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Adaptive Cloud Downloading Service Using AMS Algorithm

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Abstract: ***Video content downloading using the P2P approach is scalable, but does not always give good performance. Recently, subscription-based premium services have emerged, referred to as cloud downloading. In this service, the cloud storage and server caches user interested content, and updates the cache based on user downloading requests. If a requested video is not in the cache, the request is held in a waiting state until the cache is updated. We call this design server mode. An alternative design is to let the cloud server serve all downloading requests as soon as they arrive, behaving as a helper peer. We call this design helper mode. Our model and analysis show that both these designs are useful for certain operating regimes. The helper mode is good at handling high request rate, while the server mode is good at scaling with video population size. We design an adaptive algorithm (AMS) to select the service mode automatically.***

Keywords— **AMS Algorithm, Server Mode, Helper Mode, Peer to peer.**

I. INTRODUCTION

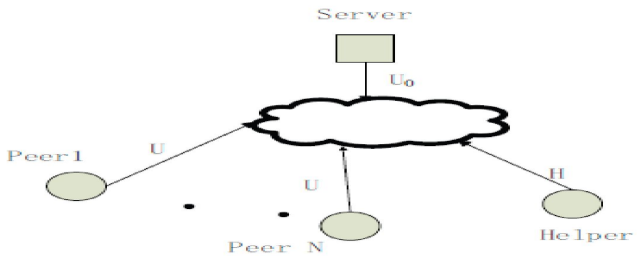
The limitation with the existing system of P2P download is that they fail to address both concurrent requests and cacheing. Every new requests is kept on hold for the server to cache the file which results in increased waiting period as well as load for the server. This paper aims at addressing both the concerns and overcoming its limitations. We make use of a helper peer to server new requests to the server and this helper peer also takes care of file sharing and contributes to other peers. The future scope is to implement the AMES algorithm to broaden the topic further to streaming devices for mobile applications.

A. System Details

1) Existing System: CDN is a traditional solution based on deploying servers at the edge of the network, near video access points. Scalability is a limitation of CDN because the server capacity becomes a bottleneck when there are a large number of concurrent peer requests.

2) *Proposed System:* Proposed system: There are two generic service modes for cloud servers. In the first mode, the cloud server is primarily focused on serving the content already cached at the cloud storage system. Requests for content not in the cache is blocked until such content becomes cached. The cloud storage system updates its cache periodically to replace content without requests by content with requests awaiting. We call this the server mode. An alternative mode is the helper mode, in which the cloud server does not block any requests. For videos that are not cached, the cloud servers simply relay chunks from some peers to other peers, acting as a helper peer. One contribution of our study is to compare these two modes analytically. The results are interesting, in the sense that both modes can be advantageous for some operating regimes - the server mode when video population is large compared to cache size, and the helper mode when peer request rate is high compared to server bandwidth. We integrate these two modes into a single adaptive cloud downloading service.

II. SYSTEM ARCHITECTURE



Module Implemented

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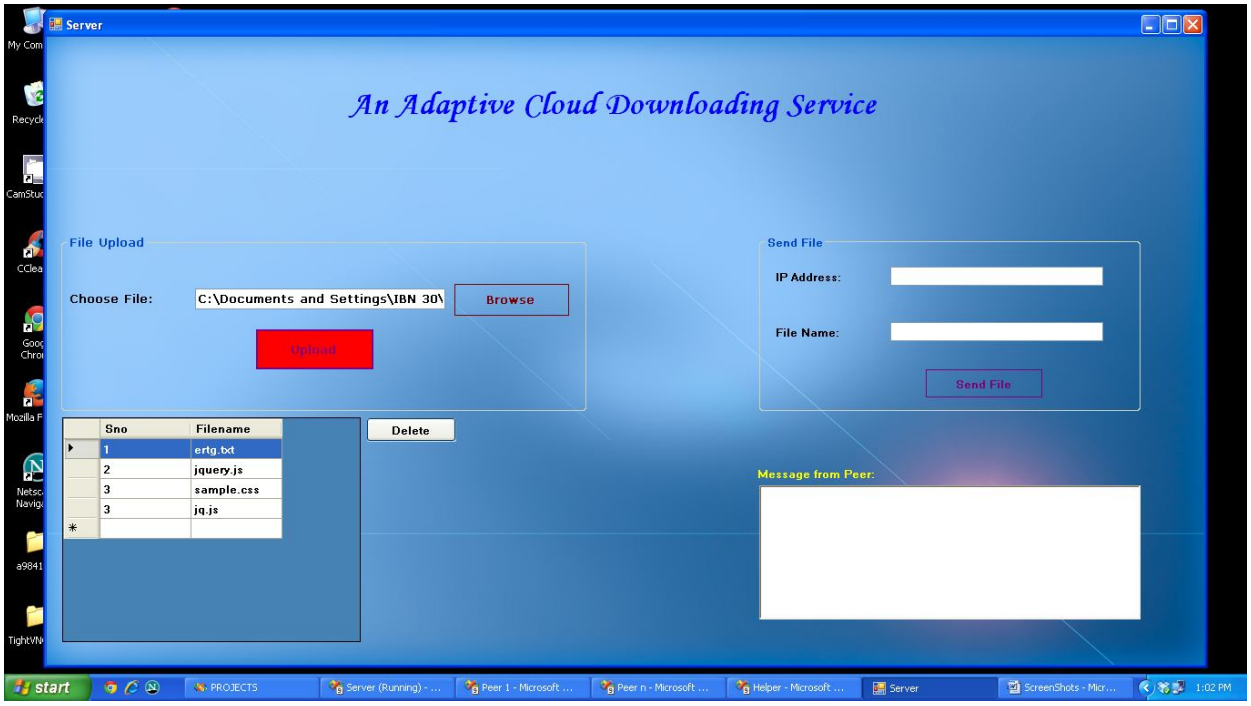
A. Server mode
B. Helper mode
C. Dynamic model
D. Mode selection

III.RESULTS



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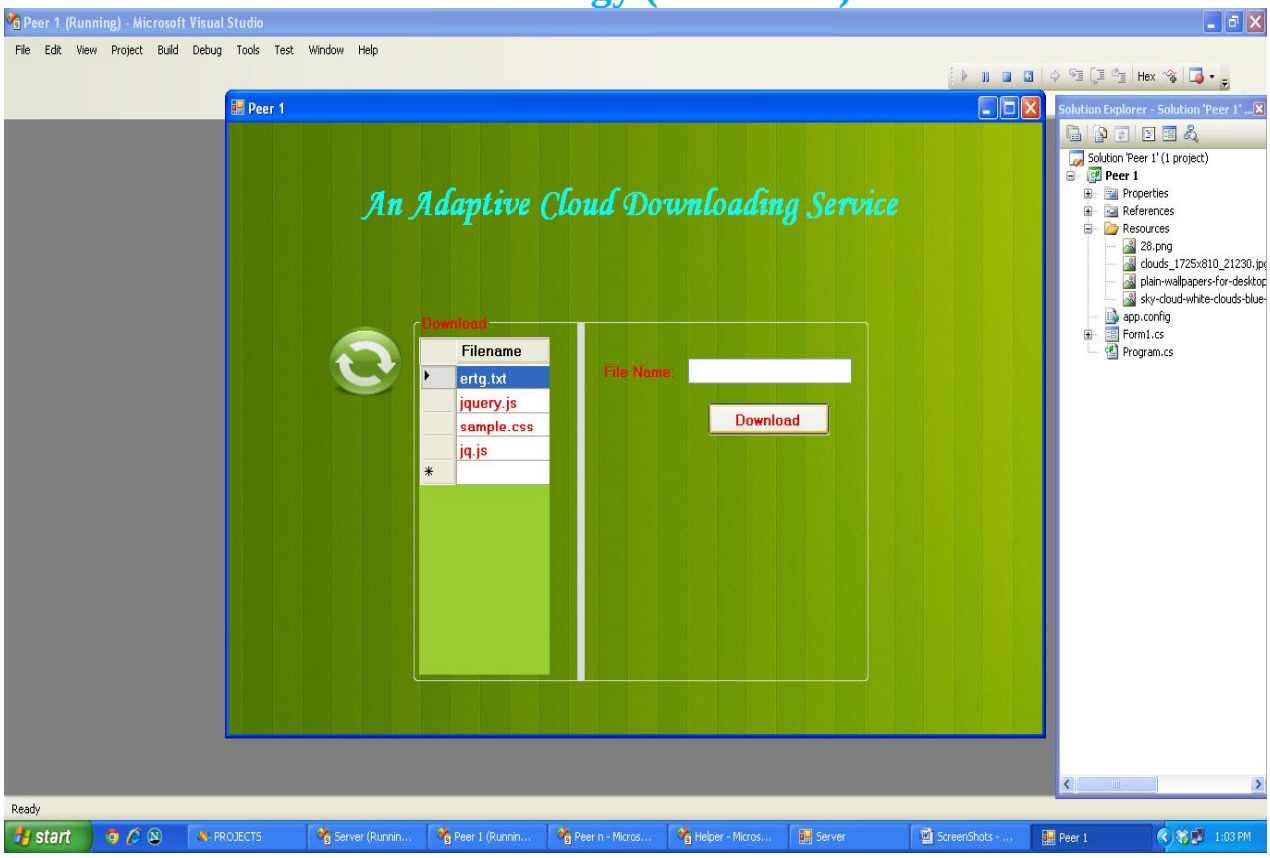

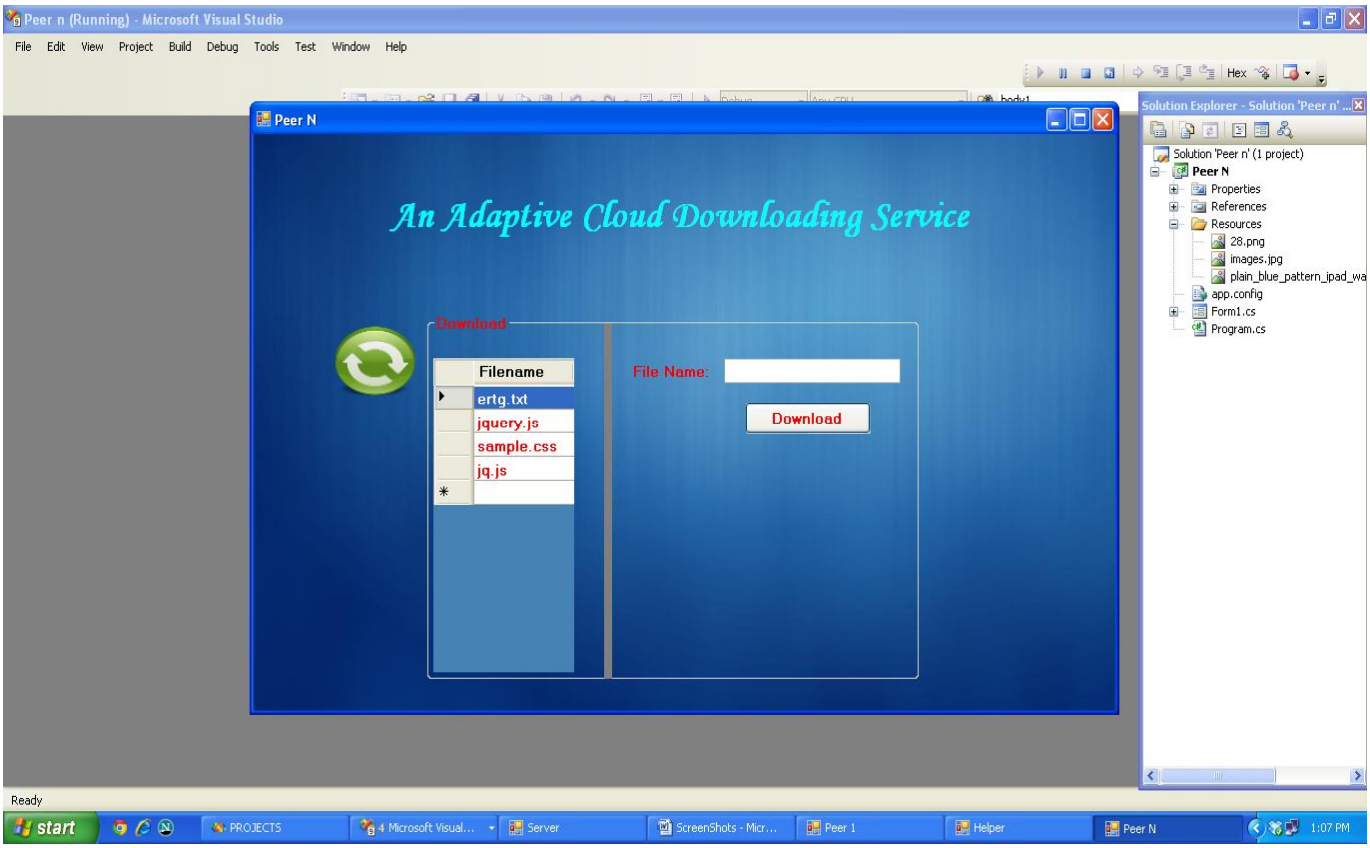

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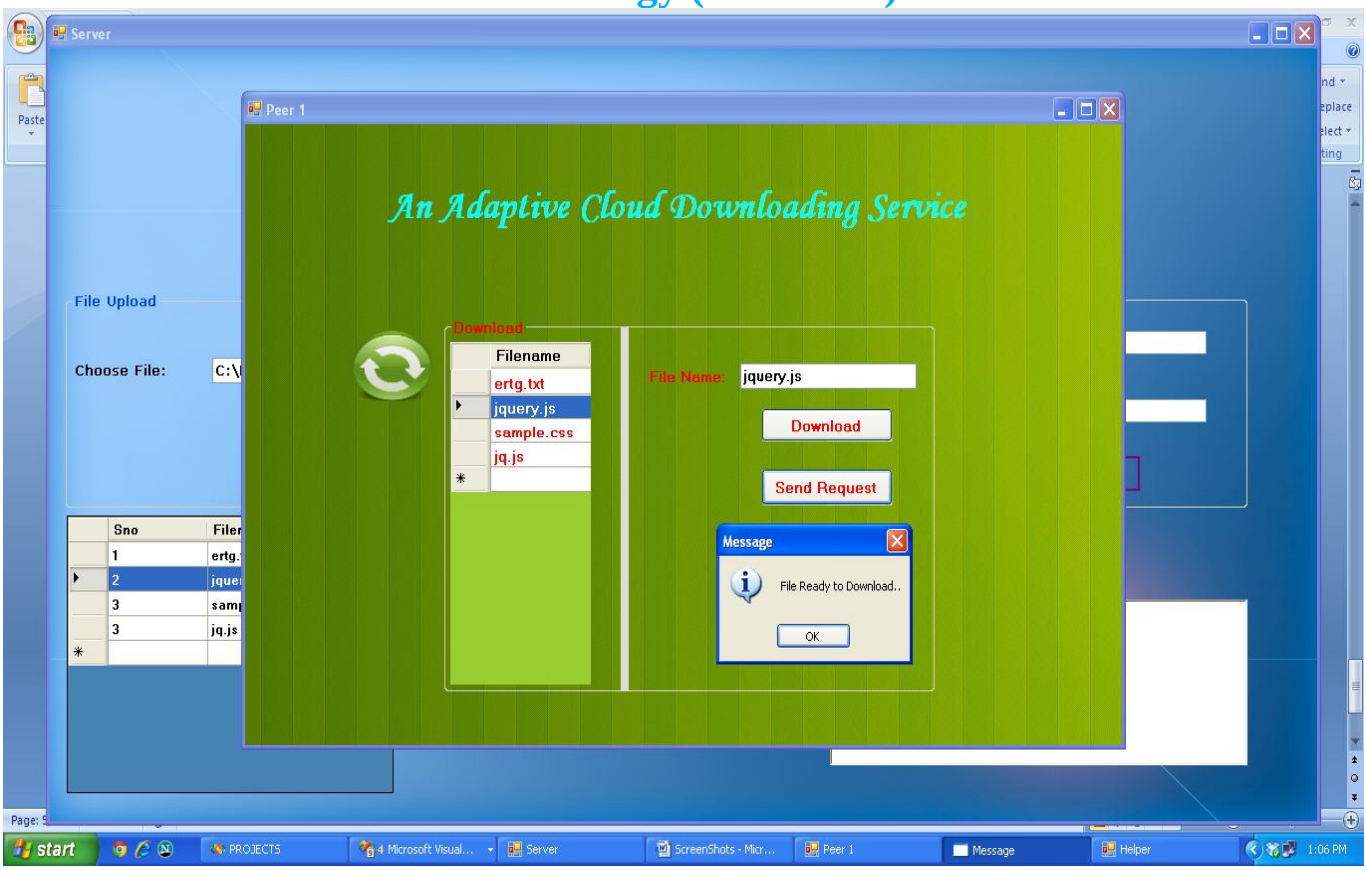

IV. FUTURE WORK

The AMS along with the AMES algorithm will address various issues with the current systems such as scalability, availability, bandwidth, caching and server uptime. It is indeed a feat to collaborate both these algorithms and make the system understand scenarios based on how each peer and each request should be handled. Upon implementation in a large scale, users will be able to enjoy improved services in terms of accessing files from the cloud while enjoying contents via a streaming service. A concurrent connection terminated by the user can be revived by a helper peer to prevent buffering from the scratch.

A. Benefits of the prototype

1) News Feed: Here user of this social site can view status from his friends like messages or videos.

2) Search Friends: Here they can search for a friends and send a request to them also can view their details.

3) Share Video: They can share videos with his friends by adding new videos also they share their status by sending messages to friends.

V. CONCLUSION

In this work, we build a theoretical model to analyze different strategies for a cloud downloading system. In particular, helper mode and server mode are used as abstraction of two different design philosophies - using the cloud as peer or as server. Our analysis reveals that each strategy can be advantages, for certain operating scenarios. Helper mode wastes some server bandwidth, but is best at leveraging P2P capacity when request load is high. On the other hand, server mode is most efficient for dealing with large video population relative to the cache size. We design an automatic mode selection (AMS) algorithm to choose the suitable service mode for different scenarios. Our analysis helps a cloud downloading system to optimize its design. We also discuss the potential benefit to apply our result for the mobile P2P case.

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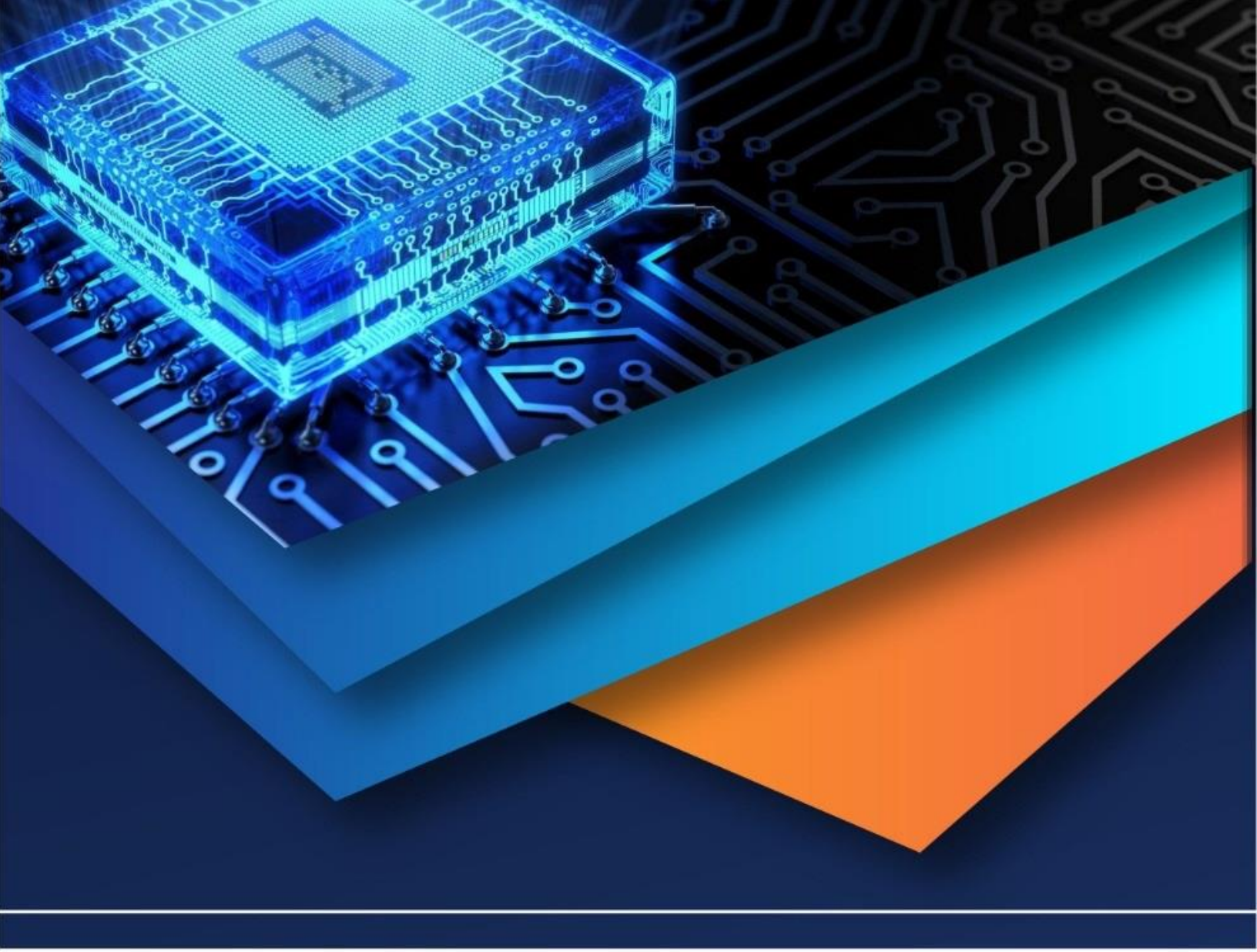

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