**CASE OF STUDY:** For a given table of data, implement, train and test a model

1. Preprocess data
2. Design a linear model
3. Derive and program the learning rule with gradient descent
4. After training, test how your model works for values that are in the original training table

Data: *Panadol baby*

|  |  |  |
| --- | --- | --- |
| **Body weight**  **[kg]** | **Age**  **[years]** | **Dosage**  **[ml]** |
| 6-8 | 0.3- 0.5 | 4.0 |
| 8-10 | 0.5-1 | 5.0 |
| 10-13 | 1-2 | 7.0 |
| 13-15 | 2-3 | 9.0 |
| 15-21 | 3-6 | 10.0 |
| 21-29 | 6-9 | 14.0 |
| 29-42 | 9-12 | 20.0 |

1. **Preprocess data… PROMEDIADO**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  | 7 | 0.4 | 4.0 |
|  | 9 | 0.75 | 5.0 |
|  | 11.5 | 1.5 | 7.0 |
|  | 14 | 2.5 | 9.0 |
|  | 18 | 4.5 | 10.0 |
|  | 25 | 7.5 | 14.0 |
|  | 35.5 | 10.5 | 20.0 |

1. **Design a linear model**

Linear model: 





1. **Derive and program the learning rule with gradient descent**

**By gradient descent:**



Función objetivo: 







**Colocando la tasa de aprendizaje:**

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**Programa:**

Update at :

 // Build at every

 //has to be an array

 // vector multiplication if and are “arrays”





:

Red Neuronal

w  

**xout**

**wout**

**W**

Entrada

Capa de salida

Capa oculta

