**Ejercitación Nro. 2**

**Modos de Representación**

Utilizando los mismos datos que en el Ejercicio 1, realicemos la segundo etapa de esta Ejercitación.

Utilizar estos cuatro conjuntos de datos

1. A=20 y B=14
2. A= 54 y B=19
3. A=187 y B=137
4. A=178 y B=145

Tareas a realizar, utilizar las plantillas adjuntas

**Segunda Etapa**

1. Convertir ambos números a Naturales de 8 bits. (solo binarios)
2. Realizar la suma en binario y calcular los flags
3. Realizar la resta A-B en binario y calcular los flags
4. Analizar los flags y sacar conclusiones considerando a A y B Naturales
5. Analizar los flags y sacar conclusiones considerando A y B Enteros
6. En el caso de las restas, analizar de acuerdo a los flags la relación mayor-menor entre Minuendo y Sustraendo, tanto para Naturales y Enteros
7. Comprobar que lo calculado en 4 y 6 es correcto, convirtiendo a decimal
8. Comprobar que lo calculado en 5 y 6 es correcto, convirtiendo a decimal

**CONJUNTO DE DATOS a.**

**Suma y Resta Naturales / Enteros 8 bits, para conjunto de datos a.**

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|  |  | **Decimal** |  |  |  | **Binario Suma** |  |  |  | **Binario Resta** |  |  |  | **Resta Operación** |  |
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| **+** |  |  |  | **+** |  |  |  | **-** |  |  |  | **+** |  |  |  |
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|  |  |  |  | C | = | ~~0~~ |  |  |  |  |  |  |  |  |  |
|  |  |  |  | V | = | 0 |  |  |  |  |  |  |  |  |  |
|  |  |  |  | S | = | 0 |  |  |  |  |  | C | = | 0 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **-** |  |  |  | Z | = | 0 |  |  |  |  |  | V | = | 0 |  |
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|  |  |  |  |  |  |  |  |  |  |  |  | S | = | 0 |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  |  |  |  |  |  |  |  |  |  |  |  | Z | = | 0 |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  | **Naturales** | |  |  |  | |  |  |  | |  |  |  | |  |
|  | Resultado Suma | |  |  | **Correcto** | |  |  | Resultado Resta | |  |  | **Correcto** | |  |
|  | Por qué? | |  |  | **C=0** | |  |  | Por qué? | |  |  | **C=0** | |  |
|  | **Enteros** | |  |  |  | |  |  |  | |  |  |  | |  |
|  | Resultado Suma | |  |  | **Correcto** | |  |  | Resultado Resta | |  |  | **Correcto** | |  |
|  | Por qué? | |  |  | **V=0** | |  |  | Por qué? | |  |  | **V=0** | |  |

**Comparación Mayor Menor – Comprobación de Enteros**

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|  |  | **Naturales** |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **Minuendo** |  | **>** |  | **Sustraendo** |  |  |  |  |  |  |  |  |  |
|  |  | **De acuerdo a Flags:** |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  | **Enteros** |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **Minuendo** |  | **>** |  | **Sustraendo** |  |  |  |  |  |  |  |  |  |
|  |  | **De acuerdo a Flags:** |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  | Comprobación Enteros SUMA: |  |  |  | Comprobación Enteros RESTA: |  |  |  |  |  |  |  |  |  |
|  |  | Resultados UAL |  |  |  | Resultados UAL |  |  |  |  |  |  |  |  |  |
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|  |  | Resultado Correcto: |  |  |  | Resultado Correcto: |  |  |  |  |  |  |  |  |  |
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**CONJUNTO DE DATOS b.**

**Suma y Resta Naturales / Enteros 8 bits, para conjunto de datos b.**

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|  |  | **Decimal** |  |  |  | **Binario Suma** |  |  |  | **Binario Resta** |  |  |  | **Resta Operación** |  |
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|  |  |  |  | C | = | 0 |  |  |  |  |  |  |  |  |  |
|  |  |  |  | V | = | 0 |  |  |  |  |  |  |  |  |  |
|  |  |  |  | S | = | 0 |  |  |  |  |  | C | = | 0 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **-** |  |  |  | Z | = | 0 |  |  |  |  |  | V | = | 0 |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  |  |  |  |  |  |  |  |  |  |  |  | S | = | 0 |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  |  |  |  |  |  |  |  |  |  |  |  | Z | = | 0 |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  | **Naturales** | |  |  |  | |  |  |  | |  |  |  | |  |
|  | Resultado Suma | |  |  | **Correcto** | |  |  | Resultado Resta | |  |  | **Correcto** | |  |
|  | Por qué? | |  |  | **C=0** | |  |  | Por qué? | |  |  | **C=0** | |  |
|  | **Enteros** | |  |  |  | |  |  |  | |  |  |  | |  |
|  | Resultado Suma | |  |  | **Correcto** | |  |  | Resultado Resta | |  |  | **Correcto** | |  |
|  | Por qué? | |  |  | **V=0** | |  |  | Por qué? | |  |  | **V=0** | |  |

**Comparación Mayor Menor – Comprobación de Enteros**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  | **Naturales** |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **Minuendo** |  | **>** |  | **Sustraendo** |  |  |  |  |  |  |  |  |  |
|  |  | **De acuerdo a Flags:** |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **Enteros** |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **Minuendo** |  | **>** |  | **Sustraendo** |  |  |  |  |  |  |  |  |  |
|  |  | **De acuerdo a Flags:** |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Comprobación Enteros SUMA: |  |  |  | Comprobación Enteros RESTA: |  |  |  |  |  |  |  |  |  |
|  |  | Resultados UAL |  |  |  | Resultados UAL |  |  |  |  |  |  |  |  |  |
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| **+** |  |  |  |  | **-** |  |  |  |  |  |  |  |  |  |  |
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|  |  | Resultado Correcto: |  |  |  | Resultado Correcto: |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**CONJUNTO DE DATOS c.**

**Suma y Resta Naturales / Enteros 8 bits, para conjunto de datos c.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Decimal** |  |  |  | **Binario Suma** |  |  |  | **Binario Resta** |  |  |  | **Resta Operación** |  |
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| **+** |  |  |  | **+** |  |  |  | **-** |  |  |  | **+** |  |  |  |
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|  |  |  |  | C | = | 0 |  |  |  |  |  |  |  |  |  |
|  |  |  |  | V | = | 0 |  |  |  |  |  |  |  |  |  |
|  |  |  |  | S | = | 0 |  |  |  |  |  | C | = | 0 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **-** |  |  |  | Z | = | 0 |  |  |  |  |  | V | = | 0 |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  |  |  |  |  |  |  |  |  |  |  |  | S | = | 0 |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  |  |  |  |  |  |  |  |  |  |  |  | Z | = | 0 |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  | **Naturales** | |  |  |  | |  |  |  | |  |  |  | |  |
|  | Resultado Suma | |  |  | **Correcto** | |  |  | Resultado Resta | |  |  | **Correcto** | |  |
|  | Por qué? | |  |  | **C=0** | |  |  | Por qué? | |  |  | **C=0** | |  |
|  | **Enteros** | |  |  |  | |  |  |  | |  |  |  | |  |
|  | Resultado Suma | |  |  | **Correcto** | |  |  | Resultado Resta | |  |  | **Correcto** | |  |
|  | Por qué? | |  |  | **V=0** | |  |  | Por qué? | |  |  | **V=0** | |  |

**Comparación Mayor Menor – Comprobación de Enteros**

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|  |  | **Naturales** |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **Minuendo** |  | **>** |  | **Sustraendo** |  |  |  |  |  |  |  |  |  |
|  |  | **De acuerdo a Flags:** |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **Enteros** |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **Minuendo** |  | **>** |  | **Sustraendo** |  |  |  |  |  |  |  |  |  |
|  |  | **De acuerdo a Flags:** |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  | Comprobación Enteros SUMA: |  |  |  | Comprobación Enteros RESTA: |  |  |  |  |  |  |  |  |  |
|  |  | Resultados UAL |  |  |  | Resultados UAL |  |  |  |  |  |  |  |  |  |
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|  |  | Resultado Correcto: |  |  |  | Resultado Correcto: |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**CONJUNTO DE DATOS d.**

**Suma y Resta Naturales / Enteros 8 bits, para conjunto de datos d.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Decimal** |  |  |  | **Binario Suma** |  |  |  | **Binario Resta** |  |  |  | **Resta Operación** |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **+** |  |  |  | **+** |  |  |  | **-** |  |  |  | **+** |  |  |  |
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|  |  |  |  | C | = | 0 |  |  |  |  |  |  |  |  |  |
|  |  |  |  | V | = | 0 |  |  |  |  |  |  |  |  |  |
|  |  |  |  | S | = | 0 |  |  |  |  |  | C | = | 0 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **-** |  |  |  | Z | = | 0 |  |  |  |  |  | V | = | 0 |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  |  |  |  |  |  |  |  |  |  |  |  | S | = | 0 |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  |  |  |  |  |  |  |  |  |  |  |  | Z | = | 0 |  |
|  |  | |  |  |  | |  |  |  | |  |  |  | |  |
|  | **Naturales** | |  |  |  | |  |  |  | |  |  |  | |  |
|  | Resultado Suma | |  |  | **Correcto** | |  |  | Resultado Resta | |  |  | **Correcto** | |  |
|  | Por qué? | |  |  | **C=0** | |  |  | Por qué? | |  |  | **C=0** | |  |
|  | **Enteros** | |  |  |  | |  |  |  | |  |  |  | |  |
|  | Resultado Suma | |  |  | **Correcto** | |  |  | Resultado Resta | |  |  | **Correcto** | |  |
|  | Por qué? | |  |  | **V=0** | |  |  | Por qué? | |  |  | **V=0** | |  |

**Comparación Mayor Menor – Comprobación de Enteros**

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|  |  | **Naturales** |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **Minuendo** |  | **>** |  | **Sustraendo** |  |  |  |  |  |  |  |  |  |
|  |  | **De acuerdo a Flags:** |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  | **Enteros** |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **Minuendo** |  | **>** |  | **Sustraendo** |  |  |  |  |  |  |  |  |  |
|  |  | **De acuerdo a Flags:** |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Comprobación Enteros SUMA: |  |  |  | Comprobación Enteros RESTA: |  |  |  |  |  |  |  |  |  |
|  |  | Resultados UAL |  |  |  | Resultados UAL |  |  |  |  |  |  |  |  |  |
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|  |  | Resultado Correcto: |  |  |  | Resultado Correcto: |  |  |  |  |  |  |  |  |  |
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