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Exp 7: To implement Backtracking algorithm

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Following is the algorithm for :-

"Finding subsets of an array that sum to d "

Sum-of-subsets(S, k, r) \leftarrow Initially $S=0$
 $x[k]=1$ $k \leftarrow 0$

if ($w[k] + S == d$)

print the subset;

else if ($S + w[k] + w[k+1] \leq d$)

Sum-of-subsets($S + w[k], k+1, r - w[k]$)

if ($(S + r - w[k]) > d$) and ($S + w[k+1] > d$)

$x[k] = 0$

Sum-of-subsets($S, k+1, r - w[k]$)

$r =$ Total sum of
elements in the
array

Functions and variables used:-

$w[] \rightarrow$ input array

$x[] \rightarrow$ boolean array used to include or disclude
elements

$d \rightarrow$ Target sum

void sum-of-subsets()

\rightarrow prints all the subsets that sum to ' d '.

Conclusion :-

Backtracking approach was used to print subsets of an array that sum to a given number.