CSE 331 COMPUTER ORGANIZATION HOMEWORK 1 REPORT

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REQUESTED:

You will be given an integer array arr and a number num. The task is to find if a subset of array elements can sum up to the target num. If not possible you will output “Not possible!”. If it is possible, output “Possible!”. You can use every array element only once. Only positive integers are allowed as array elements. Finding only one combination is enough to output “Possible!”.

ALGORTM:

SubSetSumRecursive(int S[1,……n],int lastIndex,int sum)

if(sum==0) return true

if(sum<0 or lastIndex==0) return false

return SubSetSumRecursive(S,i-1,sum) or SubSetSumRecursive(S,i-1,sum -S[i])

FUCTIONS:

Check_sum_posibilty

It is a recursive function check all subset sum that get sum value

İnteger array and size of this array(use this as last index) as parameter.Return 1 or 0.

İn C++

```
/*   *@param int num sum value we try to get
*    *@paraö int arr array
*    *@param last index
*    *@return 1 or 0
*    *if get sum value return 1 else return 0
*/
int CheckSumPossibility(int num, int arr[], int last_index)
```

İn mips

```
########################################
#@param s0 is array                    #
#@param a0 is size of array            #
#@param  a1 is sum                     #
#@retun v0 is 1 if sum true            #
#@return v0 is 0 if sum false          #
#s1 use for array size                 #
#s2 use for  sum                       #
#s3 use for or result                  #
#s4 use for iteration                  #
########################################
Check_sum_posibility:
```

CREATE_ARR

Get array adres in $s0 register

Get size of array from user and allocate memory as dynamicly

Get sum value from user

And return size of array with v0

Return sum with v1

İn mips

```
##########################################
##create a array and stor it in $s0     #
## return v0 size of array              #
##return  v1 sum                       #
##########################################
create_arr:
```

TEST CASES

ssages | Run I/O

```
please enter sizof array8
please enter sum129
41
67
34
0
69
24
78
58
not posible

-- program is finished running --
```

ages | Run I/O

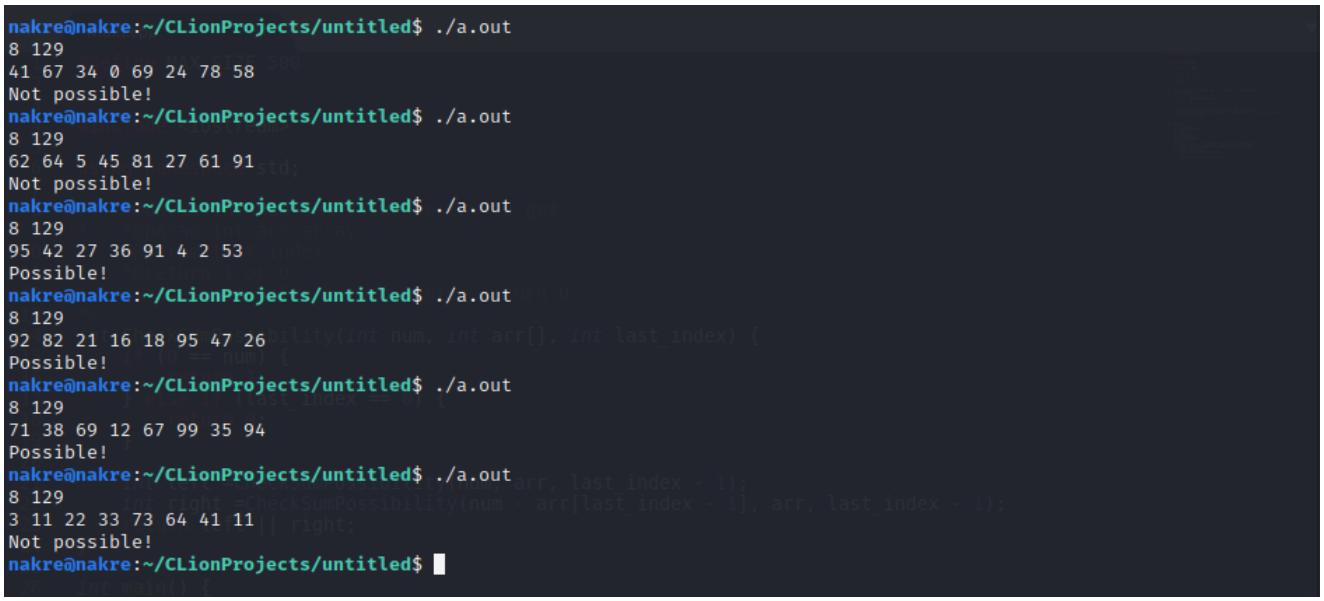
```
please enter sizof array8
please enter sum129
62
64
5
45
81
27
61
91
not posible

-- program is finished running --
```

```
please enter sizof array8
please enter sum129
95
42
27
36
91
4
2
53
posible

-- program is finished running --
```

```
please enter sizof array8
please enter sum129
92
82
21
16
18
95
47
26
posible

-- program is finished running --
```

```
please enter sizof array8
please enter sum129
71
38
69
12
67
99
35
94
posible

-- program is finished running --
```

```
please enter sizof array8
please enter sum129
3
11
22
33
73
64
41
11
not posible

-- program is finished running --
```


nakre@nakre:~/CLionProjects/untitled$ ./a.out
8 129
41 67 34 0 69 24 78 58
Not possible!
nakre@nakre:~/CLionProjects/untitled$ ./a.out
8 129
62 64 5 45 81 27 61 91
Not possible!
nakre@nakre:~/CLionProjects/untitled$ ./a.out
8 129
95 42 27 36 91 4 2 53
Possible!
nakre@nakre:~/CLionProjects/untitled$ ./a.out
8 129
92 82 21 16 18 95 47 26
Possible!
nakre@nakre:~/CLionProjects/untitled$ ./a.out
8 129
71 38 69 12 67 99 35 94
Possible!
nakre@nakre:~/CLionProjects/untitled$ ./a.out
8 129
3 11 22 33 73 64 41 11
Not possible!
nakre@nakre:~/CLionProjects/untitled$