

Data structures Laboratory

Exercise no: 1

Date : 16.08.24

1. A *magic square* is a square array of integers such that the sum of every row, the sum of every column, and sum of each of the two diagonals are all equal. Two magic squares are shown in Figure

16	3	2	13
5	10	11	8
9	6	7	12
4	15	14	1

sum = 34

17	24	1	8	15
23	5	7	14	16
4	6	13	20	22
10	12	19	21	3
11	18	25	2	9

sum = 65

Write a program that reads a square array of integers and determines whether or not it is a magic square.

2. Create a structure called Book with the following definition:

```
Struct Book {  
    int bookid;  
    char * booktitle;  
    char * authorname;  
    float price;  
    int ISBNNo;  
};
```

3. Create an array of structures of BOOK and perform the following operations:
 - a. Search for a given booktitle, if present return bookid or else zero
 - b. Search for the books written by a particular author and print it
 - c. Return the price of book given booktitle