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AutoServe -Automotive Service Management System

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Abstract: AutoServe is a web-based automotive service management system designed to improve the working of automobile service centers.
Many garages still depend on manual methods such as paper records and basic spreadsheets, which often lead to errors, delays, and poor management.This system provides a complete digital solution where customer data, vehicle service history, technician work, inventory, and billing are handled in one place. It also includes a dashboard that shows real-time updates about services, stock levels, and performance.
The system is developed using modern technologies like Next.js, TypeScript, MySQL, and Clerk authentication to ensure security and smooth performance. By using this system, service centers can reduce manual work, improve accuracy, and provide better service to customers.
Keywords: AutoServe, Service Management System, Garage Management, Inventory, Dashboard, Next.js, MySQL.

I. INTRODUCTION

The automobile service industry plays an important role in maintaining vehicles and ensuring their proper functioning. However, many service centers still depend on traditional methods like registers or manual entries to handle their daily operations. These methods are time-consuming and can lead to problems such as data loss, incorrect records, and poor communication with customers. AutoServe is designed to overcome these challenges by providing a digital solution for managing all service-related activities.

The system allows service center staff to manage customer information, track service progress, assign tasks to technicians, and monitor inventory in an efficient way. It also provides a secure login system and a user-friendly interface. By using this system, service centers can improve their overall performance and reduce manual workload.

II. MODULE IDENTIFICATION

The AutoServe system consists of several modules that work together to provide complete service management. The dashboard module gives a real-time overview of the service center, including service status, revenue, and inventory alerts. The customer management module stores customer details along with vehicle information and service history. The service management module handles the entire service process from request creation to completion.

The inventory management module keeps track of spare parts and provides alerts when stock levels are low. The technician management module stores technician details, assigns tasks, and tracks performance. The estimation module helps in generating service cost estimates based on labor and spare parts. The reporting module generates various reports related to services, inventory, and overall business performance.

III. SCOPE

The AutoServe system is mainly designed for small and medium-sized automobile service centers. It helps in managing daily operations in a simple and organized manner. The system makes it easier to maintain customer records, track service requests, and manage inventory.

It also improves communication between customers and service providers by providing clear service updates. In the future, the system can be extended by adding features such as mobile applications, online payment options, and notification systems. This will make the system more advanced and user-friendly.

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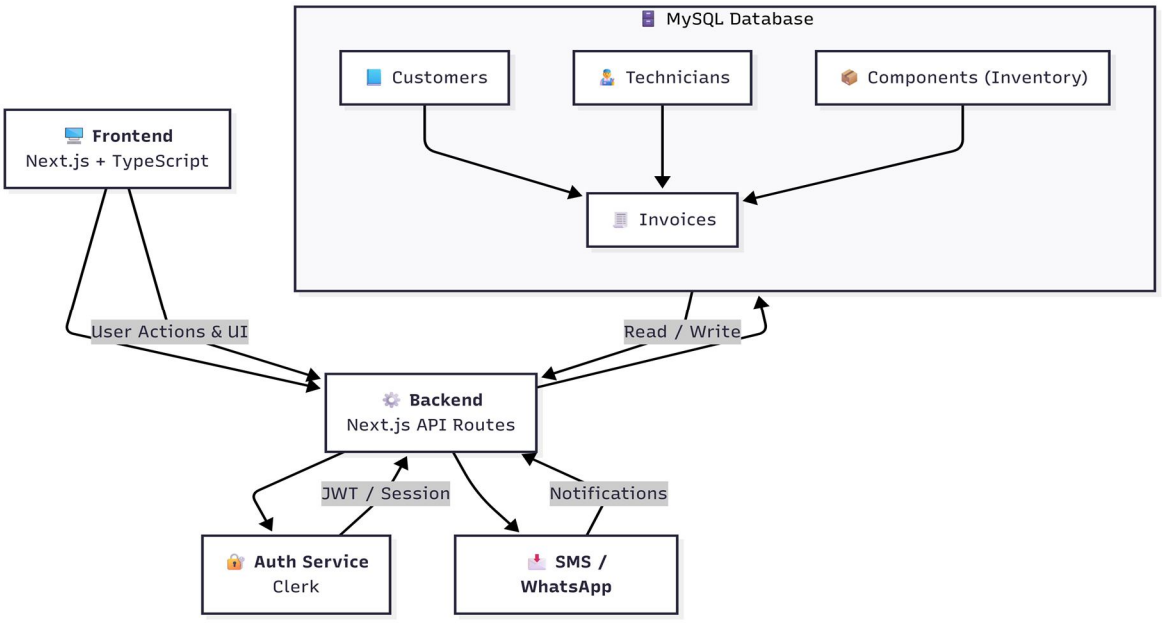
IV. EXISTING SYSTEM

Table I Existing System

Sr. No.	Title of Paper	Year	Author	Gap Identified	Key Points
1	Automotive Workshop Management System	2019	R. Sharma	Limited automation	Focused mainly on billing and records but lacked workflow automation
2	Digital Garage Management System	2020	A. Kumar	No inventory integration	Did not connect inventory with service process
3	Web-Based Vehicle Service Management	2021	L. Anderson	Lack of analytics	Provided basic features but no detailed reports
4	Automotive Maintenance Tracking System	2022	P. Singh	Poor scalability	Not suitable for large-scale service centers

V. ARCHITECTURE DIAGRAM

Fig. 1. Architecture Diagram



VI. PROPOSED SYSTEM

The AutoServe system provides a complete solution for managing service centers digitally:

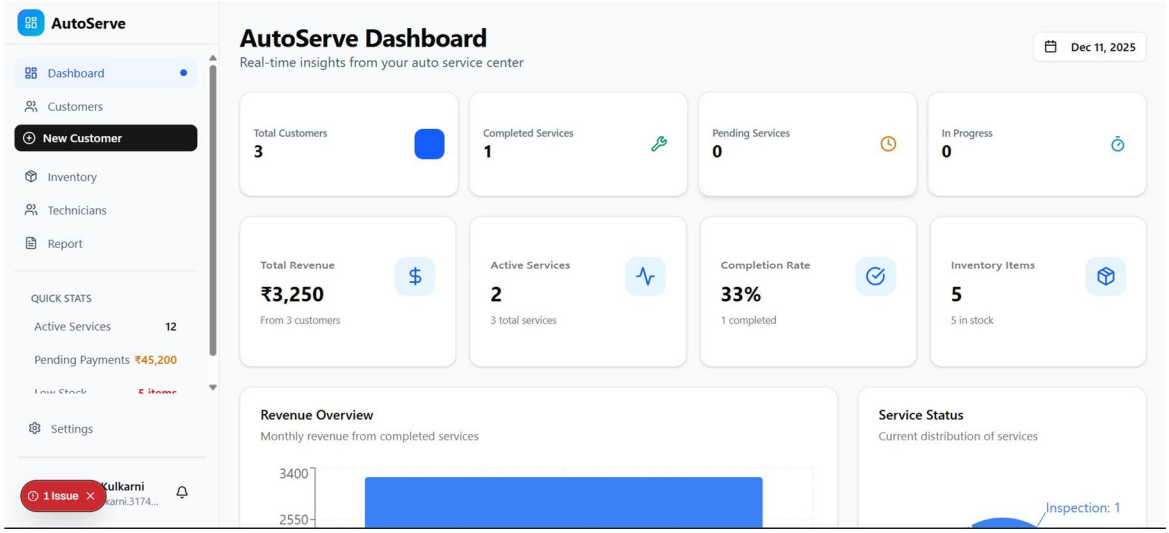
1) Central dashboard to monitor services and performance
2) Customer and vehicle data management
3) Automated service workflow from start to finish
4) Inventory tracking with low-stock alerts
5) Technician task assignment and monitoring
6) Automatic cost estimation for services
7) Secure login system using Clerk
8) Web application built with Next.js and TypeScript

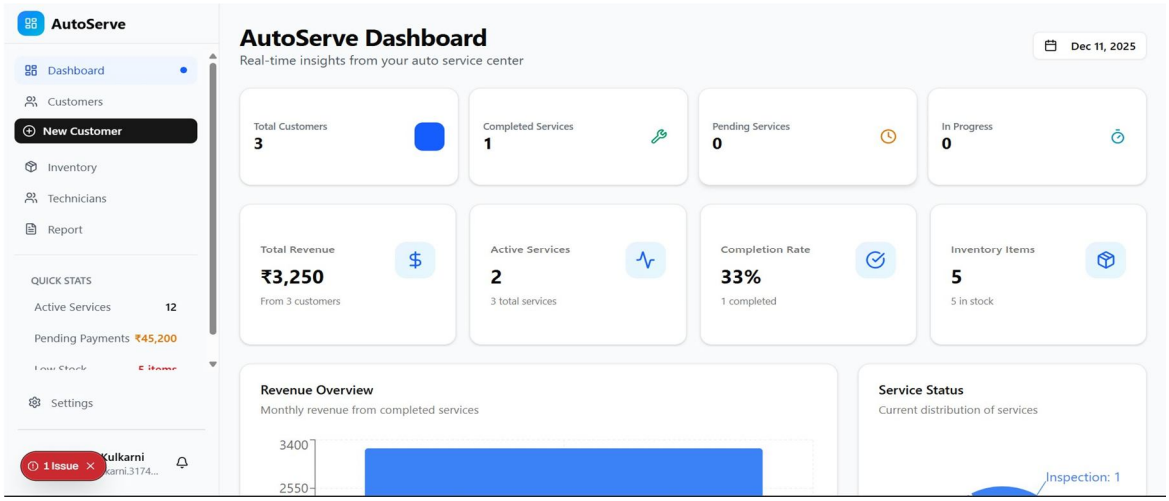
This system helps reduce manual work and improves overall efficiency.

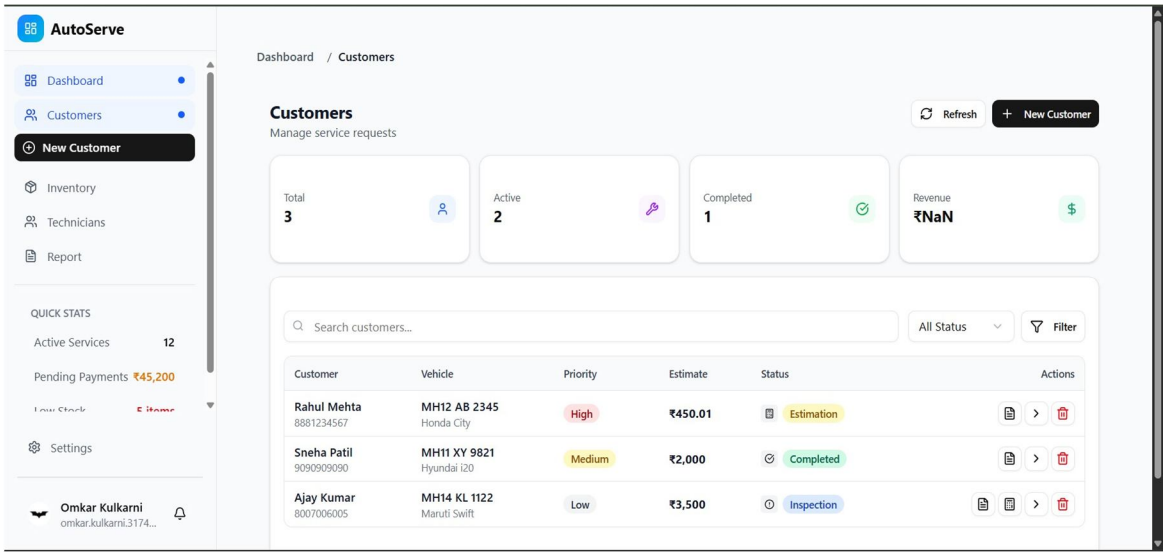
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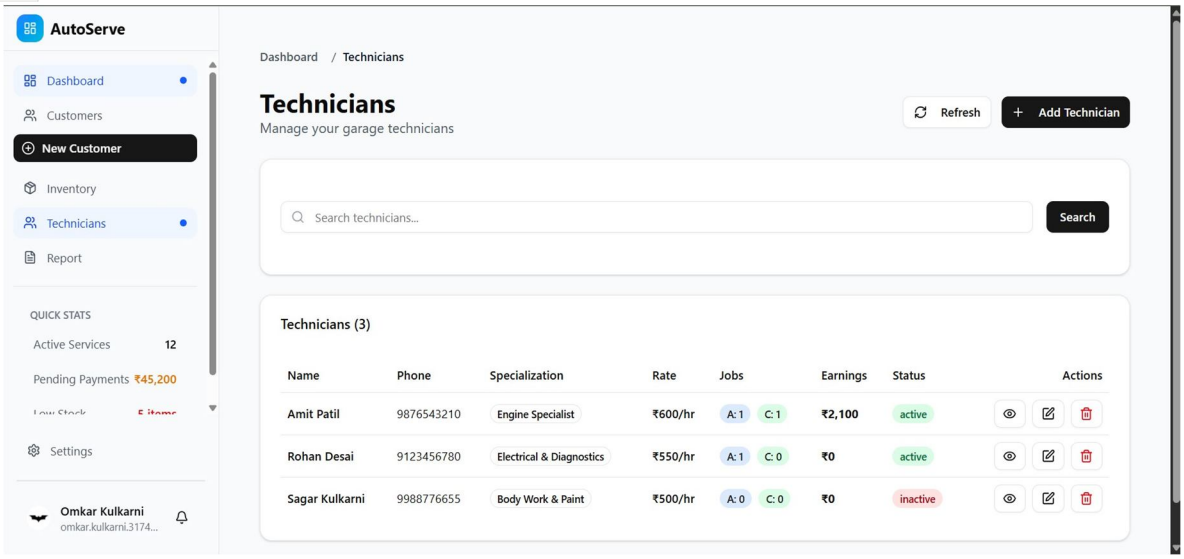
VII. RESULT

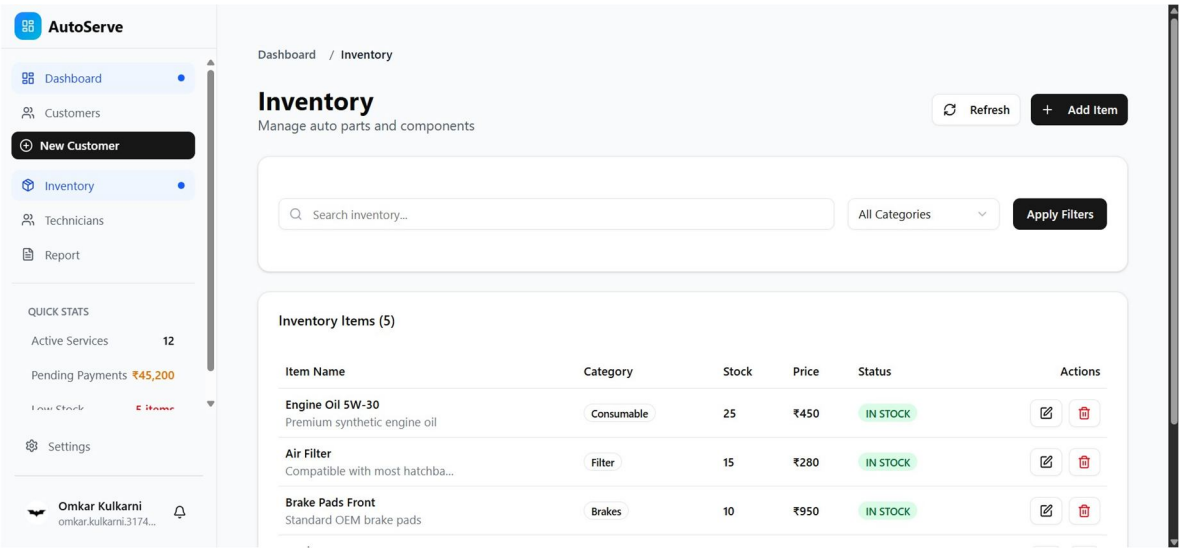


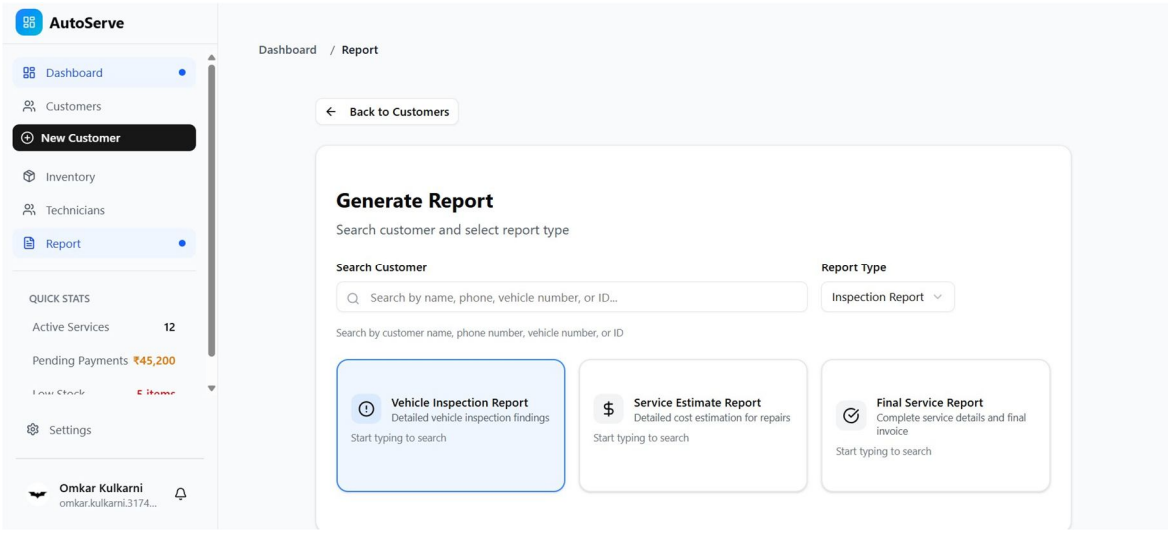




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AutoServe
Dashboard
Customers
New Customer
Inventory
Technicians
Report
QUICK STATS
Active Services 12
Pending Payments ₹45,200
Settings
Omkar Kulkarni
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Dashboard / Technicians
Technicians
Manage your garage technicians
Refresh
Add Technician
Search technicians...
Search
Technicians (3)
Name Phone Specialization Rate Jobs Earnings Status Actions
Amit Patil 9876543210 Engine Specialist ₹600/hr A: 1 C: 1 ₹2,100 active
Rohan Desai 9123456780 Electrical & Diagnostics ₹550/hr A: 1 C: 0 ₹0 active
Sagar Kulkarni 9988776655 Body Work & Paint ₹500/hr A: 0 C: 0 ₹0 inactive


AutoServe
Dashboard
Customers
New Customer
Inventory
Technicians
Report
QUICK STATS
Active Services 12
Pending Payments ₹45,200
Settings
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Dashboard / Inventory
Inventory
Manage auto parts and components
Refresh
Add Item
Search inventory...
All Categories
Apply Filters
Inventory Items (5)
Item Name Category Stock Price Status Actions
Engine Oil 5W-30
Premium synthetic engine oil
Consumable 25 ₹450 IN STOCK
Air Filter
Compatible with most hatchba...
Filter 15 ₹280 IN STOCK
Brake Pads Front
Standard OEM brake pads
Brakes 10 ₹950 IN STOCK


AutoServe
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Pending Payments ₹45,200
Settings
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Generate Report
Search customer and select report type
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Search by customer name, phone number, vehicle number, or ID
Report Type
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Vehicle Inspection Report
Detailed vehicle inspection findings
Start typing to search
Service Estimate Report
Detailed cost estimation for repairs
Start typing to search
Final Service Report
Complete service details and final invoice
Start typing to search

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VIII. CONCLUSION

AutoServe successfully demonstrates how a digital system can improve the working of automobile service centers. It combines different functionalities such as customer management, service tracking, inventory control, and reporting into one platform. The system reduces manual effort, improves data accuracy, and enhances communication with customers. It also provides useful insights through reports and dashboards, helping in better decision-making. Overall, AutoServe is an effective solution for improving efficiency and productivity in modern service centers.

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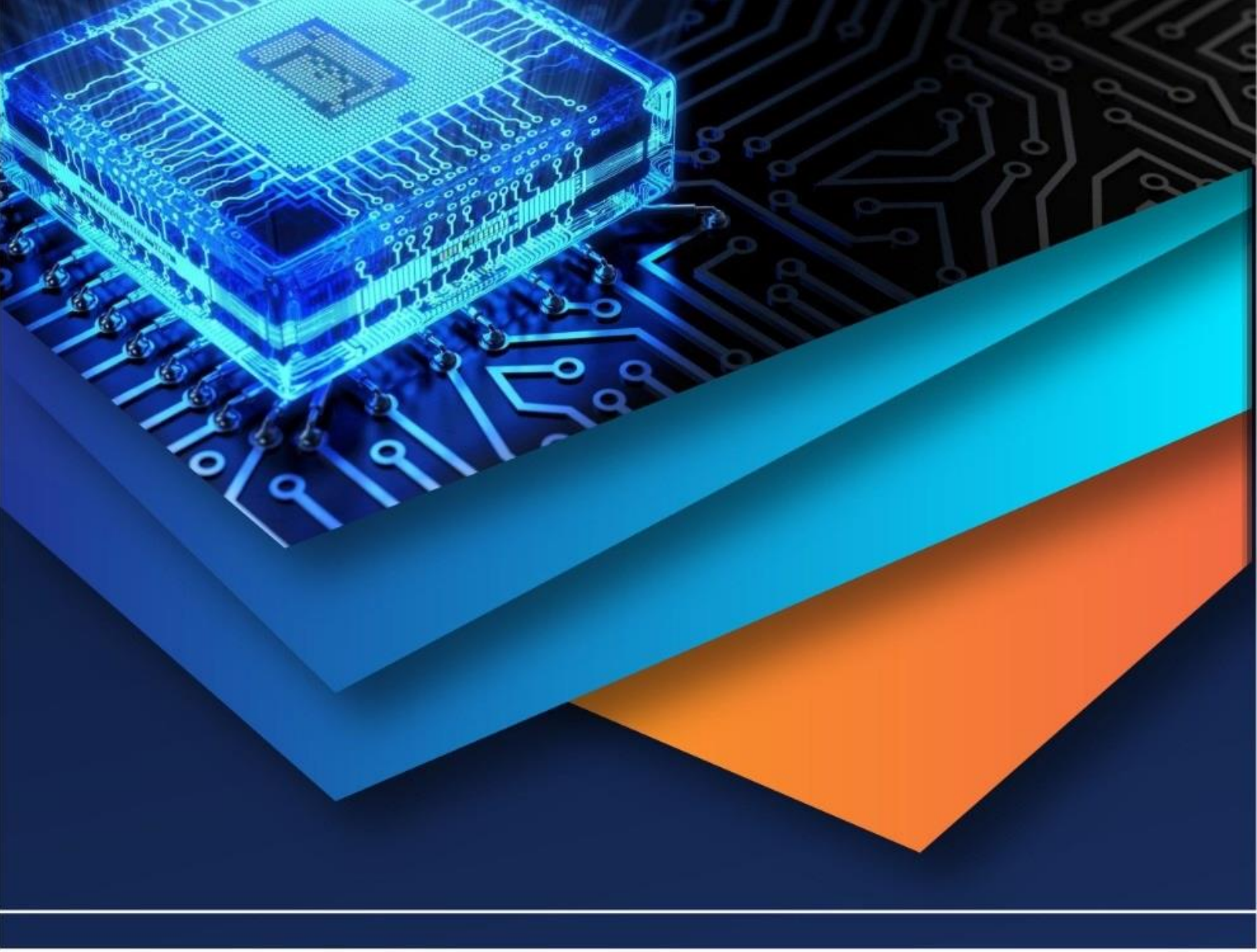
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