GREEN UNIVERSITY OF BANGLADESH

Department of Computer Science & Engineering

Assignment

Course Code: CSE-205

Course Title: Algorithms

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Remark

Ans to the Q. no: 01

Huffman coding has greedy-choice property. It is true. the algorithm is based on the frequency of the characters appearing in a file. Since, characters which have high frequency has lower length, they take less space and save the space required to store the file.

If I assign less number of word for most frequently used symbol. it will save a lot of storage space. If i want to assign 26 unique codes to english alphabet and want to store an english novel in term of these code will require less memory if i assign short length codes to most frequently occuring characters.

Given,

Character : a	c	d	f	m	n
frequency : 7	40	50	5	30	81(x)

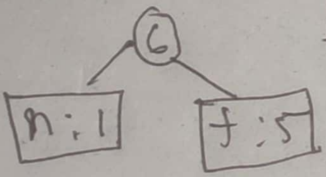
My ID: 193002101

x : (193002101 % 100) = 1

n:1	f:5	a:7	m:30	c:40	d:50

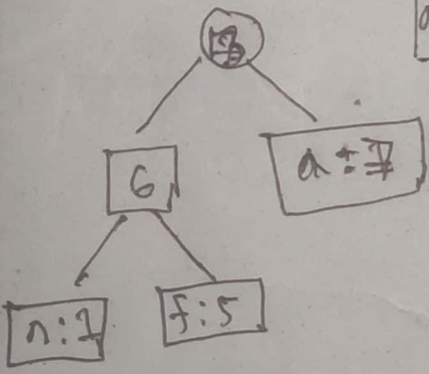
Step-01:

a:1	m:30	c:40	d:50



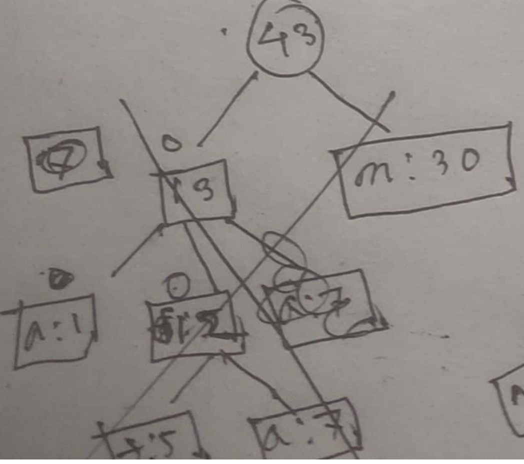
Step-02:

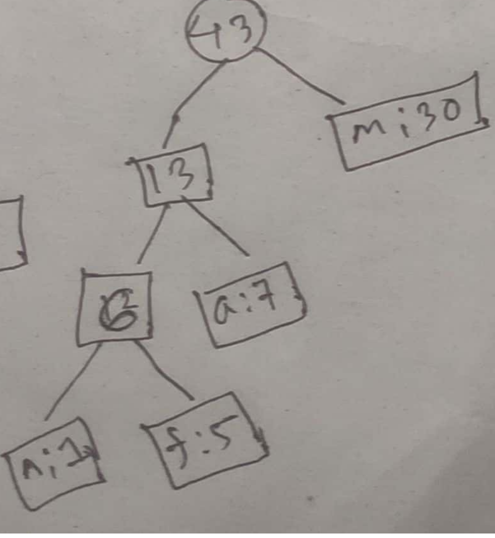
m:30	c:40	d:50



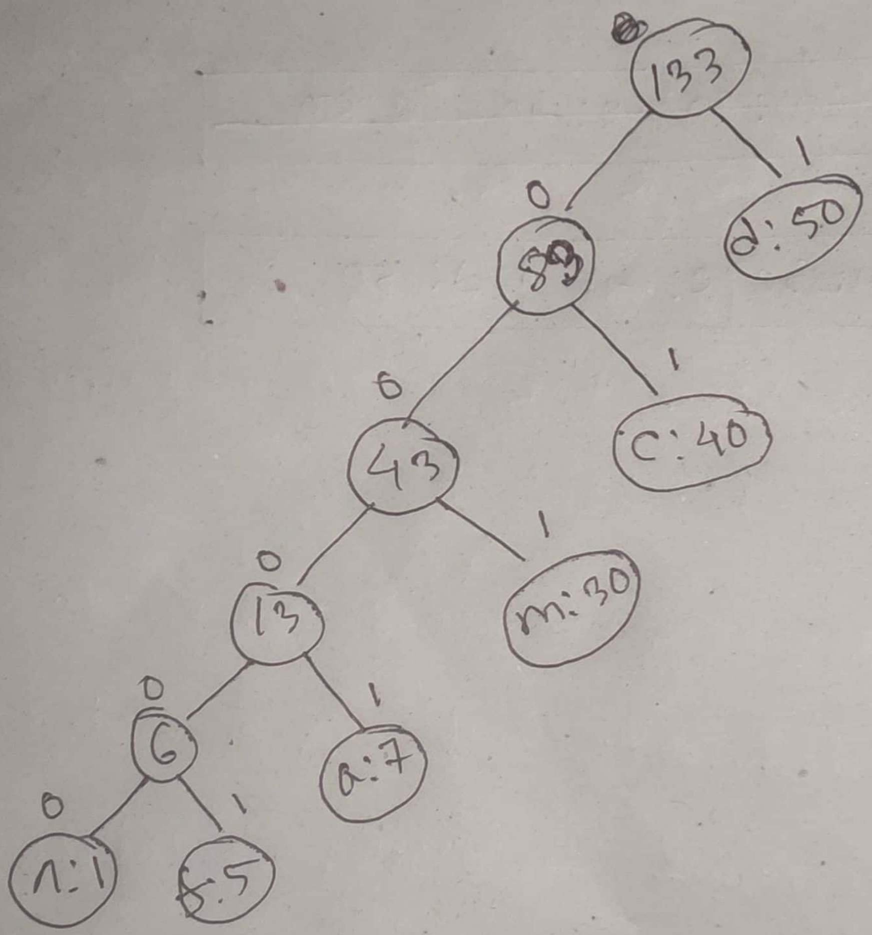
c:40	d:50

step - 03





Step-4



code for each character:

char	freq	code		
a =	7	= 0001	= 7×4	= 28
c =	40	= 01	= 40×2	= 80
d =	50.	= 1	= 50×1	= 50
f =	5	= 00001	= 5×5	= 25
m =	30	= 001	= 30×3	= 90
n =	1	= 00000	= 1×5	= 5
		= 20bits		= 206bits

Now, $(28+80+50+25+90+5)\times1000$

$= 278{,}000$

278000 bits needed to use Huffman encoding compare to a character having 8 bits.