UNIVERSITY INSTITUTE of COMPUTING
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NAAC GRADE A+ ACCREDITED UNIVERSITY

Experiment No. 3.2

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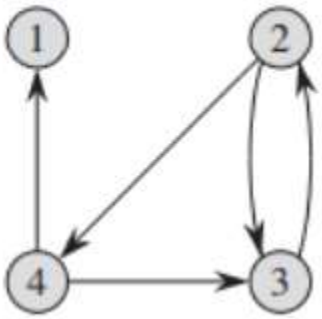
Subject Name: DAA Lab
Subject Code: 22CAP-646

1. Aim/Overview of the practical:

Find a subset of a given set S={sl,s2,sn} of n positive integers whose sum is equal to a given positive integer .For example, if S={1,2,7,3,4,5,6}and d = 11.}.A suitable message is to be displayed if the given problem instance doesn't have a solution.



2. Code for practical:

```
#include<stdio.h>
int s[10], d, n, set[10], count = 0;
void display(int);
int flag = 0;
void main() {
  int subset(int, int);
  int i;
  printf("ENTER THE NUMBER OF THE ELEMENTS IN THE SET : ");
  scanf("%d", & n);
  printf("ENTER THE SET OF VALUES : ");
  for (i = 0; i < n; i++)
    scanf("%d", & s[i]);
  printf("ENTER THE SUM : ");
  scanf("%d", & d);
  printf("THE PROGRAM OUTPUT IS: ");
  subset(0, 0);
  if (flag == 0)
    printf("There is no solution");
}
int subset(int sum, int i) {
  if (sum == d) {
```

```
        flag = 1;
        display(count);
        return;
      }
      if (sum > d || i >= n) return;
      else {
        set[count] = s[i];
        count++;
        subset(sum + s[i], i + 1);
        count--;
        subset(sum, i + 1);
      }
    }
    void display(int count) {
      int i;
      printf("\t{");
      for (i = 0; i < count; i++)
        printf("%d,", set[i]);
      printf("}");
    }
```

3. Output:

```
/tmp/3tv4MV4C2z.o
ENTER THE NUMBER OF THE ELEMENTS IN THE SET : 7
ENTER THE SET OF VALUES : 1 2 7 3 4 5 6
ENTER THE SUM : 11
THE PROGRAM OUTPUT IS:  {1,2,3,5,}  {1,7,3,}    {1,4,6,}    {2,3,6,}    {2,4,5,}    {7,4,}  {5,6,}
```

********** THE END **********