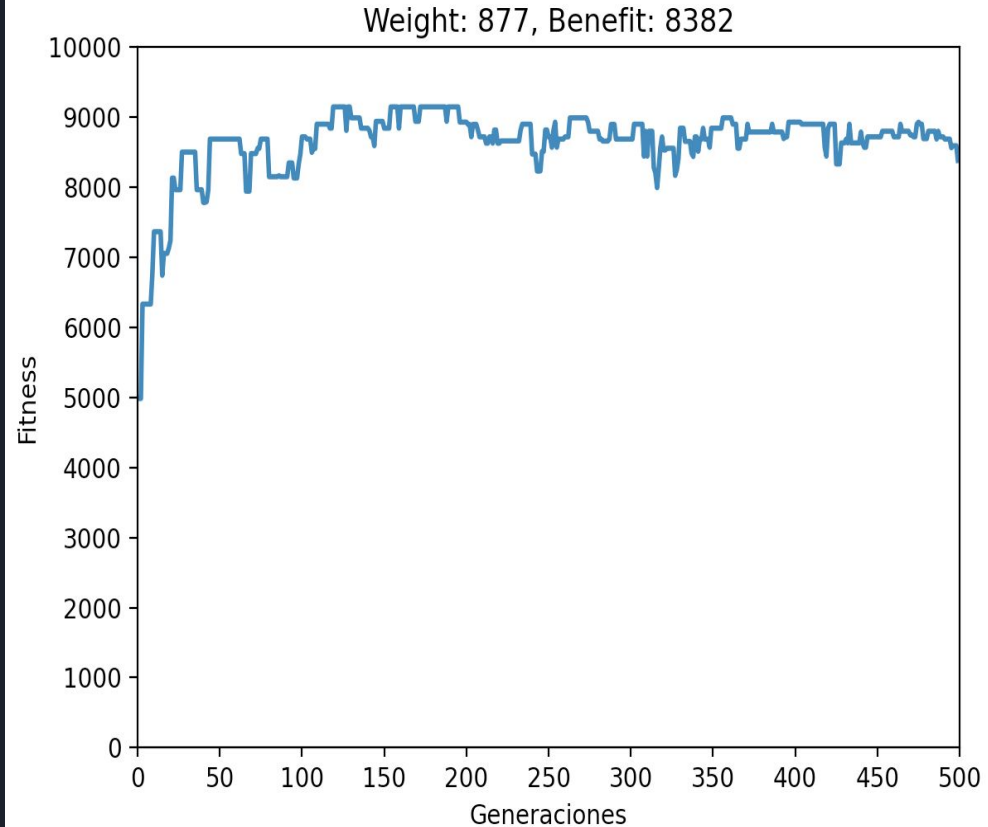
Boltzman

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- $K = 1$
- $T_0 = 100$
- $T_c = 70$
- Mutación = 0,005
- Cruza = Múltiple
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Boltzman

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- $T_c = 70$
- Mutación = 0,005
- Cruza = Uniforme
- Unchanged = 50
- Max = 500





Problemas



→ Población Inicial



→ Mutación

