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Structural Query Language Question Creation by using Inverse Way

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Abstract: ***In order to store the information of the database stored in the formation or layout of tables of rows and columns Structured Query Language is created\developed. It is one of the essential practices that each and every student of the IT Department of Engineering must know. To let students understand this language, professors spend a vast amount of time building assignments and queries for students, which however results in using previously used questions and queries whom the students might have already have seen and know the answers, this method dismantle the whole motto of teaching SQL because students get the advantage of less number of queries and questions and no need of brainstorming for answers. This paper discusses the inverse process of producing Structural Query Language exercises by producing answers first rather than questions which not only saves the time of instructors but also generates a spread of SQL questions, and also introduces the framework which is developed by using an inverse method. This paper also arrange\talk about reviews on superiority \ benefits and scope in the future of using inverse way\process over normal methods for producing Structural Query Language exercises.***
Keywords: structural query language, automate the process of generation of SQL questions, learning SQL, SQL DML, SQL DDL, inverse way of generating questions.

I. INTRODUCTION

The majority of the applications in information Technology include putting away and recovering data from data sets. The method of knowledge storage, manipulation, and retrieval wants the data of info languages like SQL. For the administration\ management of data, it is kept inside the arrangement of tables of lines and column sections. The structured Query language is developed. it's one of the basic practices that each engineering student ought to understand. It is a commonplace language for forming queries to access relative information systems, e.g. produce tables, read, update, and delete knowledge from the info. Thus, it is usually schooled in computer science categories and most engineering schools embrace SQL in their course.

In order to teach and build the students learn and apply SQL commands fitly, the SQL professors prepare the Structural Query Language training or exercises by making the SQL queries and their corresponding SQL questions. principally following 2 strategies typically. The first one is to create exercises with table schema. This method much loved is to create queries for info schema like a table with x columns, y rows,z keys, etc. here there's no got to contemplate table values, and the second technique is to think about the information within the schema with the records or knowledge keep within tables at intervals information, which ends up in the higher quantity of group activities for college kids and that is most popular thus students grab it simply. This technique will consume loads of your time to create queries or questions for academics so the academics most of the time use antecedently engineered or used queries that are already been through students, which ends up in less competitive exams for the scholars. Therefore there's would like of system which can play an important role in the understanding of this basic idea for any new engineering student, therefore, we're proposing a system that might generate queries and questions that supported the information within tables and facilitates the academics to line competitive exams yet as this technique can help students to travel through a lot of and a lot of queries.

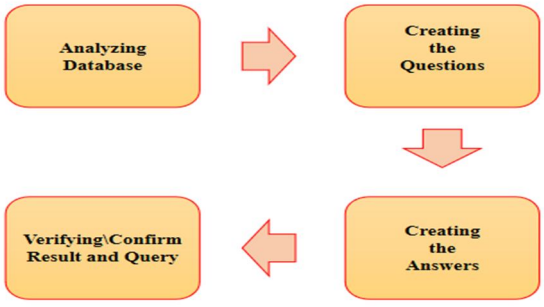

Fig.1 Traditional method of creating queries

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II. LITERATURE REVIEW

The customary method used previously by instructors is reversed by RSQLG. RSQLG creates the answers first, questions Instead of creating questions and answers for [1].

In this paper, the author describes the pros and cons of the present approaches in the task of text to SQL. We look into the ones making use of syntax parsing and the others that use deep learning methods to predict the appropriate queries [2].

In the conventional approach, The first query is created and then Questions, but the inverse approach in this paper first creates Questions [3].

The use of Natural Language makes it comfortable for any human being. This system helps users to easily retrieve data from databases using simple English language. The user need not learn complex query language like SQL [4].

The author noticed that very few works deal with the translation of SQL to OCL. The lessons learned by defining the presented mapping appear to us as a good starting point to address the backward traceability from SQL to OCL [5].

The aim of this project to develop a system that converts into a My-SQL query from a natural language statement, to get information from respective databases. The main focus of this system is to create complex queries [6].

This book is organized in multiple sections and includes an overview of Data Definition Language (DDL) and Data Modelling Language (DML) syntax. Each section presents some SQL code extracts with a proper and argumentative discussion [7].

III. OBJECTIVES

A. The primary goal is to provide a framework through which can generate questions of Structural Query Language using the Inverse process of SQL query generation algorithm.
B. To help the students by providing an easy-to-learn and use platform.
C. To help the professor to produce more and more questions and queries on SQL for the better tests of students.
D. To offer the solution for the newcomer's fear of SQL language.

IV. PROPOSED SYSTEM

The proposed system is a GUI application that moreover works as a framework. In this system, we have added SQL operations like DML and DDL. The inverse process is to *Analyse dataset\database-->produce\create queries-->create their questions-->verifying result and query*. The proposed accepts a database as input then Analyses or pre-processes the database tables. Then provides the user a list of all the available database tables, in which the user or student can select the table to do perform operations. Once the table is selected the framework uses the inverse of Structural Query Language generation of question algorithm to build questions and queries, then all the created SQL queries and associated natural language questions will be shown to the user at the same time

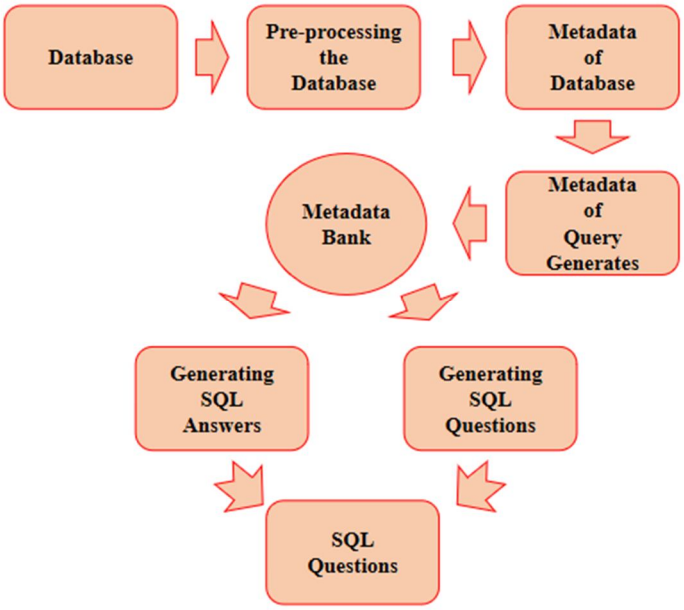

Fig. 2 suggested structure

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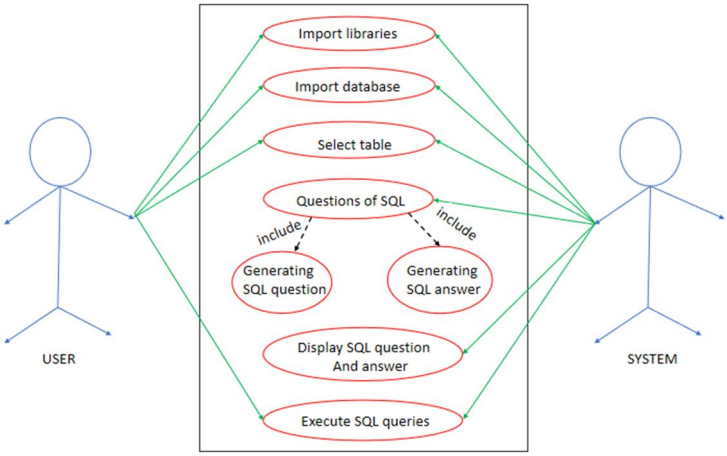

Fig.3 Use Case Diagram

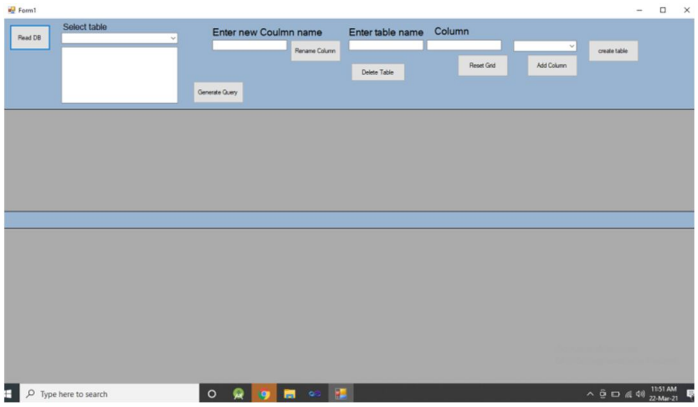

Fig 4. system First page

Here First need to click on Read DB after clicking it, it will read the database after that can select table it will show the tables after that clicking on generate query it will show the SQL query and questions and then after clicking on execute button it will show the output of selected table and next can change the name of the column in the table just need to click and then enter the new name in enter new name column name. In the below photo you can see queries, questions, and executed query

In Fig.6 all operations have been shown. This project can create a table and also can able add column name and its data type if the wrong data type is added\selected by mistakenly then can able to change it by clicking Reset grid and have to click on add column to insert column in the table which is created by us after that click on create a table to create a table.

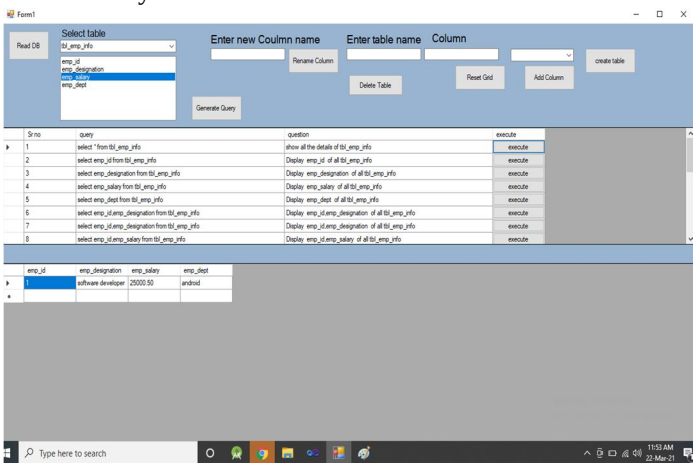

Fig.5 Table Execution

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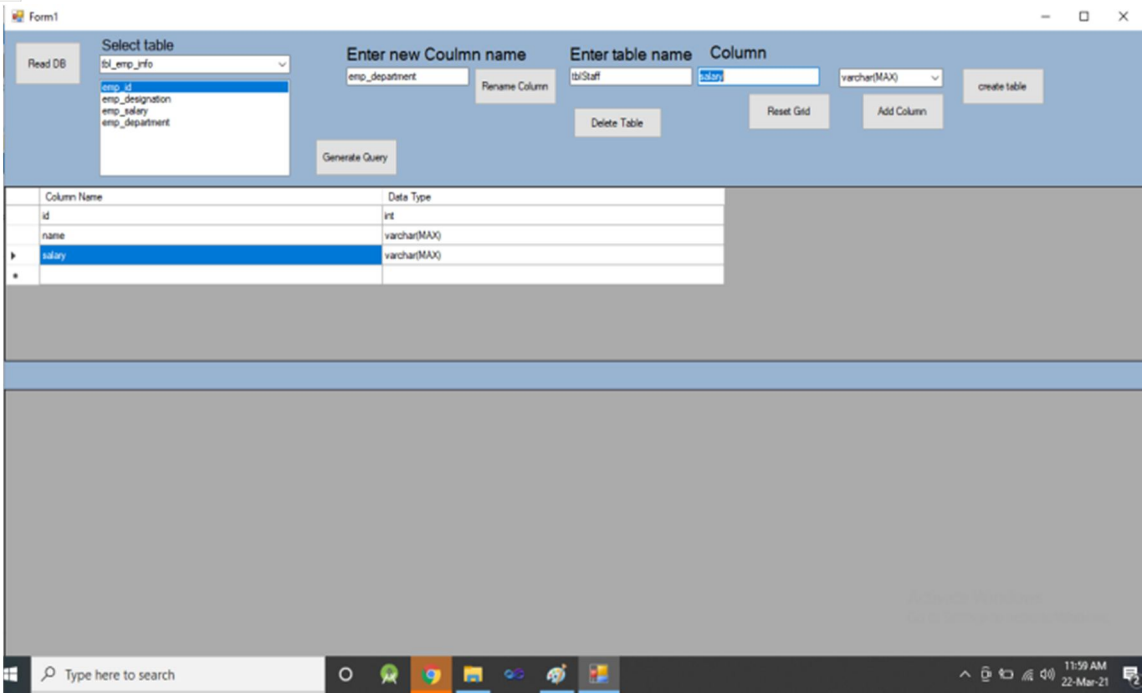

Fig.6 Executed queries

In the below image as we can see Query is executed and there are two employee data and added one more button called Enter Query.

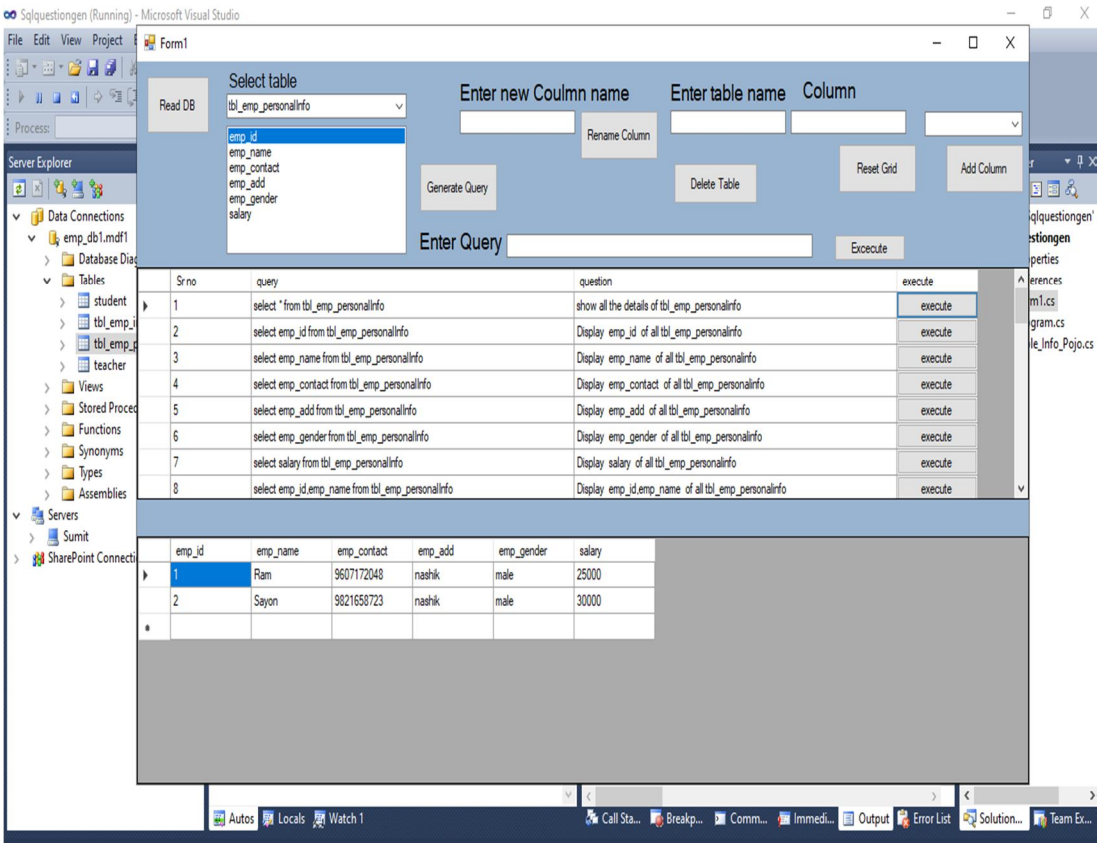

Fig.7 Enter Query-1

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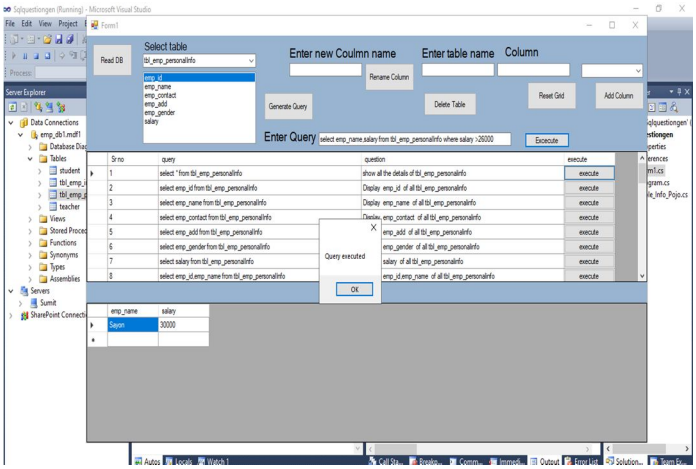

Fig.8 Enter Query-2

In order to perform a query have to write any query in Enter Query after that click on the execute button if Query is correct only and only then query executed message will be shown and if the query is not correct it will not show anything. In Fig.8 query has been written in order to show the name and salary of the employee whose salary is greater than 26000 so it shows one employee whose salary is greater than the mentioned salary. In this way, we can insert, delete, update and many more queries can execute. This is beneficial to SQL learners this way he can try different queries and get more knowledge.

V. SYSTEM REQUIREMENT

A. Software Used

Microsoft Visual Studio 2010 ultimate.

B. Technology Used

1) C#.net
2) Structural Query Language

C. Hardware Required

1) Computer device with active internet connection
2) Operating system: Windows 10/Linux
3) Processor: Intel i3 or higher with minimum 2.4 GHz clock speed
4) Ram: 4 GB DDR3 or higher

VI. CONCLUSION

Creating different kinds of questions for teaching SQL language to students or learners requires a large amount of time and effort which can increase the teacher's or instructor's workload. Using the inverse method is much more advantageous or valuable for creating Structural Query Language exercises than the conventional or regular method.

This system gives some suggestions so that it is useful for users. In the Future, we can insert some suggestions framework in this system so that users will have to take minimum efforts.

This system has a dynamic framework in which we can also create new tables as per our convenience in the database, along with that the framework also allows us to rename the columns in existing tables or to change their table names and many more things. This dynamic method provides us structured queries along with questions in the natural language so students can understand what exactly the particular query is looking for in the table. Besides this, we can run a query in real-time and get the desired results. This system is very much helpful for beginners to understand the basis of SQL.

This suggested system \ method can be used for tutoring Structural Query Language to the starters in colleges if it is further developed. It has much superiority such as it minimizes the time and work of the professor in making exercises, and minimizes the workload of the educators of generating questions normally, which saves their time. Also, students will get a variety of questions for practice which may lead to improvement of SQL skills of students, and learning results of students will be more efficient and so on.

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VII. ACKNOWLEDGMENT

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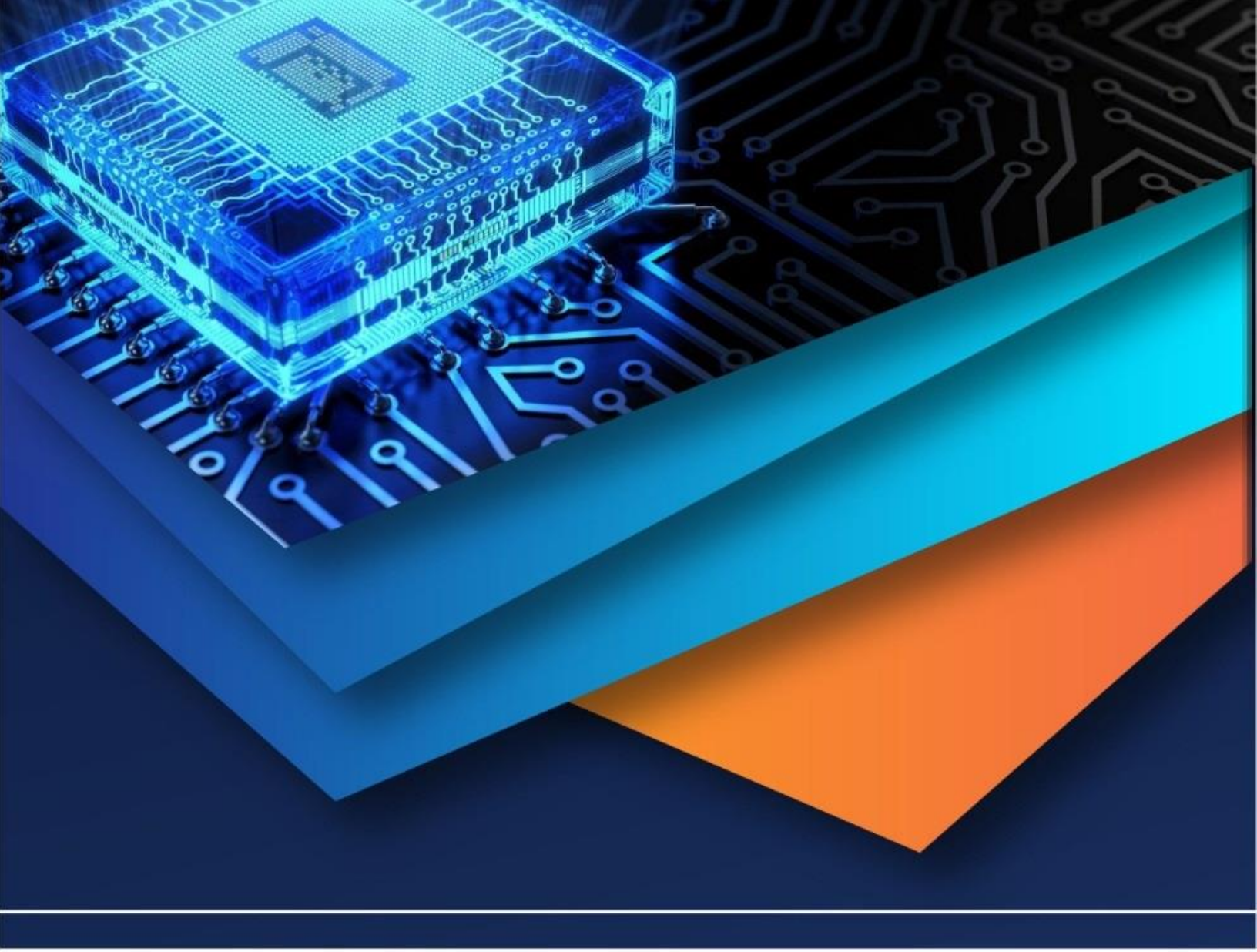

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