

■ College Answer Generator

Comprehensive Answers for Computer Science

Subject:	Computer Science
Answer Mode:	Understand Mode
Total Questions:	1
Generated On:	August 05, 2025 at 03:04 PM
Custom Instructions:	Yes

Detailed explanations with analogies, examples, and comprehensive understanding focus.

Question 1

Q1: Explain the use of custom attribute directive and highlight the difference between ElementRef and Renderer in Angular.

Answer:

Custom Attribute Directive

A **custom attribute directive** in Angular is a reusable piece of code that can modify the behavior or appearance of DOM elements.

Key Components: • decorator for metadata • Dependency injection for ElementRef and Renderer2 • Input properties for customization

Code Example:

Mathematical Complexity: Time complexity: $O(1)$ for directive application
Space complexity: $O(n)$ where n is number of elements

Key Differences: ElementRef vs Renderer2

ElementRef	Renderer2
------------	-----------

---	---
-----	-----

Direct DOM access	Safe DOM manipulation
-------------------	-----------------------

--	--

Browser-dependent	Platform-agnostic
-------------------	-------------------

Special Characters & Symbols: - Angular uses TypeScript (superset of JavaScript) - Lifecycle hooks: OnInit → OnDestroy - Decorators use @

symbol - Template syntax includes [property] and (event) binding

- Conclusion: **Use Renderer2** for safe, cross-platform** DOM manipulation instead of direct ElementRef access.