PW skills

JAVA WITH DSA AND SYSTEM DESIGN 2.0

ASSIGNMENT TOPIC-

UNITS OF MEMORY MEASUREMENT.

SUBMITTED BY -

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***WHAT IS MEMORY -**

Memory is basically a device that has the capacity to Store information.A memory unit is the amount of data that the memory can hold. Besides, we measure this storage capacity in terms of bytes. Moreover ,there are different units of memory as per the requirement, before studying the units of memory let us know about the memory.

***Parts of memory -**

1.Primary memory- This is the internal memory that stores the data and instructions of the CPU.It is volatile in nature (data is lost when the power is off/disconnected).

The primary memory has two types :

1.RAM (Random access memory)

As per the name, data can be accessed randomly and quickly

2.ROM (Read only Memory)

As per the name, we can only read data and cannot write (store) to it.

Secondary memory

As we know that the primary memory is volatile therefore,we need some devices to Store the data permanently so we use some external storage device fore this purpose which we name as the secondary memory. Some examples; CD,DVD, etc.

Unit's of Memory

The storage capacity of the memory is expressed in various unit's of Memory.
These are follows.

Bit:

A microprocessor uses binary digits 0 and 1 to decide the OFF nd ON state respectively,of various circuits.furthermore ,a bit is the smallest unit of representation in the language

Nibble:

A nibble is a collection of 4 bits

Byte:

A byte is the representation of a group of 8 bit .Moreover,a byte is a unit that express any word, symbol,or charector in the computer language.Besides, computer memory is always in turned of multiple of bytes.

Word:

A computer word is similar to a byte,as it is also a group of bits. Moreover,a computer word is fixed for each computer.At the same time is various from computer to computer. Besides,the length of a computer word is the word- size of word length.Therefore, a computer stores information in the form of computer word.

Kilobyte:

• It is the most common unit of memory which is the smallest of all but, It is greater than the byte.

• The abbreviation for kilobytes is "KB".

• It contains 1000 bytes . Besides ,It is synonyms to kilobytes which contain 1024 (2^10) bytes.

• Megabytes usually measure the size of text documents, graphics of websites, individual files,etc.

Megabytes:

•The abbreviations for megabytes is "MB".

• It contains 1000,000 bytes. Besides, it is synonym to mebibytes which contains 1048576(2^20) bytes

•kilobytes usually measure the size of large files. For example high - resolution images, songs, storage of compact disks,etc.

Gigabyte:

•The abbreviation for the gigabyte is 'GB' or 'gigs'.

• It contains 1000,000,000 bytes.
Besides,it is synonyms to gigabytes which contains 1073741824(2^30) bytes .

Terabyte:

- The abbreviation for terabytes is "TB".
- It contains onetrillion bytes. Besides, it is synonyms to tebibytes which contain 2^40 bytes.

- Kilobytes usually measure the capacity of large storage devices For example HDDs (Hard Disk Drives)

Petabyte:

- The abbreviation for petabyte is "PB".
- It contains 10^15 bytes . Besides ,it is synonyms to petabytes which contains 2^50 bytes.
- Petabytes usually measure the total data storage in large networks or server farms. For example,the data in Google or Facebook data servers is around more than 10 PBs.

Exabyte:

- The abbreviation for exabyte is "EB".
- It contains 10^18 bytes. Besides,it is synonyms to exabytes.

- The exabytes unit is so large that it does not even measure the storage of large cloud servers.Rather ,it can be used to measure the amount of data transfer over the internet for a certain time limit.

Zettabyte:

- The abbreviation for zettabyte is"ZB".
- It contains 10^21 bytes.Besides, it is synonyms to zettabytes which contains 2^70 bytes.
- It can measure a huge amount of data. In fact,the whole data in the word is just few zettabytes.

Yottabyte:

- The abbreviation for yottabyte is "YB".
- It contains 10^24 zettabytes Besides, it is synonyms to yottabyte which contains 2^80.

* ***Memory measurement units :-***

1 Nibble = 4 bits

1 Byte = 8 bits

1024 Bytes = 1 KB

1024 KB = 1 MB

1024 MB = 1 GB

1024 GB = 1 TB

1024 TB = 1 PB

1024 PB = 1 EB

1024 EB = 1 ZB

1024 ZB= 1 YB

Some important questions of this assignment:-

Questions 1 - what is memory and units of memory?
Ans. Memory is basically a device that has the capacity to store information.A memory unit is the amount of data that the memory can hold.

Questions 2 - List various units of memory.
Ans. Various units of memory are as follows:

- Bit
- Nibble
- Byte
- Kilobyte
- Megabyte

- Gigabyte
- Terabyte
- Petabyte
- Exabyte
- Zettabyte
- Yottabyte

END..