**ADA LAB-17**

* **Sum of subsets problem using backtracking.**
  + - * **Program**

#include<stdio.h>

#include<conio.h>

int count,w[10],d,x[10];

void subset(int cs, int k, int r)

{

int i;

x[k]=1;

if(cs+w[k]==d)

{

printf("\nSubset solution = %d\n", ++count);

for(i=0;i<=k;i++)

{

if(x[i]==1)

printf("%d\t", w[i]);

}

}

else

if(cs+w[k]+w[k+1]<=d)

subset(cs+w[k], k+1, r-w[k]);

if((cs+r-w[k]>=d) && (cs+w[k+1])<=d)

{

x[k]=0;

subset(cs,k+1,r-w[k]);

}

}

int main()

{

int sum=0,i,n;

printf("Enter the number of elements\n");

scanf("%d", &n);

printf("Enter the elements in ascending order\n");

for(i=0;i<n;i++)

scanf("%d", &w[i]);

printf("Enter the required sum\n");

scanf("%d", &d);

for(i=0;i<n;i++)

sum+=w[i];

if(sum<d)

{

printf("No solution exists\n");

return 0;

}

printf("The solution is\n");

count=0;

subset(0,0,sum);

getch();

}

* + - * **Output**

