Application of Huffman tree:

1. Huffman coding is used in file compression Algorithm.
2. It is used in transmission of data in an encoded form.
3. This encoding is used in game playing.

Eg:- DADA → 00110011.

01110011 → CAD.//

0/1 knapsack problem:

Q). item = 5.

W = 100.

weigh = [50, 40, 30, 20, 10].

Profit = [1, 2, 3, 4, 5].

Item	x1	x2	x3	x4	x5
Profit (p)	50	40	30	20	10
weight (w)	1	2	3	4	5
P/W	0.02	0.05	0.1	0.2	0.5

step 1; Maximum profit:

Item	Profit	weight	Remaining weight
X5	5	10	100-10 = 90.
x4	4	20.	90-20 = 70
x3	3	30	70-30 = 40
x2	2.	40.	40-40 = 0.
total	14.	100.	

step 2; Minimum weight. * 1/2

Item	Profit	weight	R. wt
x5	5	10.	100-10 = 90
x4	4	20	90-20 = 70
x3	3	30	70-30 = 40
x2	2	40.	40-40 = 0

Total profit : 14

" weight : 100.

Step 3 : Maximum profit / weight ratio :

Item selected	Profit	weight	Ratio	Rem. w
x_5	5	10	0.5	100 − 10 = 90
x_4	4	20	0.2	90 − 20 = 70
x_3	3	30	0.1	70 − 30 = 40
x_2	2	40	0.05	40 − 40 = 0

(x_5, x_4, x_3, x_2) (or) $(5, 4, 3, 2)$.