Description:

C program that solves the subset-sum problem, and reports execution time using clock().

Source Code:

```
#include <stdio.h>

#include<time.h>

void findSubset(int set[], int subset[], int n, int index, int target, int currentSum) {  if (currentSum == target) {

 printf("Subset found: ");

 for (int i = 0; i < index; i++) {

 printf("%d ", subset[i]);

 }

 printf("\n");

 return;

 }

 if (currentSum > target || n == 0) {

 return;

 }

 // Include the current element

 subset[index] = set[0];

 findSubset(set + 1, subset, n - 1, index + 1, target, currentSum + set[0]);

 // Exclude the current element

 findSubset(set + 1, subset, n - 1, index, target, currentSum); }

int main() {

 int n, target;

 clock_t start,end;
```

```
 double cpu_time_used;
 printf("Enter the number of elements in the set: ");  scanf("%d", &n);
 int set[n], subset[n];
 printf("Enter the elements of the set: ");  for (int i = 0; i < n; i++) {
 scanf("%d", &set[i]);
 }
 printf("Enter the target sum: ");
 scanf("%d", &target);
 printf("Subsets with sum %d:\n", target);
 start=clock();
 findSubset(set, subset, n, 0, target, 0);
 end=clock();
 cpu_time_used=((double)(end-start))/CLOCKS_PER_SEC;
 printf("Execution time:%f second",cpu_time_used);
 return 0;
}
```

Output:

```
Enter the number of elements in the set: 4
Enter the elements of the set: 2
3
5
6
Enter the target sum: 5
Subsets with sum 5:
Subset found: 2 3
Subset found: 5
Execution time:0.000032 second
```