MIDTERM EXAM SKILL TEST	
Course Code: 201L	**Program: COMPUTER ENGINEERING**
Course Title:DATA STRUCTURE AND ALGORITHM	**Date Performed: SEPTEMBER 06, 2025**
Section: 2 - B	**Date Submitted: SEPTEMBER 06, 2025**
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1.Objectives

- To implement an array of integers between 20 and 49 using a programming language.
- To perform basic array operations such as displaying elements, counting elements, and determining the number of odd and even integers.

2. Discussion

An array is a collection of elements stored in contiguous memory locations and accessed using indexes. In this activity, I created an array of integers ranging from 20 to 49. Using array operations, I displayed each element with its corresponding index, counted the total number of elements, and determined how many were odd and even. This exercise strengthens understanding of array manipulation, looping structures, and basic counting logic.

3. Materials and Equipment

- **SET OF COMPUTER**
- **GOOGLE COLAB**
- **GITHUB**
- **PYTHON LANGUAGE**

4. Procedure

- Declare an array of integers starting from 20 up to 49.
- Display all the elements of the array together with their indexes using a loop.
- Count the total number of elements using the len() function.
- Use conditional statements to separate and count the odd and even integers.
- Print the results for elements, element count, odd count, and even count.

5. Output

```
Array elements:
Index 0: 20
Index 1: 21
Index 2: 22
Index 3: 23
Index 4: 24
Index 5: 25
Index 6: 26
Index 7: 27
Index 8: 28
Index 9: 29
Index 10: 30
Index 11: 31
Index 12: 32
Index 13: 33
Index 14: 34
Index 15: 35
Index 16: 36
Index 17: 37
Index 18: 38
Index 19: 39
Index 20: 40
Index 21: 41
Index 22: 42
Index 23: 43
Index 24: 44
Index 25: 45
Index 26: 46
Index 27: 47
Index 28: 48
Index 29: 49

Number of elements: 30
Number of odd integers: 15
Number of even integers: 15
```

6. Conclusion

In conclusion, this activity successfully demonstrated the implementation and manipulation of an array of integers ranging from 20 to 49. By displaying the elements with their indexes, I was able to clearly understand how arrays store values in sequential memory locations and how each element can be accessed using its corresponding index.

Counting the number of elements validated that the array contained exactly 30 integers, which matches the expected range from 20 up to 49. Additionally, the classification of the elements into odd and even numbers showed that arrays can be efficiently combined with logical conditions

and looping structures to process and analyze data. The results revealed an equal distribution of 15 odd numbers and 15 even numbers, which further reinforces mathematical patterns that can be verified using programming.

Lab Activity Rubric

Criteria	Ratings						Pts
SO 7 PI 1 **Student Outcome 7.1** Acquire and apply new knowledge from outside sources. threshold: 4.8 pts	6 pts Excellent | Educational interests and pursuits exist and flourish outside classroom requirements,knowledge and/or experiences are pursued independently and applies knowledge learned into practice	5 pts Good | Educational interests and pursuits exist and flourish outside classroom requirements,knowledge and/or experiences are pursued independently	4 pts Satisfactory | Look beyond classroom requirements, showing interest in pursuing knowledge independently	3 pts Unsatisfactory | Begins to look beyond classroom requirements, showing interest in pursuing knowledge independently	2 pts Poor | Relies on classroom instruction only	1 pts Very Poor | No initiative or interest in acquiring new knowledge	6 pts
SO 7 PI 2 **Student Outcome 7.2** Learn independently threshold: 4.8 pts	6 pts Excellent | Completes an assigned task independently and practices continuous improvement	5 pts Good | Completes an assigned task without supervision or guidance	4 pts Satisfactory | Requires minimal guidance to complete an assigned task	3 pts Unsatisfactory | Requires detailed or step-by-step instructions to complete a task	2 pts Poor | Shows little interest to complete a task independently	1 pts Very Poor | No interest to complete a task independently	6 pts
SO 7 PI 3 **Student Outcome 7.3** Critical thinking in the broadest context of technological change threshold: 4.8 pts	6 pts Excellent | Synthesizes and integrates information from a variety of sources; formulates a clear and precise perspective; draws appropriate conclusions	5 pts Good | Evaluate information from a variety of sources; formulates a clear and precise perspective.	4 pts Satisfactory | Analyze information from a variety of sources; formulates a clear and precise perspective.	3 pts Unsatisfactory | Apply the gathered information to formulate the problem	2 pts Poor | Gather and summarized the information from a variety of sources but failed to formulate the problem	1 pts Very Poor | Gather information from a variety of sources	6 pts
SO 7 PI 4 **Student Outcome 7.4** Creativity and adaptability to new and emerging technologies threshold: 4.8 pts	6 pts Excellent | Ideas are combined in original and creative ways in line with the new and emerging technology trends to solve a problem or address an issue.	5 pts Good | Ideas are creative and adapt the new knowledge to solve a problem or address an issue	4 pts Satisfactory | Ideas are creative in solving a problem, or address an issue	3 pts Unsatisfactory | Shows some creative ways to solve the problem	2 pts Poor | Shows initiative and attempt to develop creative ideas to solve the problem	1 pts Very Poor | Ideas are copied or restated from the sources consulted	6 pts
							Total Points: 24