1.Program to find the total number of islands using DFS is discussed here. Given an input island matrix, where 0 represents water and 1 represents land. Find the total number of islands that are formed by connected 1's.

For example, consider the input island matrix

**1** 0 **1** 0 **1**

0 0 **1** 0 0

0 0 **1 1** 0

0 **1** 0 **1** 0

**1 1 1** 0 0

0 0 0 0 **1**

0 **1** 0 **1** 0

0 0 **1 1** 0

0 0 0 **1 1**

**1 1** 0 0 0

**Total number of islands = 5**

2. Subset sum problem using Dynamic Programming is discussed here. Given an array and a value, find if there is a subset of the given set with the sum equal to the given sum.

For example,

**Sample Input:**

10 (Number of elements of the array)

100 (Sum value)

18 23 17 29 1 6 7 30 7 6 (Array elements)

**Sample Output:**

Yes

**Explanation:**

**18 + 23 + 17 + 29 + 6 + 7 = 100**

3Program to solve Rat in a maze problem using backtracking is discussed here. Given a maze where 1 represent free space and 0 represented it is blocked. Print the path from 0,0 to n-1, n-1 if exists or print -1;