

Exp 10

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#include <stdio.h>
#include <stdlib.h>
static int total_nodes;
void printValues(int A[], int size){
    for (int i = 0; i < size; i++) {
        printf("%*d", 5, A[i]);
    }
    printf("\n");
}
void subset_sum(int s[], int t[], int s_size, int t_size, int sum, int ite, int const target_sum){
    total_nodes++;
    if (target_sum == sum) {
        printValues(t, t_size);
        subset_sum(s, t, s_size, t_size - 1, sum - s[ite], ite + 1, target_sum);
        return;
    }
    else {
        for (int i = ite; i < s_size; i++) {
            t[t_size] = s[i];
            subset_sum(s, t, s_size, t_size + 1, sum + s[i], i + 1, target_sum);
        }
    }
}
void generateSubsets(int s[], int size, int target_sum){
    int* tuple_vector = (int*)malloc(size * sizeof(int));
    subset_sum(s, tuple_vector, size, 0, 0, 0, target_sum);
    free(tuple_vector);
}
int main(){
    int set[] = { 5, 6, 12, 54, 2, 20, 15 };
    int size = sizeof(set) / sizeof(set[0]);
    printf("The set is ");
    printValues(set, size);
    generateSubsets(set, size, 25);
    printf("Total Nodes generated %d\n", total_nodes);
    return 0;
}
```