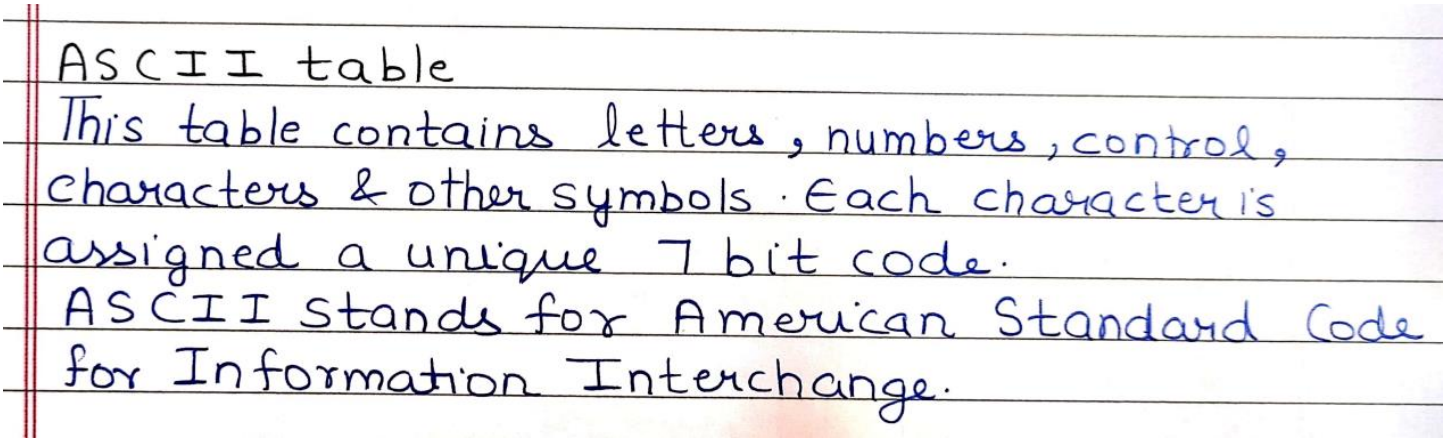
**Homework Solutions (28th January 2023)**

**Q1. What is the difference between compiler and interpreter?**

Ans1.

**Q2. What is ASCII Table?**

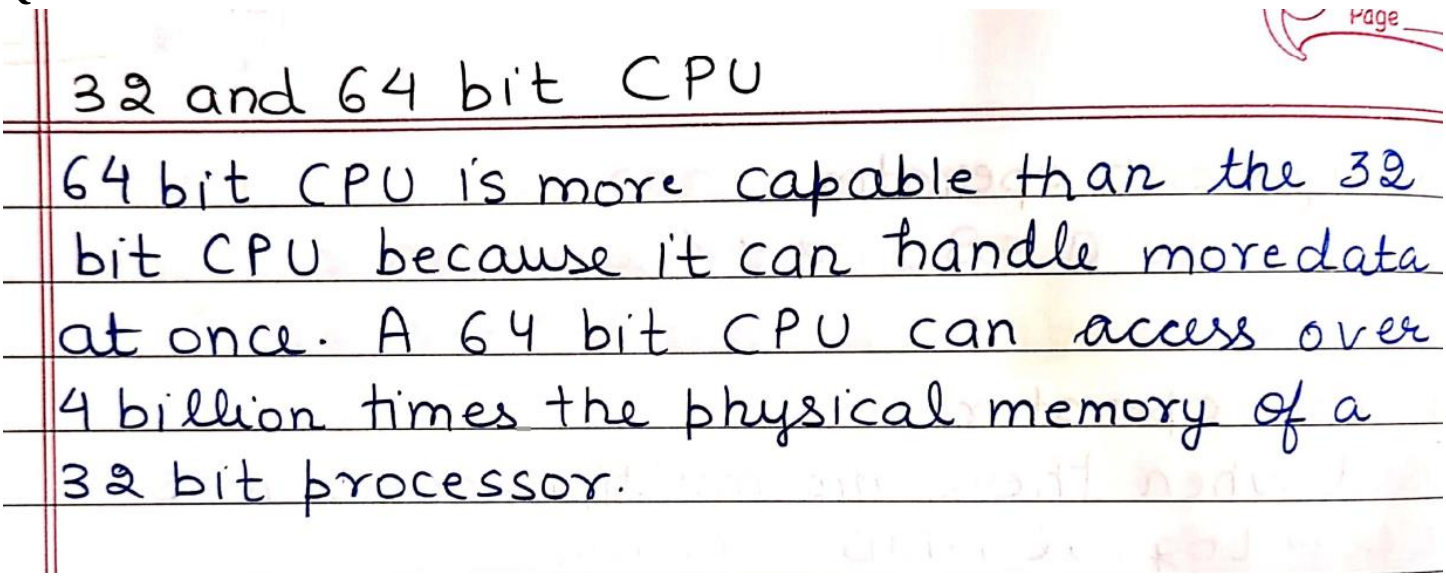
Ans2.




# ASCII TABLE

| Decimal | Hex | Char | Decimal | Hex | Char | Decimal | Hex | Char | Decimal | Hex | Char |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | [NULL] | 32 | 20 | [SPACE] | 64 | 40 | @ | 96 | 60 | ` |
| 1 | 1 | [START OF HEADING] | 33 | 21 | ! | 65 | 41 | A | 97 | 61 | a |
| 2 | 2 | [START OF TEXT] | 34 | 22 | " | 66 | 42 | B | 98 | 62 | b |
| 3 | 3 | [END OF TEXT] | 35 | 23 | # | 67 | 43 | C | 99 | 63 | c |
| 4 | 4 | [END OF TRANSMISSION] | 36 | 24 | $ | 68 | 44 | D | 100 | 64 | d |
| 5 | 5 | [ENQUIRY] | 37 | 25 | % | 69 | 45 | E | 101 | 65 | e |
| 6 | 6 | [ACKNOWLEDGE] | 38 | 26 | & | 70 | 46 | F | 102 | 66 | f |
| 7 | 7 | [BELL] | 39 | 27 | ' | 71 | 47 | G | 103 | 67 | g |
| 8 | 8 | [BACKSPACE] | 40 | 28 | ( | 72 | 48 | H | 104 | 68 | h |
| 9 | 9 | [HORIZONTAL TAB] | 41 | 29 | ) | 73 | 49 | I | 105 | 69 | i |
| 10 | A | [LINE FEED] | 42 | 2A | * | 74 | 4A | J | 106 | 6A | j |
| 11 | B | [VERTICAL TAB] | 43 | 2B | + | 75 | 4B | K | 107 | 6B | k |
| 12 | C | [FORM FEED] | 44 | 2C | , | 76 | 4C | L | 108 | 6C | l |
| 13 | D | [CARRIAGE RETURN] | 45 | 2D | - | 77 | 4D | M | 109 | 6D | m |
| 14 | E | [SHIFT OUT] | 46 | 2E | . | 78 | 4E | N | 110 | 6E | n |
| 15 | F | [SHIFT IN] | 47 | 2F | / | 79 | 4F | O | 111 | 6F | o |
| 16 | 10 | [DATA LINK ESCAPE] | 48 | 30 | 0 | 80 | 50 | P | 112 | 70 | p |
| 17 | 11 | [DEVICE CONTROL 1] | 49 | 31 | 1 | 81 | 51 | Q | 113 | 71 | q |
| 18 | 12 | [DEVICE CONTROL 2] | 50 | 32 | 2 | 82 | 52 | R | 114 | 72 | r |
| 19 | 13 | [DEVICE CONTROL 3] | 51 | 33 | 3 | 83 | 53 | S | 115 | 73 | s |
| 20 | 14 | [DEVICE CONTROL 4] | 52 | 34 | 4 | 84 | 54 | T | 116 | 74 | t |
| 21 | 15 | [NEGATIVE ACKNOWLEDGE] | 53 | 35 | 5 | 85 | 55 | U | 117 | 75 | u |
| 22 | 16 | [SYNCHRONOUS IDLE] | 54 | 36 | 6 | 86 | 56 | V | 118 | 76 | v |
| 23 | 17 | [END OF TRANS. BLOCK] | 55 | 37 | 7 | 87 | 57 | W | 119 | 77 | w |
| 24 | 18 | [CANCEL] | 56 | 38 | 8 | 88 | 58 | X | 120 | 78 | x |
| 25 | 19 | [END OF MEDIUM] | 57 | 39 | 9 | 89 | 59 | Y | 121 | 79 | y |
| 26 | 1A | [SUBSTITUTE] | 58 | 3A | : | 90 | 5A | Z | 122 | 7A | z |
| 27 | 1B | [ESCAPE] | 59 | 3B | ; | 91 | 5B | [ | 123 | 7B | { |
| 28 | 1C | [FILE SEPARATOR] | 60 | 3C | < | 92 | 5C | \ | 124 | 7C | \| |
| 29 | 1D | [GROUP SEPARATOR] | 61 | 3D | = | 93 | 5D | ] | 125 | 7D | } |
| 30 | 1E | [RECORD SEPARATOR] | 62 | 3E | > | 94 | 5E | ^ | 126 | 7E | ~ |
| 31 | 1F | [UNIT SEPARATOR] | 63 | 3F | ? | 95 | 5F | _ | 127 | 7F | [DEL] |

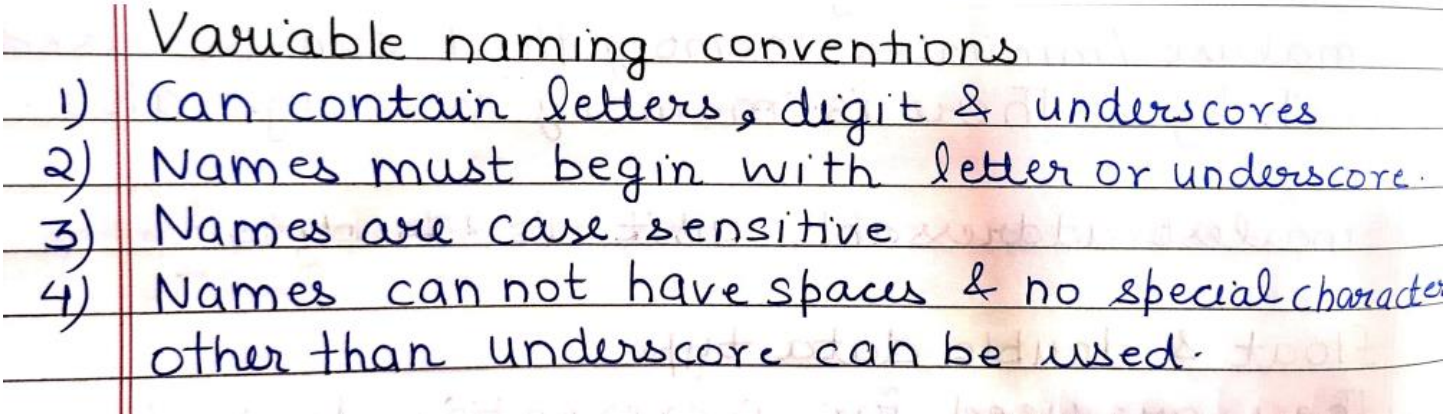
**Q3. What is the difference between 32-bit and 64-bit CPU?**



32 and 64 bit CPU

64 bit CPU is more capable than the 32 bit CPU because it can handle more data at once. A 64 bit CPU can access over 4 billion times the physical memory of a 32 bit processor.

**Q4. Explore various naming conventions of naming a variable.**



Variable naming conventions

1) Can contain letters, digit & underscores
2) Names must begin with letter or underscore.
3) Names are case sensitive
4) Names can not have spaces & no special character other than underscore can be used.

**Q5. Explore the associativity and precedence table.**

| OPERATOR | TYPE | ASSOCIAVITY |
|---|---|---|
| () [] . -> | | left-to-right |
| ++ -- + - ! ~ (type) * & sizeof | Unary Operator | right-to-left |
| * / % | Arithmetic Operator | left-to-right |
| + - | Arithmetic Operator | left-to-right |
| << >> | Shift Operator | left-to-right |
| < <= > >= | Relational Operator | left-to-right |
| == != | Relational Operator | left-to-right |
| & | Bitwise AND Operator | left-to-right |
| ^ | Bitwise EX-OR Operator | left-to-right |
| \| | Bitwise OR Operator | left-to-right |
| && | Logical AND Operator | left-to-right |
| \|\| | Logical OR Operator | left-to-right |
| ? : | Ternary Conditional Operator | right-to-left |
| = += -= *= /= %= &= ^= \|= <<= >>= | Assignment Operator | right-to-left |
| , | Comma | left-to-right |

# Precedence & associativity table

| Operators | As sociativity |
|---|---|
| Unary | Right-to-left |
| * / % | |
| + - | |
| <<, >> | |
| <, <=, >, >= | Left-to-right |
| ==, != | |
| & | |
| ^ | |
| \| | |
| && | |
| \|\| | |
| Ternary | Right to left |
| Assignment | Right to left |
| , | Left to right |

→ 10 + 20 * 30 different and + and * have precedence the associativity is from left to right.

10 + 20 * 30
lower higher

This will be solved as 10 + (20 * 30)
= 10 + 600
= 610

Ex→ 100 + 200 / 10 - 3 * 10
First we will solve / & * as they are having higher precedence than + . First / & then * as associativity is from left to right.
100 + 20 - 3 * 10
100 + 20 - 30
(100 + 20) - 30
120 - 30 = 90 Ans

Note→ Instead of learning the associativity & precedence table, it is better to use brackets as brackets will always be solved first.