



**United International University (UIU)**  
**Dept. of Computer Science & Engineering (CSE)**  
**Mid-Term Exam Trimester: Fall 2023**  
**Course Code: CSE 1112, Course Title: Structured**  
**Programming Language Lab**  
**Total Marks: 30    Duration: 1 hour 15 minutes**  
**Set: A**

Any examinee found adopting unfair means would be expelled from the trimester/program as per UIU disciplinary rules.

1.

Write a C program that will take (n x n) integer inputs into a square matrix of dimension n (where n must be an odd number and n >= 5). Then calculate the sum of the integers based on the following position pattern (consider only the boxed position during the sum). Please see the input-output.

Sample input	Sample output																																																	
<div>5</div> <table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>2</td><td>3</td><td>4</td><td>1</td><td>6</td></tr><tr><td>3</td><td>4</td><td>9</td><td>6</td><td>7</td></tr><tr><td>4</td><td>2</td><td>6</td><td>7</td><td>8</td></tr><tr><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr></table>	1	2	3	4	5	2	3	4	1	6	3	4	9	6	7	4	2	6	7	8	5	4	3	2	1	<div>38</div>																								
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[10]

2.	Write a C program that will take n integer numbers into an array, and then find the second largest number of the array.	[10]								
<table><tr><th>Sample input</th><th>Sample output</th></tr><tr><td>8 2 8 1 3 2 6 4 3</td><td>6</td></tr><tr><td>4 5 3 8 7</td><td>7</td></tr></table>			Sample input	Sample output	8 2 8 1 3 2 6 4 3	6	4 5 3 8 7	7		
Sample input	Sample output									
8 2 8 1 3 2 6 4 3	6									
4 5 3 8 7	7									
3.	Write a C program that will determine whether an integer is a palindrome number or not.	[10]								
<table><tr><th>Sample input</th><th>Sample output</th></tr><tr><td>9</td><td>Yes</td></tr><tr><td>91</td><td>No</td></tr><tr><td>12321</td><td>Yes</td></tr></table>			Sample input	Sample output	9	Yes	91	No	12321	Yes
Sample input	Sample output									
9	Yes									
91	No									
12321	Yes									

**Mark Distribution for each problem:**

**10**

1. Properly taking inputs and saving them. (2)
2. Solving logic and proper implementation. (6)
3. Properly showing outputs. (2)