

Task 4:

```
1  #include <iostream>
2  // Array example
3  void arrayExample() {
4      int arr[5] = {1, 2, 3, 4, 5};
5      int* ptr = arr; // Pointer to the first element of the array
6      std::cout << "Array Example:" << std::endl;
7      for (int i = 0; i < 5; i++) {
8          std::cout << "arr[" << i << "] = " << *(ptr + i) << std
              ::endl;
9          //Dereference the pointer to access the value at the i-th
              index
10     }
11 }
12 // Linked list example
13 struct Node {
14     int data;
15     Node* next;
16 };
17 void linkedListExample() {
18     Node* head = NULL; // Start with an empty list
19     // Add elements to the linked list
20     for (int i = 5; i > 0; i--) {
21         Node* newNode = new Node;
22         newNode->data = i;
23         newNode->next = head;
24         head = newNode;
25     }
26     // Traverse the linked list and print its elements
27     std::cout << "Linked List Example:" << std::endl;
28     Node* currentNode = head;
29     while (currentNode != NULL) {
30         std::cout << currentNode->data << std::endl;
31         currentNode = currentNode->next;
32     }
33     // Free the memory allocated for the linked list
34     currentNode = head;
35     while (currentNode != NULL) {
36         Node* nextNode = currentNode->next;
37         delete currentNode;
38         currentNode = nextNode;
39     }
40 }
```

```
41 ~ int main() {  
42     arrayExample();  
43     linkedListExample();  
44     return 0;  
45 }
```

Output:

```
/tmp/sUCMCaxzCY.o
```

```
Array Example:
```

```
arr[0] = 1
```

```
arr[1] = 2
```

```
arr[2] = 3
```

```
arr[3] = 4
```

```
arr[4] = 5
```

```
Linked List Example:
```

```
1
```

```
2
```

```
3
```

```
4
```

```
5
```