Program: Sum of Sub-Set Problem – Niyati Savant

Code:

```
#include<stdio.h>
int w[10];
int inc[10];
int sum;
int n;
int check(int i,int wt,int total)
{
   if ((wt+total>=sum)&&((wt==sum) || (wt + w[i+1]<=sum)))
      return 1;
   else
      return 0;
}

void sumset(int i,int wt,int total)
{
   int j;
   if(check(i,wt,total)==1)
   {
      if(wt==sum)
      {
         printf("\n Solution is-{");
         for(j=0;j<=i;j++)
         {
            if(inc[j]==1)
               printf(" %d ",w[j]);
         }
         printf("}\n");
         printf("\n[");
         for(j=1;j<=n;j++)
```

```
        {
            printf(" %d ",inc[j]);
        }
        printf("]\n");
    }
    else
    {
        inc[i+1]=1;
        sumset(i+1,wt+w[i+1],total-w[i+1]);

        inc[i+1]=0;
        sumset(i+1,wt,total-w[i+1]);
    }
  }
}

int main()
{
  int i,total=0;
  w[0]=0;
  printf("Niyati's code for Sum of Subset");
  printf("Enter the number of elements : ");
  scanf("%d",&n);
  printf("Enter the elements in ascending order: ");
  for(i=1;i<=n;i++)
    scanf("%d",&w[i]);
  printf("Enter the sum you want the numbers to add up to: ");
  scanf("%d",&sum);
  for(i=1;i<=n;i++)
    total +=w[i];
```

```
    sumset(0,0,total);
    return 0;
}
```

Output:

```
Niyati's code for Sum of Subset
Enter the number of elements : 4
Enter the elements in ascending order: 4 5 8 9
Enter the sum you want the numbers to add up to: 9
 Solution is-{ 4  5 }
[ 1  1  0  0 ]
 Solution is-{ 9 }
[ 0  0  0  1 ]
```