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FLAHP Methodology to Adopt towards Cloud Computing

H. Seetharama Tantry, Murulidhar N. N., K. Chandrasekaran

***Abstract:** In Cloud Computing Environment (CCE), to connect the relationship with multi-dimensional, novel methodologies are expected to improve the conventional development approach. In general, numerous frameworks become legacy system because today's programs use latest technologies like object-oriented model (OOM) and user requirements change from time to time. To help the legacy system appraisal to satisfy those alterations dependent on CCE highlights, an evaluation technique dependent on the Fuzzy Logic Based Analytic Hierarchy Process (FLAHP) is designed in this study. Fuzzy is a reasonably necessary positioning technique for origination and application when contrasted and for the other multiple criteria decision-making strategies. FLAHP procedure is proposed to conclude the legacy system appraisal from the related viewpoints. FLAHP gives a reasonable and exhaustive system for organizing a choice to communicate and measure components for making the OOM correlations and utilizing complex information about the components depending on the selected criteria. The object-oriented legacy ERP assignment (OO-LERA) framework is the initiated model for the restructuring process. Reengineering legacy system to Modern OO-LERA functionalities incorporates the source code reflection from legacy system. Presented here Legacy Migration Platform Verifier (LMPV) for legacy system transformation. As the name suggests, LMPV checks the OO-LERA indeed for fulfillment of its client's necessities. The FLAHP is applied to a Banking System Management in result and discussion section.*

***Keywords:** Analytic Hierarchy Process, Cloud Computing, Fuzzy Logic, Legacy Migration, Object-Oriented Model.*

I. INTRODUCTION

Programming development has been viewed as regular programming and is the core method for the productive advancement of programming frameworks (software) [1]. When all said and done, programming advancement can be made out of a progression of stages, which viewed as a blend of reverse engineering, well-designed rebuilding, and forward designing. Program appreciation strategies/formal tasks could embrace during the development of reverse engineering.

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* Correspondence Author
H. Seetharama Tantry*, Department of Mathematics & Computational Sciences, National Institute of Technology Karnataka, Surathkal, India. E-mail: hstantry@gmail.com
Murulidhar N.N., PhD., Department of Mathematics & Computational Sciences, National Institute of Technology Karnataka, Surathkal, India. E-mail:murulidharnn@gmail.com
K. Chandrasekaran, PhD., Department of Computer Science and Engineering, National Institute of Technology Karnataka, Surathkal, India. E-mail: kch@nitk.ac.in

During the procedure of well-designed rebuilding, consideration and refactoring are used to symbolize program and explicit language expansion made and chose to help the usage services. Conventional methods can be utilized or improved during the time spent in forward designing. In Cloud Computing Environment (CCE), to connect the relationship with multi-dimensional, novel methodologies are expected to improve the conventional development approach.

For instance, numerous previous software may incorporate a progression of valid prerequisites and models. CCE can be viewed as the multi-dimensional programming standard after the organized and Object-Oriented Model (OOM).

II. RELATED WORK

In reference [2], it is characterized as an assessment based structure for the segment used in software framework. The examined model secured different programming viewpoints, including modularity, transportability, and compatibility. (Demetrios et al. 2009) have acquainted a system by getting familiar with the reusable objects with incorporated activities. They characterized the technique to process the components of a part, and it is figuring out how to the authentic programming atmosphere.

In reference [3], it is investigated the portrayal of reusability and its degree to improve the software framework quality, profitability, and cost factor. The organized programming framework characterized by object oriented programming (OOP) is more reusable than any unstructured or the procedure oriented programming (POP). Different quality measurements and measures are characterized to evaluate the reusability under different comprehensive angles, including ease of use, practicality, and movability.

Owing to the essence of the IT, the criteria of selection procedure depends on Multi-Criteria Decision-Making method [4]. Many researchers accepted the Analytic Hierarchy Process (AHP) to be the analytical simulation tool. When examining an ERP, implementation cost and time are the most crucial causes. Besides, the merchant's assist is a crucial problem [5]. Except for the security value of ERP initiatives, the maintenance and end-user resource costs are also the potential expense for IT concern. The ERP containing three classes of selection characteristics includes assessment factors, software program functions, and vendor elements. Fuzzy Analytic Network Process (ANP), because of the methodology for ERP software program, offered a test study in a firm in the IT zone[6], and in reference [7] projected ANP as a feasible decision-making device for ERP decision. The standards used inside the examination divided into two concerns: Programming Code and merchant factors. The outcomes presented the software to adapt to ANP for this complex selection problem.

Described key ideas of cloud computing are the importance of versatility being the primary support for the business model[8].

Kim et al. exhibited broad research on issues of cloud computing, predominantly accessibility, and security, are generally difficult. Key issues being looked at by these clients are security, coordination, consistency, and execution concerns. These desires are the primary difficulties for cloud specialist organizations.

In reference [9], it is contributed the cloud computing (CC) scientific classification about critical cloud components of distributed computing (DC) and further displayed a relative outcome about many existing cloud administration providers, for example, Amazon.

Projected a gradual movement procedure named as Chicken Little system [10]. It is a bit by bit approach rather than a considerable band technique where a more up-to-date framework must create without any preparation; lastly, more advanced framework is replaced in the final approach. In the Chicken Little technique, the trading of data among legacy system and target application performed utilizing Gateways, while both the framework are operational until the relocation procedure gets over.

Suggested another approach named as butterfly methodology for individual mission-critical applications to minimize the downtime. Parallel running of both legacy system and target applications does not require any gateways because of no need for data consistency provisioning. In reference [11] it included an overview of legacy software migration, including Chicken Little and butterfly approaches in their research.

III. PROPOSED FLAHP TECHNIQUE FOR OOM ASSESSMENT

FLAHP determines the outcomes, set-up objectives, and other issues. It gives an exhaustive and reasonable system for organizing a choice to communicate and measure components for making the OOM correlations and utilizing complex information about the components, depending on the selected criteria. Legacy system appraisal can hold FLAHP to assess and choose the attainability and guarantee on advancing to CCE [12].

A. Fuzzy Logic based Analytic Hierarchy Process (FLAHP)

The FLAHP procedure seen as progressed logical strategy created from the normal Analytic Hierarchy Process (AHP). Notwithstanding the comfort of AHP in dealing with both quantitative and subjective criteria of multi-criteria issues dependent on choice maker's decisions [14], fuzziness and ambiguity are existing issues that may add to the indefinite decision rules in conventional AHP approach [13].

Thus, numerous researchers who have contemplated the FLAHP, which is the expansion of Saaty's hypothesis, have given proof that FLAHP generally indicates progressively adequate portrayal of these sorts of necessary procedures contrasted with the conventional AHP techniques. The property of objective programming is to take care of the cooperative choice-making FLAHP issue [15]. In complex framework, the observations and decisions of people are communicated by semantic and ambiguous examples. In this way, a much-improved portrayal of these semantics created as quantitative information; then this sort of informational collected are refined.

The FLAHP technique is, for the most part, utilized in non-fuzzy choice applications. In this way, the FLAHP strategy does not consider the vulnerability related to the mapping. The FLAHP's abstract judgement, choice, and inclination of decision-makers have an incredible impact on the accomplishment of the technique. The normal AHP [16] still can't reflect the human reasoning style. Evading these dangers on execution, the FLAHP was created to take care of the progressive fuzzy issues. In this investigation, Chang's degree examination on FLAHP planned for a determination issue [17]. Chang's degree examination on FLAHP relies upon the level of conceivable outcomes of every model. As per the reactions on the inquiry structure, the relating triangular fuzzy qualities set for the phonetic factors, and for a specific level on the chain of importance, the pairwise correlation lattice developed. Therefore, the general form of the FLAHP depicted, as shown in Figure 1.

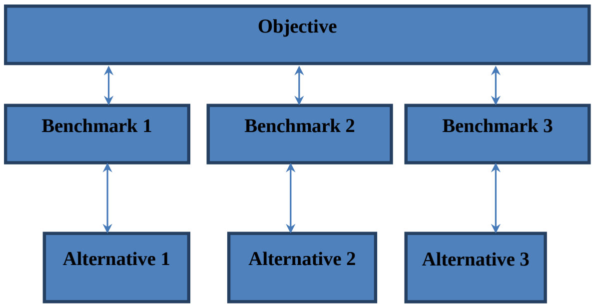

Figure 1. Example of an Order of Benchmarks

The FLAHP algorithm utilizes Chang's degree examination. The strategy is generally more open than other methods [18].

Let $=\{p_1,p_2,\ldots,p_n\}$ be an item set and $Q=\{q_1,q_2,\ldots,q_n\}$ be group of objectives. As indicated by the strategy for Chang's degree examination, each item has been taken, and degree examination for every objective is performed individually [19]. Like this, m degree examination esteems for each article can be gotten with the accompanying signs:

$FM_1\ q_i,\ FM_2\ q_i,\ldots,FM_m\ q_i,\ (i=1,2,\ldots,n)$ where all FMj qi(j=1,2,…,m) are Triangular Fuzzy Number (TFN). Among several Fuzzy Membership Functions (FMF), the TFN is the standard in the business applications. The TFN FM is denoted simply by $(l,\ m,\ u)$. The limits 'l' and 'u,' respectively, represent the minimum and the maximum probable values and 'm' stands for the most promising value that describes a fuzzy event [20]. Each TFN has linear demonstrations on its left and right side such that its FMF (refer Eq.1) defined as the following:

$$\mu(p)=\begin{bmatrix} 0 & p<1 \\ (p-l)/(m-l) & l\le p\le m \\ (u-p)/u-m) & m\le p\le u \\ & p>u \end{bmatrix}\quad\text{..........(1)}$$

Addition and multiplication operators are used in this examination. Characterizing two TFN FM_1 and FM_2 by the triplets as: $FM_1= (l_1, m_1, u_1)$ and $FM_2= (l_2, m_2, u_2)$. The addition and multiplication operations of FM_1 and FM_2 can be expressed as follows:

$FM_1= (l_1, m_1, u_1)$ (l_2, m_2, u_2) (refer Eq.2)

$$FM_1\oplus FM_2:(l_1,m_1,u_1)\oplus(l_2,m_2,u_2)=$$
$$(l_1+l_2,m_1+m_2,u_1+u_2)$$
$$\oplus-Addition$$
$$\otimes-Multiplication$$
$$FM_1\otimes FM_2:(l_1,m_1,u_1)\otimes(l_2,m_2,u_2)$$
$$=(l_1+l_2,m_1+m_2,u_1+u_2),l_1,l_2\ge 0$$

……………………..(2)

B. The investigation steps of FLAHP

Step 1: The components and related sub-factors in the FLAHP structure are made out of an objective. The parts of the system are identified with one another by various kinds of conjunctive bolts (unidirectional and bidirectional), the given relationship types.

Step 2: The sub-factors and nearby loads of the variables are dictated by pair-wise examinations. The variables contrasted in this progression and each other accepting that there is no reliance among them. The fuzzy logic esteem Si regarding the ith basis characterized as (refer Eq.(3),(4),(5),(6))

$$s_i=\sum_{j=1}^{m}FM_{q_i}^{j}\otimes\left[\sum_{i=1}^{n}\sum_{j=1}^{m}FM_{q_j}^{j}\right]^{-1},i=1,2,..n$$

……………………………………………….(3)

$$\sum_{j=1}^{m}FM_{q_i}^{j}=\sum_{j=1}^{m}(l_j^i,m_j^i,u_j^i)=\left[\sum_{j=1}^{m}l_j\right]\left[\sum_{j=1}^{m}m_j\right]\left[\sum_{j=1}^{m}u_j\right]$$

…………………………………………(4)

$$\sum_{i=1}^{n}\sum_{j=1}^{m}FM_{q_i}^{j}=\sum_{i=1}^{n}\left[\sum_{j=1}^{m}l_j,\sum_{j=1}^{m}m_j,\sum_{j=1}^{m}u_j\right)=$$
$$\sum_{i=1}^{n}\sum_{j=1}^{m}n_j\sum_{i=1}^{n}\sum_{j=1}^{m}m_j,\sum_{i=1}^{n}\sum_{j=1}^{m}u_j$$

………………………(5)

$$\left[\sum_{i=1}^{n}\sum_{j=1}^{m}FM_{q_i}^{j}\right]^{-1}=\left(1/\sum_{i=1}^{n}\sum_{j=1}^{m}u_{j,}\right)\left(1/\sum_{i=1}^{n}\sum_{j=1}^{m}m_{j,}\right)\left(1/\sum_{i=1}^{n}\sum_{j=1}^{m}l_{j,}\right)$$

……………………………..(6)

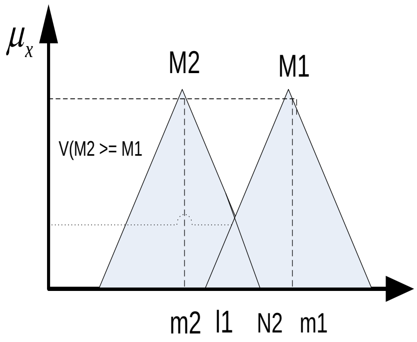

Figure 2. Membership functions of linguistic variables

As $FM_1=(l,m_1,u_1)$ and $FM_2=(l,m_1,u_1)$ are two TFN, the degree of possibility (refer Eq 7) of $FM_2=(l_2,m_2,u_2)\ \ge$ $FM1=(l_1,m_1,u_1)$ defined as in figure 2.

$$V(FM_2\ge FM_2)=\sup_{y\ge x}\left[\min(\mu_{FM_1}(p),\mu_{FM_2}(p)\right]=$$
$$hgt(FM_2\cap FM_2)=\mu_{FM_2}(d)=$$
$$\left\{\begin{matrix} 1 \\ 0 \\ \dfrac{l_1-u_2}{(m-u_2)-(m_1-l_1)} \end{matrix}\right\}$$
$$m_2\ge m_1$$
$$l_1\ge u_2$$

…………(7)

Where *'x'* and *'y'* are the values on the axis of the FMF of each criterion; *'d'* is the uppermost meeting point $\mu_{FM_1} and\, \mu_{FM_2}$. To compare FM1 and FM2: (refer Eq.8) need both the values of $V(FM_2\ge FM_1)$ and $V(FM_1\ge FM_2)$ ………………(8)

Step 3: The degree of probability for a convex fuzzy number are to be greater than *'k'* convex fuzzy numbers: $FM_i(i=1,2,....k)$ is defined by (refer Eq.9)

$$V(FM\ge FM_1,FM_2,.....FM_k)=$$
$$V\left[(FM\ge FM_1)and(FM\ge FM_2)and(FM\ge FM_k\right]=$$
$$\min V(FM\ge FM_i)$$

………(9)

Assume $d'(A_i)=\min V(S_i\ge S_k)$ for k=1,2,3, 4,5,…...,n; k≠ i, then the weight vector is (refer Eq.10)

$$W'=[d'(A_1),d'(A_2),....,d'(A_n)]^T$$

……………………………..(10)

where $A_i(i=1,2,3,4,5,6,.......n)$

Step 4: Normalization are: (refer Eq.(11),(12)

$$W=[d(A_1),d(A_2),.....,d(A_n)]^T$$

…………………(11)

where 'W' is non-fuzzy numbers.

$$W = ({}_{\min}V(S_1 \geq S_j),\ {}_{\min}V(S_1 \geq S_j),\ {}_{\min}V(S_1 \geq S_j),) \quad \text{…………(12)}$$

Step 5: The weights of the factors and sub-factors are selected.

Step 6: The selection for the dissimilar substitutes is selected.

C. Assessment of Proposed Framework for CCE

This part explains the evaluation technique to choose whether the legacy system is significant to port to the CCE development approach with the above representation of the FLAHP procedure. For this recommended FLAHP evaluation, the objective is to choose whether the chosen legacy system LERA can be accessible to develop into a Cloud administration dependent on the proposed methodology of FLAHP. The procedure is based on application system and internal/external conditions. In the meantime, the related criteria is picked up for every sequence.

The criteria made by the current qualities of a LERA appeared in Figure 3, showing the required impact of the Cloud. Cloud features are Cloud platform, Cloud storing, Cloud applications, and Cloud server.

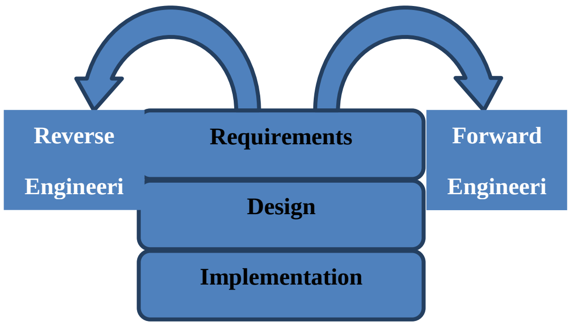

Figure 3. Process of standard Software Reengineering

IV. LEGACY SYSTEM EXTRACTION FOR CLOUD SERVICE

A. Legacy System Investigation

The examination for a preferred LERA is utilized to comprehend the present framework and scheduled decay system used for the reusable LERA resource ID after the deciding stage. It is essential, since legacy system executed by various structure approaches and programming languages; lots of them don't have precise determinations. The received examination isolated into a worldwide investigation and central examination, in this study. The business blueprint of the LERA is utilized to recognize the creating arrangements and unique methodologies of the code by examination. The investigation used as a procedure in which data identified with an framework created is distinguished, fixed, and rearranged to reuse LERA resources for new framework. It can locate the standard and variable slices in a capacity, that can be useful for reuse of them in a similar application area. In light of this examination procedure, some useful business modules recognized to be significant and reusable, that has been deteriorated and caught for new OOM.

B. Proposed Reengineering Model of OO-LERA

The OO-LERA framework is the initiated model for the restructuring process. This methodology is created to force the dynamic program slicing as a technique mainly utilized for rearranging programs by concentrating on chosen parts of semantics. By the usage of a package, this can be utilized to rehost the LERA programs into the new framework. The interpretation of the heritage of an improved framework is called forward designing.

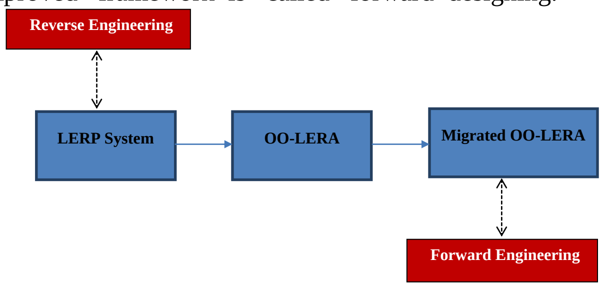

Figure 4. Proposed layout of OO-LERA Migration

The different variables of relocation is considered, and it is essential to modify the LERA to the OO-LERA. It is tied with withholding and broadening the estimation of the heritage speculations through relocation to a new stage of OO-LERA. The procedure is of re-arranging a framework, so, related components are gathered together in a module. Typically a procedure is completed by the framework assessment and rearrangement (refer figure 4).

C. Code Translation Ideology of Automatic Requirement Assessment

LERA won't present any bugs in the moving structure of reengineering, and it is redundant to ensure the LERA movements. Different modules are generally sorted out by the present system, each including a Line of Code (LOC) and sections. Before migrating the source to the target code, we should have a partial understanding of modern programming.

The clarifications for the development of the present systems are routinely challenging to maintenance and development. Code change defines a method of changing over to a modified code with an equivalent code, and make development models and related methods among legacy system and Target System (TS). They are, changing over the legacy system code to a new language through reproducing the new test program. Refine the modules to address variations from the rule, address, errors and link updates. Repeat this method, until the needed degree of migration is achieved.

D. Dynamic Program Slicing Algorithm

1. Input program sliced
2. Assume the slicing criteria (s, v)
   where s = statement line, v = slicing variable
3. Verify 'v' by 's.'
4. If found v = s, go to step 5, Else exit
5. Assign k = v; count = 0; A [] = v
6. For every LOC l

{count = count + 1
    If k == l Then
    { move k

array found[ ] }}
7. line = =0
8. Let converted [ ]=LOC, where st = statement line, cmt = comment , fn = function
9. For each l = A[]
{k = A [line]
If k = st then
{Convert k
Add A [] }
If k = fn then
{Convert k
Add A []}

If k = cmt then
{Add k A [] }
line = line + 1}
10. Display A[]

V. LEGACY MIGRATION PLATFORM VERIFIER (LMPV) TECHNIQUE

The technique which has been put forward, named as software platform verifier, is called Legacy Migration Platform Verifier (LMPV) for legacy system transformation. As the name suggests, LMPV checks the OO-LERA indeed for its client necessity fulfillment. LMPV is a refined and significant strategy for reengineering. It applies a progressive procedure in a reengineering approach and creates an OO-LERA target system, which fulfills the OO-LERA similarity and pre-requisites. It depends on the Meta-programming idea. It is mechanized wherein the manual transformation is likewise accessible as discretionary at the phase of execution of the OO-LERA.

The assembled legacy system that were gotten by troubleshooting procedures, for example, Programme Slicing, experiences a reengineering change procedure and produces an OO-LERA. LMPV strategy is utilized to check and guarantee that target system for its individual and limited task. This strategy happens before the assemblage and execution of OO-LERA after the reengineering procedure. LMPV gives exceptionally simple and easy to understand change systems support in every phase. Moreover, our suggested module suits the various programming languages that would most likely communicates with the system too. In this LMPV, tokenization has been performed. The arrangement of delimiters that defaults to standard whitespace characters might be determined at creation time or on one token premise.

A. LMPV Design

LMPV has worked in capacities that include Libraries, Tokenization, Pattern coordinating, and the unusual size containing the exact mistakes and solutions. After the end of the reengineering process, the resultant framework is embedded into LMPV; then, the OO-LERA acquired. In this LMPV, a flag presented, when the flag is genuine, the outcome is prepared for collecting, and if it was false, then it must be guarantee that the resultant framework contains some genuine errors. When the flag prompts false, then user communication might be required for assessment.

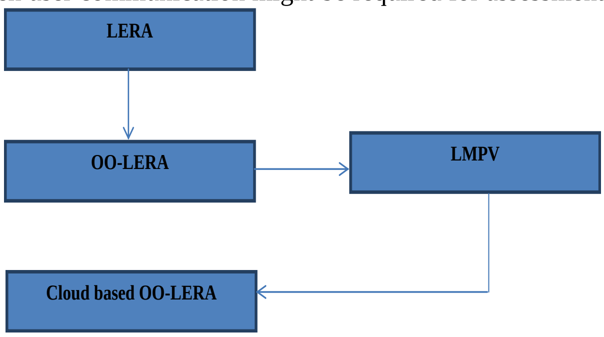

Figure 5. Development flow of OO-LERA with LMPV

For this reason, we build up a window that contains errors and warnings. It is mechanized and delivers practically exact interpretation, and the framework prepared for gathering where the obstruction and incongruence among legacy system and OO-LERA is avoided. The manual gathering is limited in light of this robotized error troubleshooting task — the proposed procedure chart is described in Figure 5.

The modules exhibited in LMPV : (i) Tokenization (ii) Pattern Matching (iii) Debugging. Depending on their creation time, the Tokenization task breaks the code into tokens. It doesn't recognize the legacy and target code; however, the libraries deal with that. Tokenization has direct responsibility. The executed code is coordinated and sent for authentication in pattern matching. To effectively store and recover the executed program, we present a Hash table, which contains a key that actualizes the technique. The module chart of LMPV given in Figure 6.

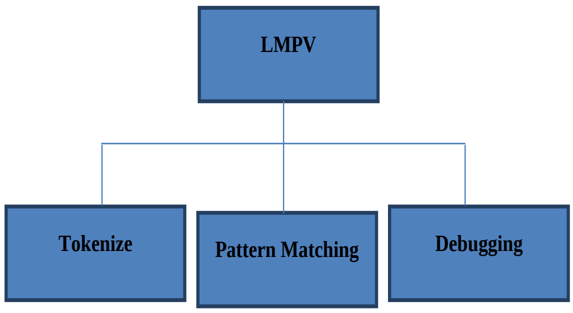

Figure 6. Migration Module of LMPV

Debugging module containing errors and find solutions for the troubleshooting of the legacy system. This computerized investigation points out the fitting mistakes and replaces them with the right ones. In this LMPV, there are a few imperatives; for example, it helps the data dealt with in LMPV content-based. It might take over 15 sec. and less than 60 sec and relies on the assignment and the program input. Although it requires some investment, it decreases the software engineer trouble at the hour of investigation. The LMPV replaces the impulsive errors; likewise, it conveys numerous remedial measures. By considering these elements, the time utilization of the LMPV is insignificant; likewise, it balanced that time in aggregation and investigating the specific OO-LERA.

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VI. RESULT AND DISCUSSIONS

A. Legacy System Analysis - Example of Banking System Management

By investigation whether the legacy system could be chosen to develop with Cloud includes; the proffered methodology has been connected to the LERA arrangement of Banking System Management (BSM). This BSM framework is not only finished in BSM programming, it is also intended to meet the prerequisites of the association, yet it can even now deal with all the data of the bank workers utilizing the documents at the backend. For this sample study, this BSM framework named as a legacy BSM framework, which is expected to be reengineered and advanced into the CCE.

B. The Application of FLAHP in LERA System Selection

The FLAHP model gives main concern loads to the LERA packages, considering the LERA project group's inclinations on different qualities. The proposed model is made out of four various leveled stages: objective, sub-objectives (factors), sub-components, and different LERA framework. These are identified with one another by conjunctive methods. Initially, the general administrator of the organization sorts out the undertaking group incorporating eight ranking directors in various areas. Critical options are dispensed by exhaustive assessment of framework specifics and necessities got from the fundamental objectives. After the fundamental disposal which exposed to spending plan, time, and framework capacities, three practical LERA framework choices are turned out. The sub-elements resolved by the vision and the techniques of the organization. After appointing the loads to each sub-factor, the assessment group thought about all LERA choices. For choosing the best LERA, principle factors are the item factors, framework variables, and the execution elements utilized in the application, clarified in fuzzy sets and fuzzy numbers. Figure 7 (a) (b) (c) demonstrates every single primary factor and sub-factors. The undertaking group contrasted the sub-factors with deference with primary factors in the various leveled approach by using fuzzy triangular numbers in the FLAHP system. A pairwise examination matrix created for the semantic scale utilization. The matrix of matched examinations for choices (A, B, and C) given. They demonstrate the judgment grid (Pairwise correlations) and the weight vector of every matrix.

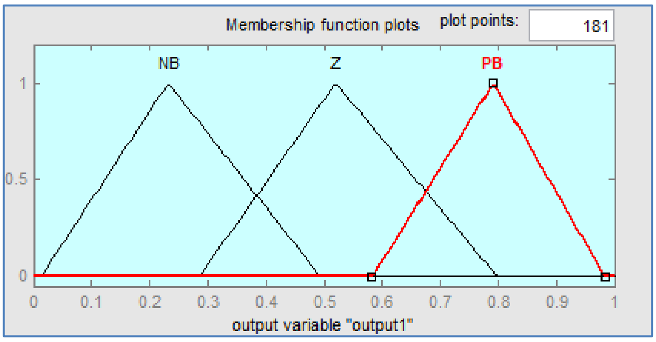

Figure 7. (a) Linguistic scale step 1

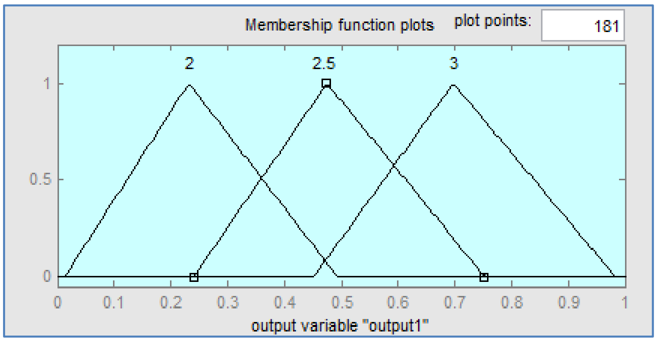

Figure 7. (b) Linguistic scale step 2

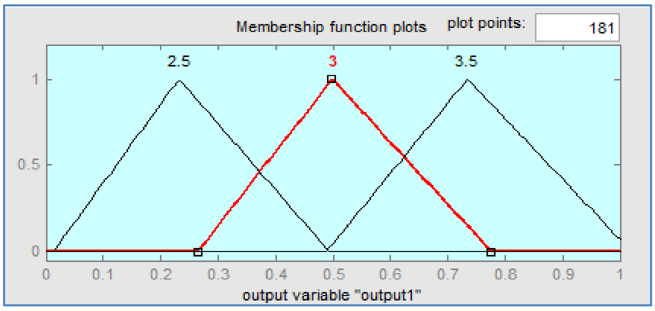

Figure 7. (c) Linguistic scale step 3

As indicated by the ruler's preferences for primary variables, pairwise examination esteems changed into fuzzy triangular numbers, as in figures 8 and 9. After framing the fluffy pair wise examination grid, loads of every single primary factor dictated by the assistance of FLAHP. As indicated by the FLAHP technique, initially, a combination of esteems must be determined.

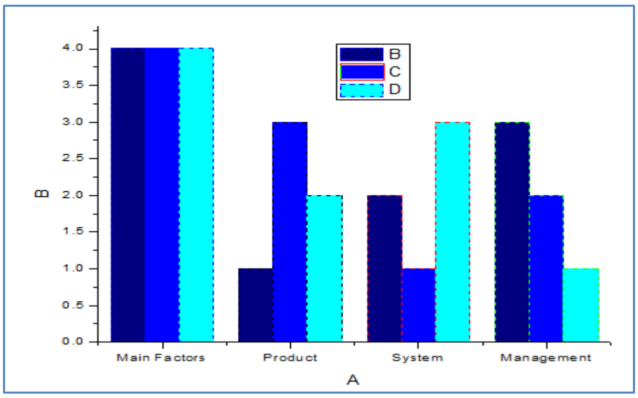

Figure 8.The Fuzzy comparison matrix

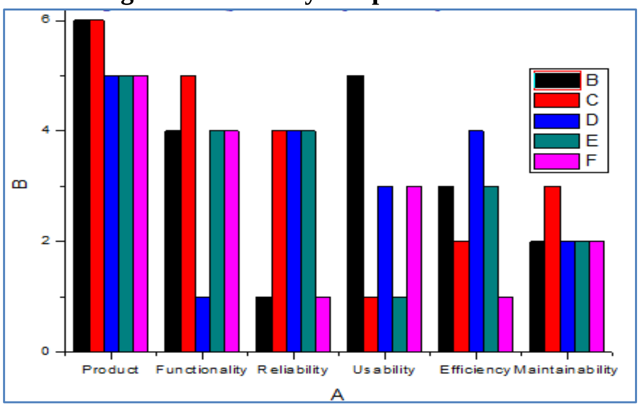

Figure 9. Resultant matrix of legacy system

C. Data Analysis

The sub-factors of the last fuzzy loads are determined, as appeared in Table 1, and demonstrate the last scores for the LERA. As appeared in Table 2, LERA framework B is the current result in the last position. The option with the most extreme weight worth is the best decision in the primary leadership issue.

Table 1. Fuzzy weights of sub-factors

Fuzzy Factors	Fuzzy Weights
Legacy System(LS)-Product	(0.32,0.57,0.91)
LS-Functionality	(0.49,0.67,0.89)
LS-Reliability	(0.42,0.71,0.81)
LS-Usability	(0.52,0.79,0.97)
LS-Efficiency	(0.35,0.55,0.78)
LS-Maintainability	(0.29,0.55,0.71)

The decisions are genuinely secure in positioning the qualities. For valuation, the consistency file of every decision maker's combined correlation matrix should be less than the threshold value of 0.1. From Table 2, the heaviness of LERA merchant elective B is 0.6182, and the loads for LERA seller options A and C are 0.2169 and 0.07918 separately. As per the FLAHP strategy, the best LERA merchant option is B. Along these lines, the task group concurs that framework B is the most reasonable choice for Company.

Table 2. The ranking of the fuzzy correctness

Substi-tutions	Fuzzy Load	Non-Fuzzy Load	Conclu-ding Level
A	(0.1563,0.2103,0.3681)	0.2169	II
B	(0.5014,0.6371,0.8214)	0.6182	I
C	(0.0512,0.07912,0.1352)	0.07918	III

The most proper LERA framework is B. In this manner, the advisory group can be agreeable in prescribing elective B as the most flexible LERA framework for the determination project for this organization. The purpose behind picking the mix of AHP and fuzzy depends on this choice demonstrating techniques, qualities and reasonableness to the present choice circumstance. The particular reason for joining of FLAHP in this examination portrayed as pursues:

1. Most importantly, it is an out positioning technique reasonable for positioning the options among mismatched criteria.
2. Fuzzy is a reasonably necessary positioning technique for origination and application when contrasted and the other multiple criteria decision-making strategies.
3. The qualities determined by FLAHP and it is observed that B is the highest priority than the other two objectives dependent on the BSM development as indicated by the three criteria. B elements of the LERA framework are as yet significant to develop in the CCE. Simultaneously, the examination results additionally demonstrate that a few pieces of the LERA framework are reusable, and the reimplementation coordinated in CCE.

VII. CONCLUSION

Modernization of Legacy software system can be carried out using various methodologies like reverse engineering, rebuilding, forward designing, re-architecturing, etc. Some times single methodology will be followed or a blend of methodologies will be used for better clarity. In Cloud Computing Environment (CCE) to connect the relationship with multi-dimensional, novel methodologies are expected to improve the conventional advancement approach. Initiated the OO-LERA framework model for restructuring process. The FLAHP procedure seen as a progressed logical strategy created from the normal AHP. The technique which has been put forward, named as software platform verifier, is called Legacy Migration Platform Verifier (LMPV) for legacy system transformation. Finally, the proffered methodology has been connected to the LERA arrangement of Banking System Management (BSM) as used.

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AUTHORS PROFILE

H. Seetharama Tantry is pursuing his Ph.D. in Computer Science from National Institute of Technology Karnataka, Surathkal. He has received his Masters degree, MCA from Indira Gandhi National Open University, New Delhi. He has more than 20 years of professional experience in software development dealing with Legacy Application Softwares. His area of interest are Database Management System, Software Engineering, Data Mining, Natural Language Processing and Machine Learning. He has published few papers in International journals.

Dr. Murulidhar N. N., obtained his Ph. D. in Reliability Engineering from IIT, Bombay, India. Presently, he is a Professor in the Department of Mathematical and Computational Sciences, NITK, Surathkal. He has attended several national and international conferences and has published research articles in various national and international journals. His areas of interest are reliability engineering, software reliability, stochastic analysis and operations research. He has reviewed books on Stochastic Processes, Statistics published by McGraw-Hill, Elsevier, Wiley etc. Prof. Murulidhar is a life member of ISPS, RMS, ISTE.

K. Chandrasekaran PhD., presently he is a Professor (HAG) in the Department of Computer Science and Engineering, National Institute of Technology Karnataka (NITK), Surathkal. He has 32 years of Professional Experience in the Department. His Specialization includes Software Engineering, Cloud and Service Computing, Internet of Things, Cyber Security, Machine Learning, Data and Knowledge Engineering and Enterprise Computing and Informatics. He Served as Member of Editorial Board - IEEE TRANSACTIONS ON CLOUD COMPUTING, USA, Member of STC - IEEE Cloud Computing, USA, Member of Technical Group of ISO-BIS (Govt. of India) for Standards in Cloud Computing / IoT / Security. He is a Editorial-Technical Member in OJBD, IJCNDS (Inderscience), IJTMCC, IJIP and many more. He Authored a book on "Essentials of Cloud Computing" (2015) published by Tailor and Francis USA. He Authored more than 300 papers / articles in reputed journals (SCI/SCOPUS and other indexing) and peer reviewed international events including flagship conferences. He is a Senior Member of IEEE, Senior Member of ACM, Life Member of CSI (India) and ISTE (India)