

Project 1: Array and Linked List

Project Deadline: 11:59 PM, Sep. 25, 2017

No Late Submission

1. Find the number of pairs with given sum in the array

Given an unsorted array of integers, find the number of pairs with given sum in it.

For example,

Input:

arr = [8, 7, 2, 5, 3, 1]

sum = 10

Output: The number of pairs with given sum is 2

Input:

arr = [2, 1, 9, 6, 5, 6, 3, 11, 10, 7, 4]

sum = 12

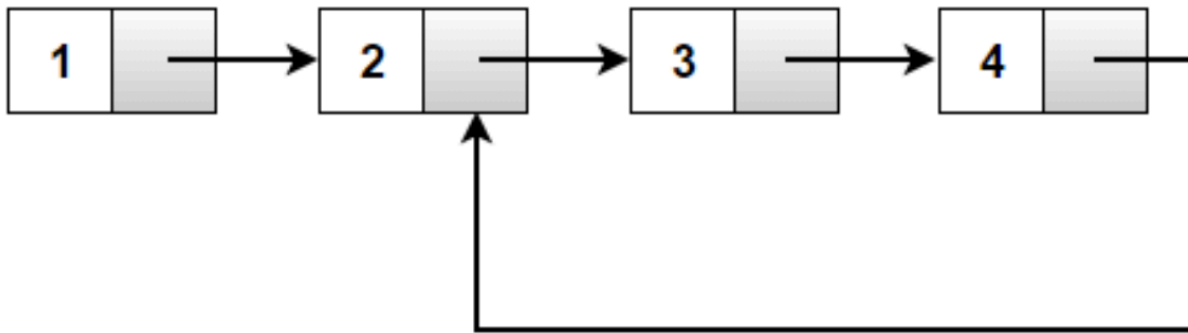
Output: The number of pairs with given sum is 5

2. Detect cycle in a single linked list

Given a single linked list, detect cycle in it. Note: no tail pointer is allowed.

For example, below linked list has a cycle in it.

Input:



Output: Cycle found

Note: You may discuss the general concepts in this project with other students, but you must finish your program on your own. **NO SHARING OF CODE OR REPORT IS ALLOWED.** Violation of this policy can result in grade penalty.

What to submit

Please submit a .zip file containing (1) working programs written in C++ (one .cpp file for each question) (2) a report with the pseudo code of you programs. Before submit your project, please make sure to test your program (at least) on the given examples.