1.1.2 Uses of Hexa Decimals

HTML Colors:

One HD digit takes 4 bits.
For example HTML web page is able to show 16.8 million colors.
16.8 million numbers can be represented using 24 bits
That is 2^{24}.
This means every single color that a HTML programmer wants to show over screen will require to use 24 bits.

E.g: RED FF0000
BLUE 00FF00
GREEN 0000FF

MAC Address:

Media Access Control Card, also known as LAN Card, NIC card or Ethernet Card.
This device represents every computer over the Internet uniquely.
Therefore its ID, Number or address must be unique and naturally big enough.
It is held in 6 Bytes.
E.g: C9:B3:A7:45:F1:AD
Where first three Bytes represent the company and later 3 Bytes represent the serial of the manufactured MAC device.

This way every manufacturer can built 16.8 million MAC under one ID.
There are two types of MAC addresses:
UAA, Universally Administrated MAC add; given by the manufacturer.
LAA, Locally Administrated MAC Address; given by the network administrators when they change the UAA address at their will and for some need.

Assembly Language and Machine Code:

Assembly and machine codes are low level languages. Assembly Language makes use of memory addresses which are in billions. To show these billions of addresses assembly programmers use H-D numbers instead of binary or decimal numbers.

E.g: STO 007A5BF9

↳ An address in hexa which is in billion.

When this address 007A5BF9 is converted to machine form it becomes (in binary):

00000000011111010010110111111001

Debugging:

In case of system based programming, when microprocessor hangs, programmers try to capture data in RAM to evaluate it later to eradicate errors from software to work smooth.

The data in RAM (sometimes called image) is captured in binary form and is complex in nature to be understood easily. For this reason it is converted to its equivalent Hexa Decimal form; called "memory dump".