#### **Data Structure:**

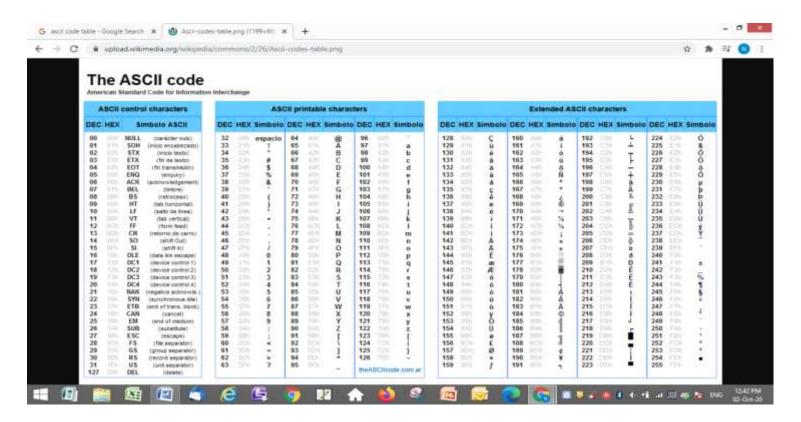
The Values that are stored inside a computer as a series of 0's and 1's.

A single 0 or 1 is called a binary digit or bit. Any Group of 0's and 1's can be used to represent a specific character.

The number of bits used to store one character is called a byte.

The complete set of characters that the computer is uses is known as its character set.

Each of the character set should must have its own binary value, which the code by which the computer



recognizes.

2) Unicode: Is more recent ,16 bit code that uses two bytes.

Using 16-bits makes it possible to represent over 65,000 characters. This mean that all the characters used by the world's languages can be represented in Unicode.

char	decimal unicode	iso8859	char	decimal unicode	iso8859	char	decimal unicode	iso8859	
€	8364	128	\$	36	36	©	169	169	

# for the following characters, the digits for decimal unicode and iso 8859-1 are identical.

cha	cod	cha	cod	cha	cod	cha	cod	cha	cod	cha	cod	cha	cod	cha	cod
r	e	r	e	r	e	r	e	r	e	r	e	r	e	r	e
	160	i	161	¢	162	3	163	¤	164	1	165	-	166	§	167
••	168	©	169	О	170	«	171		172		173	®	174	i	175
0	176	<u>±</u>	177	2	178	3	179	•	180	μ	181	1	182		183
5	184	1	185	О	186	<b>»</b>	187	3/4	188	1/2	189	3/4	190	i	191
à	192	-	193	â	194	ã	195	ä	196	å	197	æ	198	ç	199
è	200	é	201	ê	202	ë	203	ì	204	í	205	î	206	ï	207
ð	208	ñ	209	ò	210	ó	211	ô	212	õ	213	ö	214	×	215
ø	216	ù	217	ú	218	û	219	ü	220	ý	221	þ	222	В	223
à	224	á	225	â	226	ã	227	ä	228	å	229	æ	230	ç	231
è	232	é	233	ê	234	ë	235	ì	236	í	237	î	238	ï	239
ð	240	ñ	241	ò	242	ó	243	ô	244	õ	245	ö	246	÷	247
ø	248	ù	249	ú	250	û	251	ü	252	ý	253	þ	254	ÿ	255

#### **Representation of Data**

## **DATA REPRESENTATION**

Data representation refers to the form in which data is stored, processed and transmitted. Digital devices store data using the binary number system.

### **BITS AND BYTES**

You can combine several bits (0s and 1s). If you combine 8 bits together, it is called a "byte". A byte can represent any number between 0 (represented in bits as 00000000) and 255 (represented in bits as 111111111).

1 B	8 b	b = bit			
1 KB	1024 B	B = byte			
1 MB	1024 KB	KB = Kilobyte  MB = Megabyte  GB = Gigabyte  TB = Terabyte			
1 GB	1024 MB				
1 TB	1024 GB				
1 PB	1024 TB	PB = Petabyte			

A computer needs to store and use different types of data in the operation of the system.All of theses different types of data look the same in the primary memory as they are all stored in a binary representation.

- 1) Numeric data: real number & integer number
- 2) Boolean data: Binary data (1 and 0)
- 3) Character Data: can be anything like 4, & , A
- 4) String Data: A sequence of characters stored together. (Female, Male..etc)
- 5) Other Data types: date & time , Currency.