

Introduction to Programming Final Term Lab Task

on 2D Array, Function, and Structure

1. Write a Program in C++ that can,
 - a. Take a 5X5 Square matrix input from user using function.
 - b. Create a function that sums all the diagonal elements (consider each cell only once).

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

Use Loop to calculate

- c. Create a function that sums all the border elements (consider each cell only once).

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

Use Loop to calculate

2. Create a User Defined data type **Box** using Structure

Box	Notes
double length	
double width	
double height	
double surfaceArea()	(Sum of area of all side) * 2
double volume()	
int compareVolume(Box b)	-1 if calling obj is Smaller 0 if calling obj is Equal 1 if calling obj is Bigger
int compareSurfaceArea(Box b)	-1 if calling obj is Smaller 0 if calling obj is Equal 1 if calling obj is Bigger
void show()	Displays all the information All sides, Surface Area, and Volume

After Creating the Structure do the following in main function

- a. Create two instance/object **b1** and **b2** using **Box** Structure and initialize them with values of your choice.
- b. Show all the information of both box object.
- c. Compare b1 and b2 and show their status.