Assignment 1 (Indicies):

Test completed: 30/10/22

Github link: https://github.com/Vijay-turaka/Advanced_Algorithms-Concordia_Assigments-

```
#include <bits/stdc++.h>
#include <map>
using namespace std;

void check_pairs(int arr[], int size, int Totalsum)
{
        std::map<int, int> Hashmap = {};
        for(int i = 0; i < size; i++) {
                int temp = Totalsum - arr[i];
                if(Hashmap.find(temp) != Hashmap.end()) {
                    cout << Hashmap[temp] << "," << i << endl;
              return;
                }
                Hashmap.insert(pair<int, int>(arr[i],i));
        }
        cout << "No values matched" << endl;
}

int main()
{
   int n, target;
        cout << "Enter size of the array:" << "\n";
        cin >>n;
        int *arr = new int(n);
        cout << "Enter array values" << endl;
        for (int x = 0; x < n; x++) {
                cin >> arr[x];
        }
        cout << "Enter target value"<<"\n";
        cin >>target;
        check_pairs(arr, n, target);
        return 0;
}
```

Self evaluation:

1. How long did you spend on this assignment?
    a. 1hr

2. Based on your effort, what letter grade would you say you earned?
    a. On a scale of 1 to 10. I would grade this as 10/10.

3. Based on your solution, what letter grade would you say you earned?
    a. On a scale of 1 to 10. I would grade this as 9/10.

4. Provide a summary of what doesn't work in your solution, along with an explanation of how you attempted to solve the problem and where you feel you struggled?

    a. My first solution is done using naive approach which is of time complexity O(n^2) and space of O(1)
    b. Later I optimised my solution using the Hashing technique which had time complexity of O(N) and space of O(N). Still it takes some space.
    c. I struggled while implementing the map function in c++ which I am quite familiar with the other Languages.