Actividad 2: Tipos de datos

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1. Descripción de la actividad

La relación de longitud del patrón de bits y número de símbolos que desean representarse está determinado por la ecuación $l = log_2(N)$ donde l es la longitud del patrón de bits y N es el número de símbolos que conforma el alfabeto que se requiere representar. [1]

2. Resultados

$$\text{Si } E = \{x|x \in \text{abecedario estadounidense}\}, \text{ entonces } l = \lceil log_2(|E|)\rceil = \lceil log_2(26)\rceil = 5 \tag{1}$$

$$M = \{x|x \in \text{abecedario mexicano}\}, l = \lceil log_2(|M|)\rceil = \lceil log_2(27)\rceil = 5 \tag{2}$$

$$A = \{x|x \in \text{abecedario alemán}\}, l = \lceil log_2(|A|)\rceil = \lceil log_2(29)\rceil = 5 \tag{3}$$

$$C = \{x|x \in \text{pictogramas chinos}\}, l = \lceil log_2(|C|)\rceil = \lceil log_2(8000)\rceil = 13 \tag{4}$$

$$S = \{x|x \in \text{caracteres ASCII}\}, l = \lceil log_2(|S|)\rceil = \lceil log_2(128)\rceil = 7 \tag{5}$$

$|E| = 26$ por [2], $|M| = 27$ por [3], $|A| = 29$ por [4], $|C| = 8000$ por [5] (el promedio de pictogramas conocidos por una persona educada) y $|C| = 27$ por [6].

Referencias

[1] Forouzan, B., 2017. Foundations of Computer Science: 4th Edition. Andover: Hampshire: Cengage Learning EMEA.

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[4] 2014. BBC - Languages - German - A Guide to German - The German alphabet. Bbc.co.uk. Retrieved February 7, 2021 from http://www.bbc.co.uk/languages/german/guide/alphabet.shtml

[5] 2014. BBC - Languages - Real Chinese - Mini-guides - Chinese characters. Bbc.co.uk. Retrieved February 7, 2021 from http://www.bbc.co.uk/languages/chinese/real_chinese/mini_guides/characters/characters_howmany.shtml

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