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Road Transport and Violation Control System

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Abstract: ***Today's scenario of traffic Challan generation system is totally manual process. So to avoid these, this paper gives overview of the system working on GPS that provides the location of the person as well as areas with heavy traffic. The information of the users are stored on the server through Google firebase and information related to that vehicle owner displays on tab of police. The traffic police can select the offences and fine will be generated automatically. The notification is send via SMS to the vehicle owner regarding challan and information regarding the fine is stored in database stored at the server side. Also GPS provides real time information about traffic police. When vehicle of the user gets towed, police checks out the information that is stored by the user which contains information regarding all the documents as well as RC book and PUC. The police can then check out the history of the user and also charge the fine according to the offence. The users can refer to the knowledge regarding the traffic acts and fine amounts. Traffic alerts are given to the user using Google Prediction that automatically fetches the current location of the user and shows the status of traffic in our nearby location. This helps the user to choose an alternate way of reaching the particular destination.***
Keywords: ***Traffic violation, Vehicle towing, Alerts, Google prediction, E-Challan.***

I. INTRODUCTION

The development of this application makes the work of users much efficient and time consuming. This system basically consists of three android applications- one for RTO officer, one for traffic police and last one for users. This system includes features like e-wallet, E-Challan, notification for towed vehicles, traffic alerts, traffic violation acts and fines. In e-wallet users have to upload all the documents related to the vehicle such as RC-Book, PUC and documents related to user itself such as driving license. So they need not to carry all these documents physically. Whenever user makes any offence then traffic police will enter the vehicle number and act related to offence in this application. So user will have to pay fine amount online.

If the vehicle of the user is towed by the traffic police from no parking area then the picture of the vehicle, current location, location from where user have to collect the vehicle and the amount of a fine a user has to pay are submitted by the traffic police. So the registered user gets notified for the same and he can pay fine online and collect their vehicle from given location. If the traffic gets high in particular area then traffic police appointed to that area will enter the location from his application and other information. So all the registered users of the city will get notification for same. In this application users can check all the traffic related acts and fine amounts related to those acts.

II. PROBLEM EXISTING

We all are aware about today's traffic challan generation systems that are done manually with pen and paper and it consumed lot of time. The work done manually leads to corruption as the traffic police writes something on the paper and pays something different to the government. Also this manual system does not keep records of the previously done violations and these offences may increase at a higher rate and which leads to higher penalties. Also in manual system the user needs to pay the fine immediately to the police which is not the real case as any of the user committing the offence needs to be provided a time period of 3 to 4 days in which the user needs to pay the fine as per the specified rule. But in recent times in the manual system the user is not provided any time period due to which he needs to pay the fine amount immediately. Thus the user faces much problem. Now moving on towards the vehicle towing, when the vehicle of a person gets towed if parked in a No Parking zone or due to any other reason, the user of the vehicle is unaware about the same and the user could not find their vehicle. The user knows about the towing of vehicle if they are informed about the same by any of the other person. Even some users are unaware about the place from where to collect the vehicle and this may leads to problems to the user. So by developing this application, the users committing any offence will be given a chance to pay the fine within 3 to 4 days of the committed offence. Also when the vehicle of the user gets towed, they will be notified so they do not face many problems.

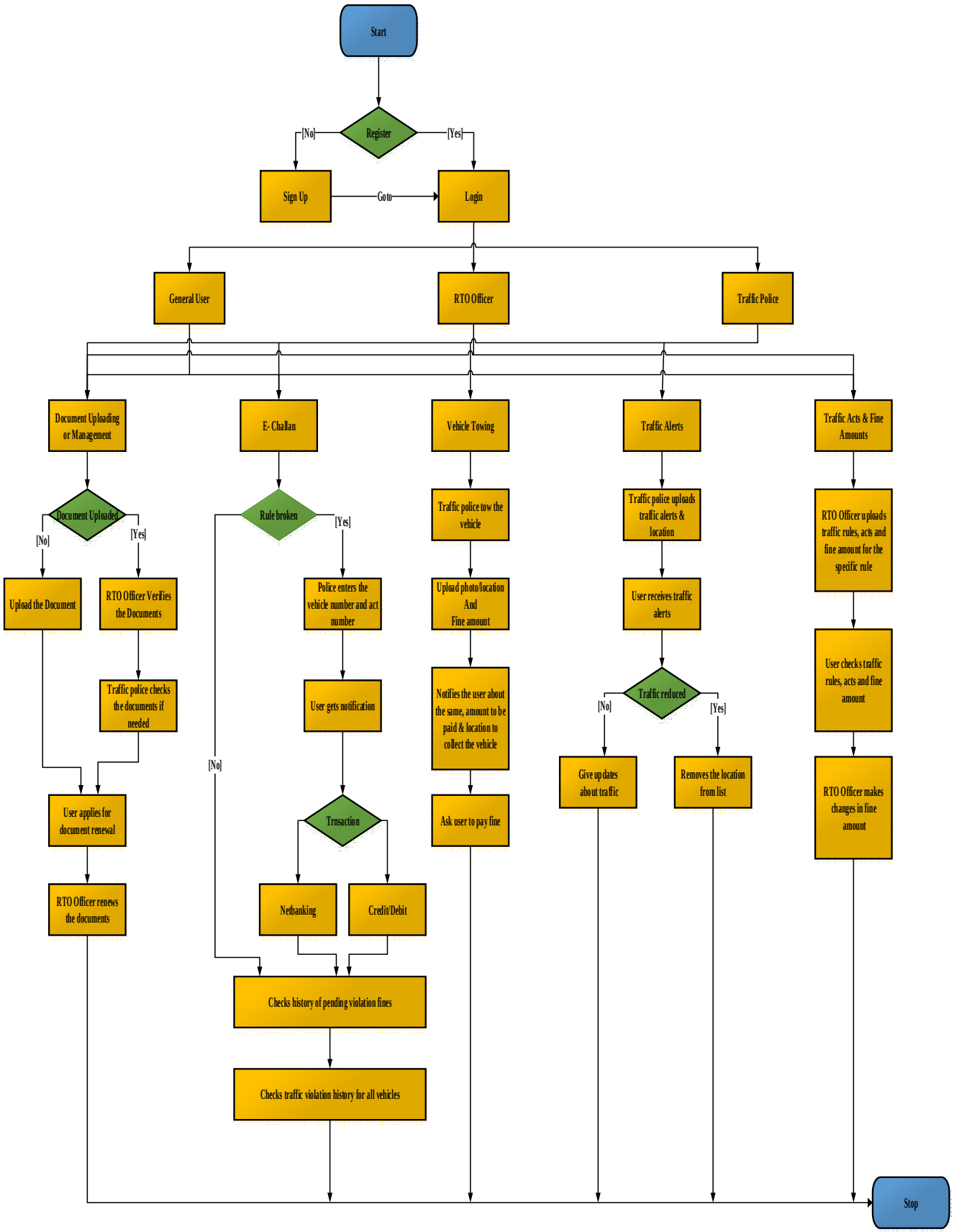

Figure 1- Data flow diagram for the system

III. LITERATURE REVIEW

The main aim of the application is to provide users with the environment that is user efficient and is less time consuming with respect to the existing application.

1) Once the user is registered to the application the user needs to enter the details through which the user can access the application. User can enter personal information that includes name, S/W/D, D.O.B, B.G, contact number and address. User also enters license information that includes license number, authorization to drive, validation details. Details of RC Book include vehicle number, chassis number and vehicle class

2) In case of a traffic violation made by user the traffic police issues a challan containing the vehicle number and description of the offence that is done by user as well as fine amount to be paid and notifies the user regarding the same. The user can pay challan by making the transactions either by net banking or by credit or debit card. The user can check the history of pending fines. User can also check the traffic violation history for all the vehicles.

3) Whenever the vehicle of user gets towed from a particular location the traffic police enters the vehicle number into the application and retrieves the user details and then sends notification to the user about the amount to be paid and the location from where the vehicle has been towed. It also includes the details from where the user can collect the vehicle after paying fine.

4) Provides traffic alerts using Google prediction, that automatically fetches our current location n shows the status of traffic in our nearby locations. It shows red line for heavy traffic in nearby area, orange line for moderate traffic in the nearby area and green line for free roads.

5) The traffic rules, acts and fine amount for the specific rule are uploaded which can be referred by user. The fine amount for the specific rule can also be updated at some time interval.

IV. IMPLEMENTATION

A. *Client Side*

1) *Starting the application:* The user needs to install the “RTVC” application on his Android based device. After installation, the icon of the app will feature on the Home Screen of the user’s device. “RTVC” welcome screen will be flashed to the user on opening the application.

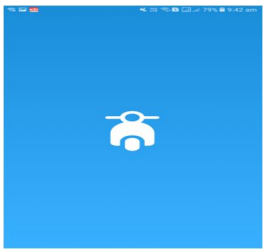

Figure 2:Main Screen

2) *Registration:* Initially, the user has to register his details with the application for the first time. This is a one-time registration. User will be sent the OTP using which user can verify the identity. The user has to enter details like username and phone number .All this data will be stored on server.

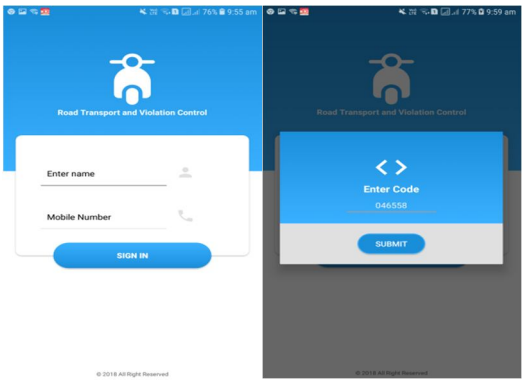

Figure 3: Login Page

3) *Home page:* Once the user registered to the application user will be redirected to home page. Home page contain the information about whether the user has been verified by the admin of the application or not, where yellow sign indicates that the user's verification is still pending. Once the user gets verified by the admin it turns to blue sign. Home page also contains the link to License, RC book, E-Challan, Towing, Traffic alerts and Rules page.

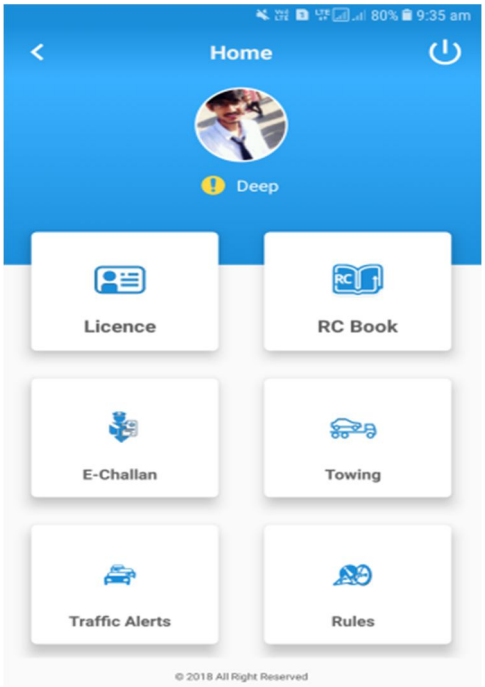

Figure 4: Services

4) *License:* License page contains personal information as well as License information. Personal information includes name, s/w/d, D.o.b, Blood group, contact number and address. License information includes License number, authorization to drive, valid from, and valid till. Updating this information to the application helps the user as he will not have to carry those documents manually. If any offence is committed by the user, the police can retrieve that information from this application.

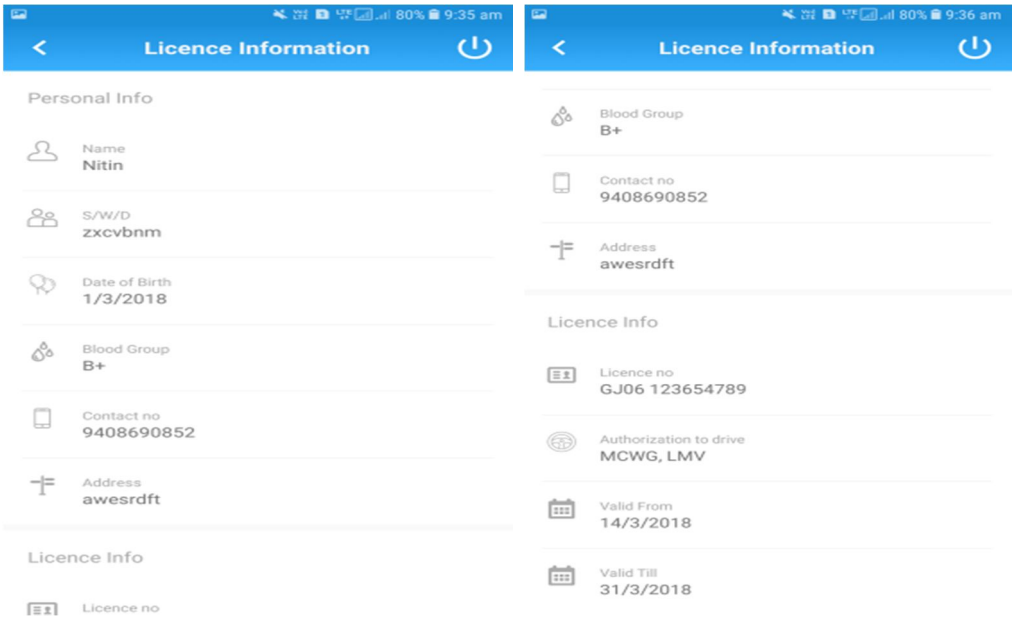

Figure 5

5) *RC Book:* RC book page contains the information such as vehicle number, chassis number and vehicle class which indicates whether the vehicle is two wheeler or four wheeler.

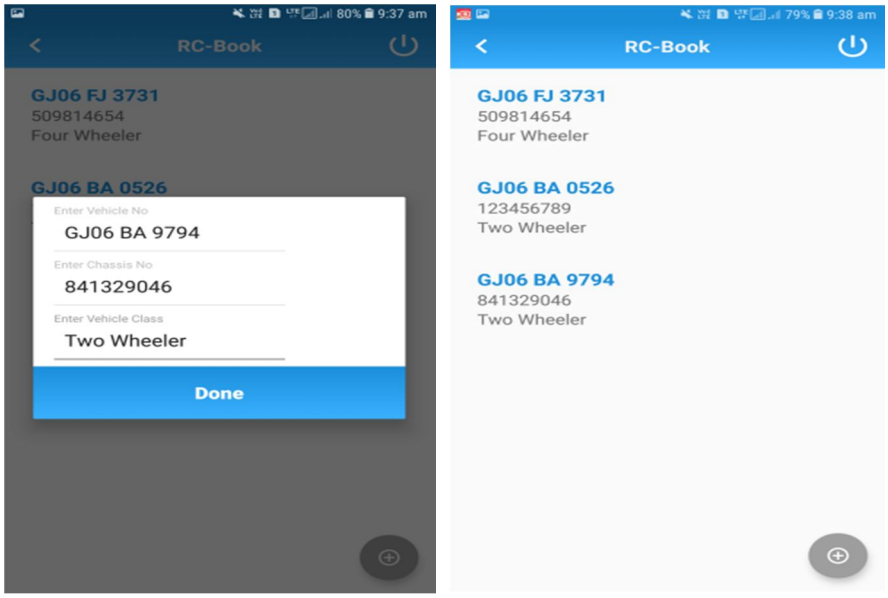

Figure 6: Details

6) *Vehicle Towing:* When the vehicle of the user gets towed the traffic police capture the picture of vehicle and enter the vehicle number to retrieve the details and then notify the user about their vehicle being towed. The towing page contains the information about the towed vehicles that includes vehicle number, date and time on which vehicle is towed, area from which vehicle has been towed, location from where to collect the vehicle and the picture of towed vehicle.

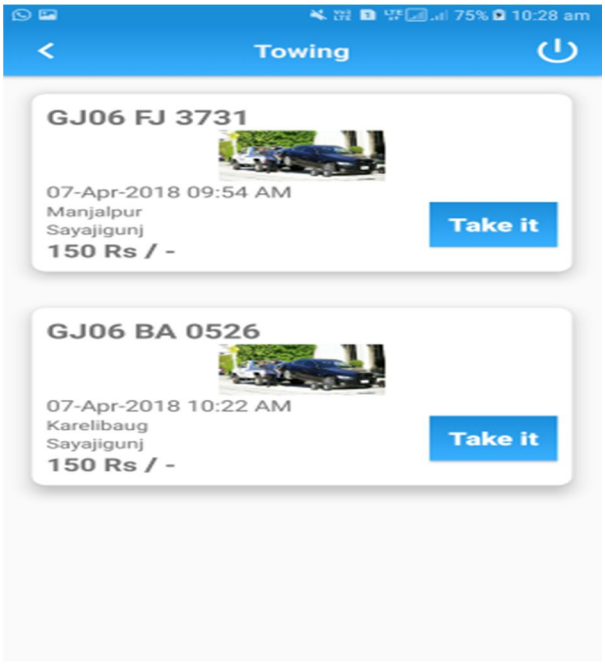

Figure 7: Towed vehicle details

7) *E-Challan:* In case any offence is made by user the traffic police issues a challan. The Challan contains the vehicle number and description of the offence that is done by user as well as fine amount to be paid. User is notified regarding the same. It also shows the status whether the fine amount is paid or is pending.

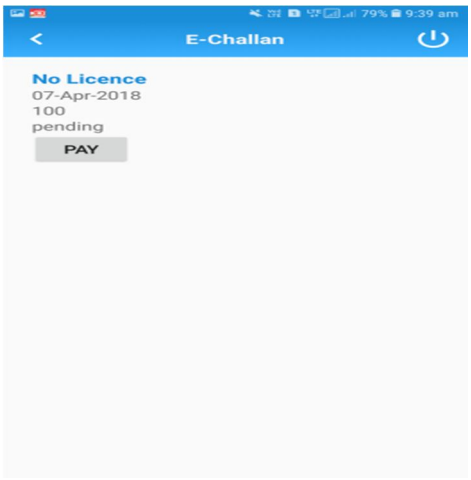

Figure 8: Challan details

8) Traffic Alert: The alert page uses Google prediction to show the status of traffic.

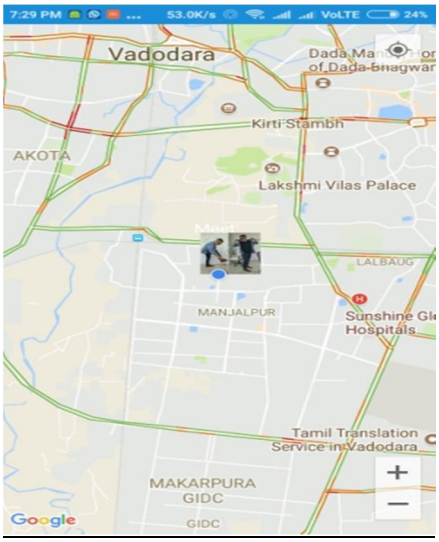

Figure 9: Traffic details

9) Rule: In rule page user can refer to the offence, fine amount and the section under which offence is committed.

SECTION	OFFENCE	FINE
177	General Provisions of punishment Refusing to play	100
178(3)	The contract carriage	100
	(a) in case of two of three wheeler	50
	(b) in any other case	50
179(1)	Disobeying lawful direction or obstructing lawful discharge of finetio	150
179(2)	Withholding information or giving lalse information lawfully to be given	150
180	Causing or permitting any person to drive a vehicle	
	(a) without a driving licence	300
	(b) without a transport vehicle authorization	150
	(c) When he is underage	300
	(d) in breach of condition of learner's license	150
181	Driving a Vehicles-	
	(a) without a driving licence	300
	(b) without a transport vehicle authorization	150
	(c) When he is underage	300
	(d) in breach of condition of learner's license	150
182(1)	When disqualified-	

Figure 10: Traffic rules

V. LIMITATIONS

A. Vehicle details and driver details cannot be gathered at particular instance of violation of rule.
B. Tracking of vehicle used by the strangers cannot be identified.
C. There is a possibility that the while sending the notification via SMS, the notification might not reach the user due to connection problems.
D. A compulsory internet connection is required for the working of the Application.

VI. FUTURE SCOPE

A. In future, instead of fetching the details manually it will be fetched through face detection as well as fetching details of user by scanning the number plate of the vehicle.

VII. CONCLUSION

In this paper, we come to the point that our research is mainly based on the fact that it provides easy and effortless accessibility to the end-users for interaction with traffic police and RTO. This application will provide a new step towards Digital India.

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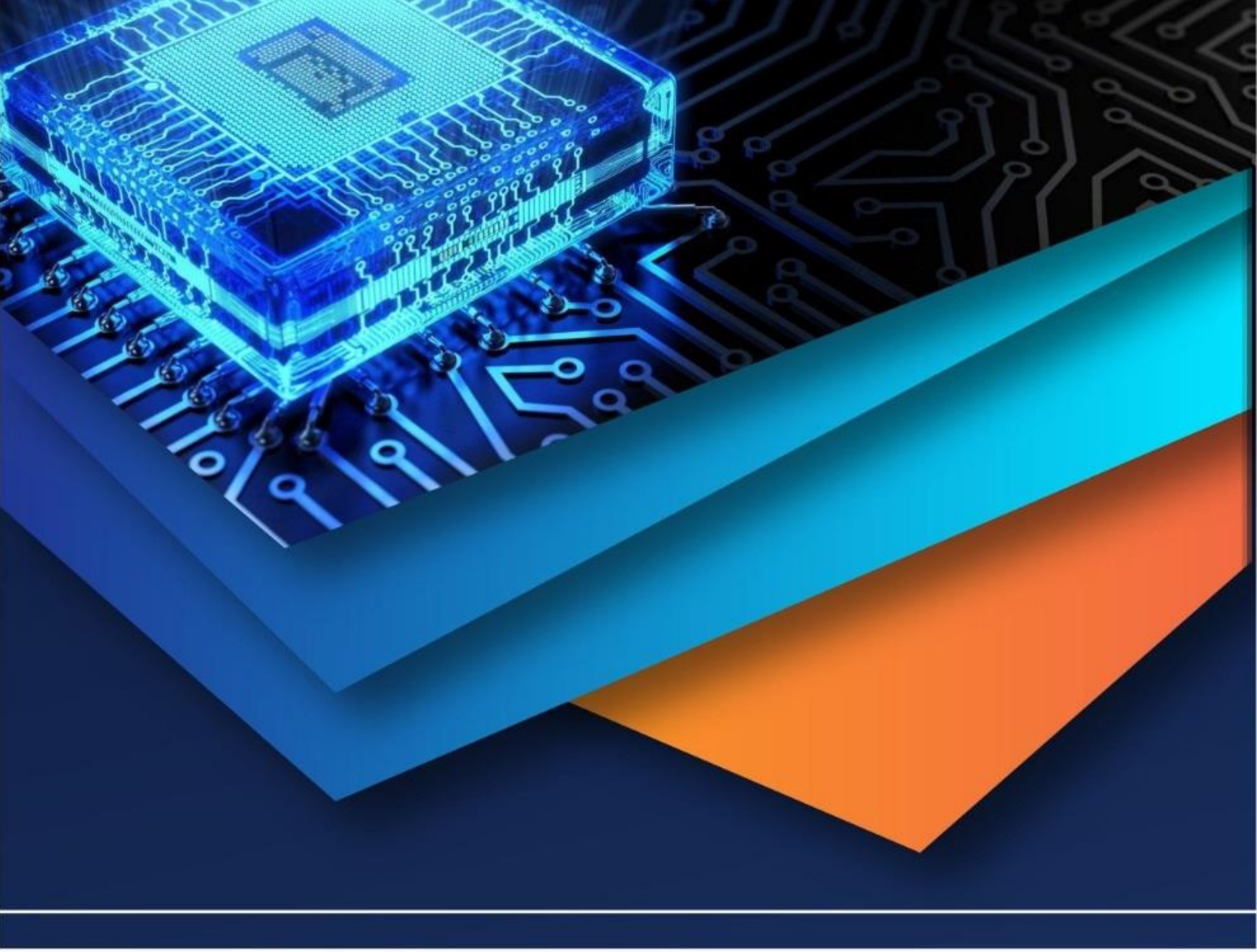
[7] http://ijesc.org/upload/f4d014088124cf284e1eeeddd7e708f2.Smart%20RTO%20Web%20and%20Android%20Application.pd



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