

CHAPTER 8

CONCLUSIONS AND FUTURE ENHANCEMENTS

This study discussed the contributions made on layer method called Heterogeneous Offer Agreement Generation system (HOAG) proposed in this research work based on the formation of three layers and the techniques used in these layers. Design of three layers provides security, filter and organize agreements to the customers. The input requirements from the customers are first fed to the Analyzer and Security Originator. In layer 1, the input requirements are filtered and analyzed with the Extracted Database. The security rules are generated with the proposed Enforcer algorithm that deduces unmatched data from the services. After authentication, the credential data next moves to layer 2, where it reduces the overloaded transactions. During the bulk reduction, it classifies the filtered data using the proposed Efficient Trim Down (ETD) classification algorithm. Finally, the accurately classified data are sent for bank progression and are used for customer agreement generation. This architecture reduces the over burden of incoming requests and generates heterogeneous agreements to the required customers.

Layer 3 executes offer based agreements with the help of Decision Managers. Here, the customer requested requirements are evaluated and it prepares the service agreement. Then this agreement is sent to the chosen service customers. If the customers are satisfied with the document, they procure the services. The main contribution of this work is that it reduces the customer searching time and provides secured and classified processing requirements.

8.1 ANALYZER AND SECURITY ORIGINATOR SYSTEM

This is the first layer of the proposed HOAG system that provides two types of analysis on gathering requirements and providing security. The customer requirements are varied based on the accessing time with multiple services. Moreover, providers may offer different services to the customers. If the requirements are satisfied, they request for services. This HOAG system offers multiple qualified services to the customers the agreed requirements are collected initially. All the gathered requirements are analyzed and securely evaluated with the proposed Enforcer algorithm. The algorithm has been designed with two categories of Enforcer Encryptions and Enforcer Decryptions. Enforcer Encryptions are categorized into Enforcer Encryption E1 and Enforcer Encryption E2 types similarly the, decryption techniques are also categorized as Enforcer Decryption D3 and Enforcer Decryption D4 types.

The first Enforcer called Encryption E1 gathers the input requirements and performs the encryption. The user details like service Id, transaction Id, password and charge amount are collected from the individual clients. The, Enforcer E1 gets transaction Id and password whereas the Enforcer E2 gets user login time and cipher text of Enforcer E1. On these two encryptions, output of Enforcer D3 decrypts the cipher text using the token labeling date. This date is based on the accessing time of users which can be either at AM or PM. At the end, the Enforcer D4 decryption is processed on Enforcer D3 cipher text and the service Id. The purpose of doing two encryptions and two decryptions is that it reduces hacking and judging of credential information by the third party. The main advantage of designing this layer is that it provides an authenticated security and filters the input requirements. From this execution, the generated keys are temporarily stored in the Arbitrator. This acts as a temporary storage to the Enforcer algorithm keys. Finally, the Centralizer produces the selected service Id and passes these keys for layer 2 executions. Thus the proposed layer 1 interacts and impresses vast number of customers who access HOAG at a time by providing services concurrently and fastly.

8.2 CLASSIFIED FILTER SYSTEM

This is the second layer of the proposed HOAG system. It receives the filtered and secured credential information from layer 1. The purpose of designing this layer is to reduce the bulk arrival of requests and perform classification of filtered information. The classification is done using the proposed classifier algorithm called Efficient Trim Down (ETD) Classification. This classifier makes the classification based on the Empirical estimation, Risk analysis and Complexity of the bulk information. Moreover, the filtered data are accuracy matched using these existing classifiers namely J48, Random Tree, Random Forest and AD Tree. Using these Collective Groups (CG) classifiers, the classification accuracies are compared with the proposed ETD classifier. Most of the existing classifiers place the input instance variables based on the decision tree allocation, random fixing and pruning. In decision tree allocation, it has the parent node and the child node. In this work, the highest priority and high value ranges are allocated as parent and lowest priorities are allotted as child. Random fixing allocations are based on the normalized base range from the allotted nodes. In pruning, the filtered node the edge nodes are pruned according to the weight.

Compared to the existing algorithms, the proposed ETD classification technique classifies the instance nodes more effectively using with less complexity. Moreover, Empirical estimation has been carried out to obtain the predicted results and then actual values are compared with the predicted values. Based on the predicted results, the unmatched data are analysed to obtain the risk factors. After estimating risk factors, the Complexity has been measured using the logarithmic method. The exact probability factors are analyzed using the logarithmic and each probability values ranges with each collected data. Finally, the aggregate values are calculated and Efficient Accuracy (EA) is measured.

8.3 FUZZY BASED OFFER AGREEMENT GENERATOR SYSTEM

The third layer presents Fuzzy Based Offer Agreement generation with the use of Decision Manager, User Oriented Database and Expert Advice. This is the final agreement generator for multiple service providers. The agreement generation system reduces customer searching time and generates quality offer agreements to multiple customers. The proposed agreement has been designed with fuzzy logic, where it represents all meta data of the required customers. The fuzzy based agreement was written using the fuzzy oriented language. Three parameters called Cost, Duration and Quality are programmed to the customers.

As per the scheduled way the customers can choose three parameters with 'High', 'Medium' and 'Low' category. These parameters indicate High Cost with Low Duration and High Quality, Low Cost with Medium Duration and Low Quality, High Cost with High Duration and High Quality, Medium Cost with Medium Duration and Medium Quality, High Cost with Medium Duration and Medium Quality, Low Cost with High Duration and Low Quality which are the optional choices that are provided to the customers. These choices are preferably given in the first layer, so that the customers can give their options. The options are directly collected from the first layer to the third layer. In the fuzzy based layer, the agreement was decided by the Decision Manager. The manager finalizes the agreement with the help of Expert Advice, User Requirements and User Oriented Database. The purpose of making such decisions with Decision Manager is to take a correct judgment based on the customer requirements. The major contribution of this layer is that it acts as the end layer of the proposed HOAG system. Moreover, it resolves the choice of services and at the time of agreement generation, multiple customers can receive their required service without time

delay. At the end distribution of several prepared agreements to the customers takes place in which the customers can select their wish and make agreements with the concern providers.

7.4 FUTURE ENHANCEMENTS

The proposed system produces the offer based agreements for multiple customers using the proposed Heterogeneous Offer Agreement Generation (HOAG) with three layer technology. In this work, the offered services provide Enforcer algorithm, Efficient Trim Down classification algorithm and Fuzzy Support - Service Level Agreements. All the proposed algorithms use different factors to manage the data. They are security, classification and generation of fuzzy based agreements. Using this proposed concept, vast number of customers can access their required services within the stipulated period of time.

The major limitation of the proposed HOAG system is the number of users. The proposed system was tested with the limited number of 2500 users with the 4 set of service providers. With the count of users the limited transactions are performed with customers to service providers. The future enhancement of this work focuses on the provision of new features for accessing the best service providers among multiple providers. The proposed HOAG system discusses how the customers can select the offered services. Moreover, the enhanced work provides facilities for choosing the best service providers among a set of groups. The chosen service provider can be used to connect multiple services. By the way of connecting services, the centralized service provider will act as service agents who will it automatically update, delete, create and execute services. Also, the agent based method proposed in this work manipulates the overloaded transactions in service network. Hence, the optimization of transaction load can be considered as a future work.