

Midterm-Test Skill	
Course Code: CPE201L	Program: BSCpE
Course Title: Data Structure and Algorithms (Lab)	Date Performed: 06/09/2025
Section: 2A	Date Submitted:06/09/2025
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<b>1.Objectives</b>	
Choose only one (1) : 1.Implement an array of even integers less than 50 but not less than 20 and do the following operations: a. Display elements b. Find the maximum element c. Reverse the array 2. Implement on singly-linked list of odd integers from 1 to 30 and do the following operations: a. Display all data b. Append a node c. Delete a node	
<b>2. Discussion</b>	
Midterm Test Skill exam test our skill and capability to execute a given objective. In this exam I choose the objective no.1 to implement an array of even integers less than 50 but not less than 20 and do the following operations: a) display the element, b) find the maximum element, c) reverse the array then execute it and pass it to Github.	
<b>3. Materials and Equipment</b>	
Google colab – executor Python – program language Github - site where to upload	
<b>4. Procedure</b>	
<ol style="list-style-type: none"> <li>Import array as Arr to make it short  <pre>import array as Arr</pre> </li> <li>I created an array of even integers that is less than 50 but not less than 20 using a command.  <pre>Arr = arr.array('i', [num for num in range(20, 51) if num % 2 == 0])</pre> </li> <li>Create a loop through indices 0 to length -1 and print the output to show each each element with its index position .  <pre>print("Array elements:") for i in range(len(Arr)):     print(f"Arr[{i}] = \"{Arr[i]}\"")</pre> </li> <li>Find and dsplay the largest value in tha array.  <pre>max_element = max(Arr) print(f"\nMaximum element: {max_element}")</pre> </li> <li>Creates and display a reversed version of the original array.  <pre>reversed_Arr = arr.array('i', Arr[::-1]) print("\nReversed array:") for i in range(len(reversed_Arr)):     print(f"Arr[{i}] = \"{reversed_Arr[i]}\"")</pre> </li> </ol>	

## 5. Output

```
import array as aSrr

Arr = arr.array('i', [num for num in range(20, 51) if num % 2 == 0])

print("Array elements:")
for i in range(len(Arr)):
    print(f"Arr[{i}] = \"{Arr[i]}\"")

max_element = max(Arr)
print(f"\nMaximum element: {max_element}")

reversed_Arr = arr.array('i', Arr[::-1])
print("\nReversed array:")
for i in range(len(reversed_Arr)):
    print(f"Arr[{i}] = \"{reversed_Arr[i]}\"")
```

Figure 1 Source code

```
➤ Array elements:
Arr[0] = "20"
Arr[1] = "22"
Arr[2] = "24"
Arr[3] = "26"
Arr[4] = "28"
Arr[5] = "30"
Arr[6] = "32"
Arr[7] = "34"
Arr[8] = "36"
Arr[9] = "38"
Arr[10] = "40"
Arr[11] = "42"
Arr[12] = "44"
Arr[13] = "46"
Arr[14] = "48"
Arr[15] = "50"

Maximum element: 50

Reversed array:
Arr[0] = "50"
Arr[1] = "48"
Arr[2] = "46"
Arr[3] = "44"
Arr[4] = "42"
Arr[5] = "40"
Arr[6] = "38"
Arr[7] = "36"
Arr[8] = "34"
Arr[9] = "32"
Arr[10] = "30"
Arr[11] = "28"
Arr[12] = "26"
Arr[13] = "24"
Arr[14] = "22"
Arr[15] = "20"
```

Figure 2 Output

## 6. Conclusion

In conclusion, I successfully completed the Midterm skill test exam by creating a python program that works with arrays of even numbers. This program create an array of even integers less than 50 but not less than 20, display the elements, find the maximum element and reverse the order of the array. I've been able apply my learnings in Arrays and its works and also apply operations, and execute it.

Lab Activity Rubric								 						
Criteria		Ratings						Pts						
 SO 7 PI 1 <b>Student Outcome 7.1</b> 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 <b>Student Outcome 7.2</b> 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 <b>Student Outcome 7.3</b> 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 summarize 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 <b>Student Outcome 7.4</b> 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														