**Lista de Exercícios #7**

Árvores de Decisão

1-

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Exemplos** |  |  |  | **Out y** |
|  | 1 | 0 | 0 | 0 |
|  | 1 | 0 | 1 | 0 |
|  | 0 | 1 | 0 | 0 |
|  | 1 | 1 | 1 | 1 |
|  | 1 | 1 | 0 | 1 |

Cálculo da entropia:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **P** | **N** |  |
| 1 | 2 | 2 | 4 |
| 0 | 0 | 1 | 1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **P** | **N** |  |
| 1 | 2 | 1 | 3 |
| 0 | 0 | 2 | 2 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **P** | **N** |  |
| 1 | 1 | 1 | 2 |
| 0 | 1 | 2 | 3 |

Cálculo do ganho de informação:

A picture containing clock

Description automatically generated

Atualizando as tabelas:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **P** | **N** |  |
| 1 | 2 | 0 | 2 |
| 0 | 0 | 1 | 1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **P** | **N** |  |
| 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 2 |

A close up of a logo

Description automatically generated

2-

|  |  |  |
| --- | --- | --- |
| **XOR** | | |
|  |  | y |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

Cálculo da entropia:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **P** | **N** |  |
| 1 | 1 | 1 | 2 |
| 0 | 1 | 1 | 2 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **P** | **N** |  |
| 1 | 1 | 1 | 2 |
| 0 | 1 | 1 | 2 |

Cálculo do ganho de informação:

A picture containing clock, drawing

Description automatically generated

Como as duas são iguais, basta escolher uma para ser o nó raiz. Neste caso, o nó raiz escolhido foi .

Para

|  |  |  |
| --- | --- | --- |
|  |  | y |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

Para

|  |  |  |
| --- | --- | --- |
|  |  | y |
| 0 | 0 | 1 |
| 0 | 1 | 0 |

A close up of a logo

Description automatically generated