Job-Sequencing

Let there be 14 jobs with the profit of [22, 19, 29, 28, 30, 21, 27, 25, 24, 26, 14, 27, 19, 11] job completion time [3, 3, 8, 6, 4, 5, 10, 4, 6, 12, 13, 2, 14, 1],

Huffman Coding

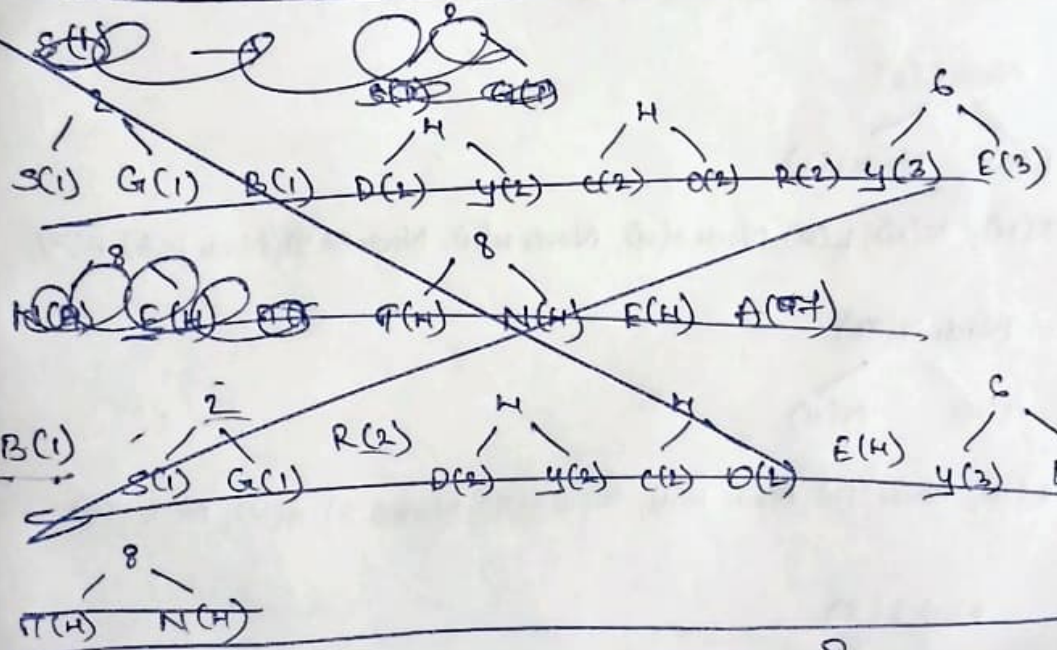
Data Analytics and Intelligence Laboratory

=> D = 2, A = 4, T = 4, N = 4, L = 4, Y = 2, I = 3, C = 2, S = 1, E = 3, G = 1, B = 1, O = 2, R = 2

=> [1, 1, 1, 2, 2, 2, 2, 2, 3, 3, 3, 4, 4, 4, 7]

[S, G, B, D, Y, C, O, R, I, E, T, N, L, A]

=>



Step-1:- S(1) G(1) B(1) D(2) Y(2) C(2) O(2) R(2) I(3) E(3) T(4) N(4) L(4) A(7)

=> Node1(2)

S(1) G(1)

=> B(1) D(2) Y(2) C(2) O(2) R(2) Node1(2) I(3) E(3) T(4) N(4) L(4) A(7)

Step 2:- B(1) F(1)

Node1(2)

B(1) F(1)

=> y(2), c(2), o(2), d(2), Node1(2), I(3), E(3), Node2(3), T(4), N(4), L(4), A(7)

Step 3:-

Node3(4)

y(2) c(2)

=> o(2) d(2), Node1(2), I(3), E(3), Node2(3), T(4), N(4), L(4), Node3(4), A(7)

Step 4:-

Node4(4)

o(2) d(2)

=> Node1(2), I(3), E(3), Node2(3), T(4), N(4), L(4), Node3(4), Node4(4), A(7)

Step 5:-

Node5(5)

Node1(2) I(3)

=> E(3), Node2(3), T(4), N(4), L(4), Node3(4), Node4(4), Node5(5), A(7)

Step 6:-

Node6(6)

E(3) Node2(3)

=> T(4), N(4), L(4), Node3(4), Node4(4), Node5(5), Node6(6), A(7)

Step 7:-

Node7(8)

T(4) N(4)

=> L(4), Node3(4), Node4(4), Node5(5), Node6(6), A(7), Node7(8)

Step 8:-

Node8(8)

L(4) Node3(4)

=> Node4(4), Node5(5), Node6(6), A(7), Node7(8), Node8(8)

Step 9:-

Node9(9)

Node4(4) Node5(5)

=> Node6(6), A(7), Node7(8), Node8(8), Node9(9)

Step - 10:- Node 10(15)

Node 4(6) A(7)

⇒ Node 7(8), Node 8(8), Node 9(9), Node 10(15)

Step - 11:- Node 11(16)

Node 7(8) Node 8(8)

⇒ Node 9(9), Node 10(15), Node 11(16)

Step - 12:- Node 12(22)

Node 9(9) Node 10(13)

⇒ Node 11(16), Node 12(22)

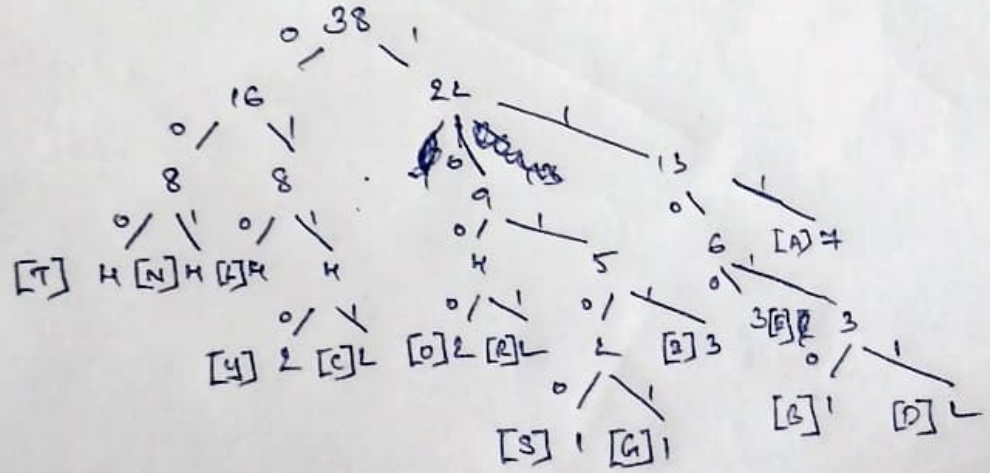
Step - 13:- Node 13(38)

Node 11(16) Node 12(22)

⇒ Node 13(38)

∴ Root frequency = 38

Diagram:-



[Graph is wrong. It should be opposite way]

+Huffman Code :

C : 0000
D : 0001
T : 001
O : 0100
Y : 0101
N : 011
L : 100
R : 1010
B : 10110
S : 101110
G : 101111
I : 1100
A : 111