Alorithm and Data Structure

In the Moducle of Algorithm and data structure first we learned about the basic data types available in Python along with methods associated with these database.

Next we learned about some ways in which the time and space compelxity is measure which determines the performance metrics or codes.

Then we delved into recursion and learned how we can recursively call functions to solve probelms in a more efficient way compared to the itirative method.

In assignment one based on the random hash function generated I was assigned Question number 3. I was required to find the missing number from 0 to the maximum number given in the list of integers.

In order to find the solution I first came up with the base result for the function which would be -1 given all numbers are present in the list.

The recursive portion of the code was designed to add missing number to the missing list and find the next missing number

Alteernatively I was able to find another solution using the propert of the set in python by using the minus operator on set of given number in the

list and the set of all integers from 0 to the max number given in the list.

In assignment 2 we were rasked to review the code of a partner. The solution provided by my partner was able to solve the task of find all possible

paths of traversal from root to all the lefts of a binary tree.

As a proposal to optimise the solution i was able to come up with another way of implementing th code which would decrese both time and space compelxity.