Huffman Encoding

Greedy Method

Message → BCCABBDDAECCBBAEDDCC

length - 20

Ascii - 8bits

8x20 = 160 bits size

A: 65 01000001
B: 66 01000010
C: 67 :
D: 68 :
E: 69 :

Character	Count/Frequency		Code
A	3	3/20	000
B	5	5/20	001
C	6	6/20	010
D	4	4/20	011
E	2	2/20	100
	20 total		

011 bit

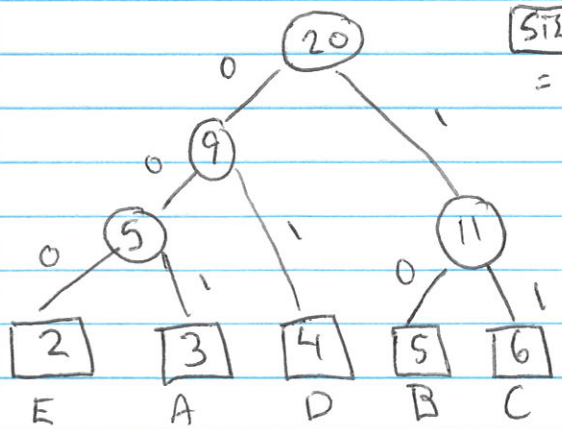
00 bit
01
10
11

--- need 3

now size 20x3 = 60 bits (instead of 160 with Ascii!)

5 characters into 8 bits for characters 5x8
5 characters into 3 bits For codes 5x3
40 + 15 = 55
msg - 60 bits
Table - 55 bits table = 115 bits then

More appearing = lower code. Optimal merge pattern. Greedy Approach



now 9,11
now 9,5,6
↑
start:

Size: $\sum d_i * f_i$
= 3x2 + 3x3 + 2x4 + 2x5 + 2x6
= 45 bits

Char	Count	Code	appear x bits size
A	3	001	3x3=9
B	5	10	5x2=10
C	6	11	6x2=12
D	4	01	4x2=8
E	2	000	2x3=6
	20		45 bits

- Mark left side as 0 and right side as 1.