**DATA STRUCTURE AND ALGORITHM -**

**ABSTRACT**

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The data structure and algorithm that I have chosen is an **Array**. In this project I will be explaining what an array is, its implication and uses in the real life, its limitations and a way of overcoming them.

An array is a linear data structure with a predefined memory space, in which only a specific type of data can be stored (such as **char, int, float,** et

Arrays are commonly used in computer programs to organize data.

Since the array has a predefined memory-space we cannot add more elements to it if it is filled; neither can the empty spaces in the array be used.

Hence, to overcome these limitations I will be creating a program for Hostel room allotment using **Linked list, Dynamic Memory Allocation and Structures**.

Linked list (also a linear data structure) and dynamic memory allocation will help overcome the limitation of fixed memory space and structures will help overcome the limitation of single type of data.

A linked list is a sequence of data structures, which are connected together via links. Linked List is a sequence of links which contains items. Each link contains a connection to another link. Linked list is the second most-used data structure after array.

Arrays allow to define type of variables that can hold several data items of the same kind. Similarly, structure is another user defined data type available in C that allows to combine data items of different kinds. Structures are used to represent a record.

In this program, Hostel room allotment, I will be creating a structure which consists of the student’s name, his/her registration number, the room that is allotted to him/her and the location of the next node.

I will be using linked lists to store this data and represent them in a form of a list.