

Midterm Skills Test	
Course Code: CPE 201L	Program: Bachelor of Science in Computer Engineering
Course Title: Data Structure and Algorithm	Date Performed: September 6, 2025
Section: BSCpE 2B	Date Submitted: September 6, 2025
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<b>1. Objectives</b>	
Implement an Array of Integers less than 50 but not less than 20 and do the following operations <ul style="list-style-type: none"> <li>a) Display the Elements</li> <li>b) Count the number of elements</li> <li>c) Count the number of odd and even integers</li> </ul>	
<b>2. Discussion</b>	
In this activity, <ul style="list-style-type: none"> <li>- I implemented the array data structure to generate the elements within a range.</li> <li>- I applied for loops and if statement to generate the elements and determine whether it is odd or even</li> <li>- I used enumerate() to enumerate each index of a list</li> <li>- And len() to count the number of len in each list</li> </ul>	
<b>3. Materials and Equipment</b>	
<b>Hardware:</b> A personal computer or laptop.	
<b>Software:</b> Google Colab	
<b>4. Procedure</b>	
<ul style="list-style-type: none"> <li>- Create a list of integers starting from 20 up to 49 using <b>range()</b>. <ul style="list-style-type: none"> <li>- In this case range(20,50)</li> </ul> </li> <li>- Separate the odd and even integers from the list using conditional list comprehensions. <ul style="list-style-type: none"> <li>- In this case, for even: <ul style="list-style-type: none"> <li>- i for i in range(20,50)</li> <li>- If i % 2 == 0</li> </ul> </li> <li>- For odd: <ul style="list-style-type: none"> <li>- i for i in range(20,50)</li> <li>- If i % 2 == !0</li> </ul> </li> </ul> </li> <li>- Display the elements with their index using <b>enumerate()</b>.</li> <li>- Count the total number of elements with <b>len()</b>.</li> <li>- Count the number of odd and even integers separately.</li> <li>- Print the results in an organized format.</li> </ul>	
<b>5. Output</b>	

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(A)
Display 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

(B)
Count the number of elements: 30

(C)
Number of Odd Elements: 15
Number of Even Elements: 15
```

Figure 1: Output of the Code

## 6. Conclusion

- In this activity, I implemented an array of integers and carried out basic operations. I displayed elements with their indexes, counted the total elements, and identified odd and even numbers. This exercise improved my understanding of how to manipulate arrays, iterate through them, and use conditional filtering in Python.

