

A Fuzzy Logic Based System for Secure Scrum



Nikhath Parveen , Arpita Roy, Yagna srilatha, Chaitanya, Hemanth kumar

Abstract: Software is a basic system that acts as a major key part in general functioning system like securing the need of performance and scope of the system. Here the security is given to unauthorized user as unauthorized client that casually gets the change or modification within the system by effecting the efficiency and functionality of the system. So in order to overcome this issue new improved software is taken that improves the system performance and security. the paper represents a new fuzzy logic based system for handling secured attribute and assessment in software. Based on this reason we propose PCI and bugs dataset for fuzzy inference system can be used. This secured system model helps software engineers to select secured and safety software for the performance and ambiguity.

Keywords : Fuzzy Logic Based System, Secured Software, Performance and Ambiguity.

I. INTRODUCTION

CBSE will be handling component of a structure that achieves a key obligation by the purpose of the system. Based software engineering (CBSE) decreases the improvement time for new system. S accessible for reprocess is previously tested, experiment and debugged. Another framework created utilizing existing s turns out to a chance to be less expensive also practically pre-tested also debugged. Most extreme software reuse will be proposed over a significant number cases, as reuse recoveries generally speaking advancement run through furthermore Additionally transmits error free code, officially utilized and more verified over numerous system [15, 18]. Individual software may be a programming suited that gives built purpose. These different software functions are joined dependent on the guideline of CBSE. Numerous such programming frameworks are organized and sorted out from an assortment of various s. The s ought to be unequivocally obvious from all points of view by improvement of the software system. This might be supported by another system the present work will be improved further

more. Because of the expanded interest of the improvement of enormous and complex software frameworks, CBSE is turning out to be increasingly normal, to spare period, price of advancement, to utilize effectively verified code. Revision displays that such programming improvement is performed for almost 50% of the all-out created software system [17]. While picking organization of s for another framework it is important to think about and framework evaluation prerequisites. Alongside that security is probably the most elevated commitment of system. Software security will be protected by the system from unapproved get Also transform. At those purpose when product may be wanted from separate s, it might experience raised security dangers of the needed programming [10]. These dangers influence the convenience Also effectiveness of the framework. The principal worry of Security is the way to assemble a protected based system. The identification of security issues, the designers need to actualize highlights to maintain a strategic distance from these potential security threats. In Scrum[21], each colleague is liable for the responsible of his answer (Definition of Done). Be that as it may, there is countless selections of philosophies to check completeness. This implies a member can utilize any strategy for confirmation (same similarly as with typical tests, Scrum doesn't advise the engineer how to test). Secure Scrum encourages engineers to recognize proper security related testing which implies significant security parts for software project.

II. LITERATURE SURVEY

Related examine and security processologies would exhibited and more utilized toward analysts. Khan, han [9] separate those security aspects furthermore suitability for and additional, For programming qualities representational also examination their technique includes rationale customizing.

Gandotra et al. [5] introduced a safe software system (SSS) to growing that safety of structure utilizing fuzzy[23] logic. These strategic ideas enhance the advance in mid phase between failed and safe state to security objective. Their suggested framework comprises from consists of separate stages in elicitation of security requirements, categorization, furthermore ordering, planning about dangers under safety necessities, and checking safety level.

Ghosh, mcgraw [6] characterized a processlogy to documentation on exam safety possessions about black and white box testing strategies need aid utilized to test and confirm the safety from software product. Liao et al. [12] created a process on gather distinctive measurable majority of the data. They recommended fuzzy logic and more improved system to inspect PC wrongdoing done system and the process makes advanced proofs naturally.

Manuscript published on November 30, 2019.

* Correspondence Author

Nikhath Parveen*, Department of Computer Science and Engineering, Koneru Lakshmaiah Education and Foundation, Guntur, India.

Arpita Roy, Department of Computer Science and Engineering, Koneru Lakshmaiah Education and Foundation, Guntur, India.

Yagna srilatha, Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Guntur, India.

Chaitanya, Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Guntur, India.

Hemanth, Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Guntur, India.

© The Authors. Published by Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP). This is an [open access](https://creativecommons.org/licenses/by-nc-nd/4.0/) article under the CC-BY-NC-ND license <http://creativecommons.org/licenses/by-nc-nd/4.0/>

A Fuzzy Logic Based System for Secure Scrum

Those test comes about of the recommended strategy[22] with other routines would also compared and more show that those framework classifies the greater part strike and give justifiable majority of the data to measurable experts.

Engina et al. [3] suggested fuzzy process as attribute control Charts (ACC) and more may be fathomed toward Greedy algorithm (GAs). Two primary parameters, that would test span furthermore acknowledgement number, need aid decided for each stage by those GA. That process will be connected with respect to engine valve developed firm. Siadat et al. [19] recommended that grid safety change toward new administration framework[25]. New Web-domain expansion will grid framework also selecting benefits supplier would those preferences of the recommended approach.

Khan et al. [8] ordered those properties from security under functional and non-functional security. Utilitarian security will be external security of s same time non-functional security may be settled for purpose. Lee et al. [11] utilized determination process also depicted some definitions for. The operators characterized are, version, practical requirements, non-functional requirements, and coordinating. Z plan may be utilized for that determination.

Cai et al. [2] recommended quality certification for both and more framework of the look at may be used to survey genuine. Moriconi et al. [14] suggest a system done which different representations about product construction modeling furthermore needed security toward structural engineering level need aid depicted. That strategy is exhibited for the help for open conveyance transaction transforming reference structural engineering.

III. IMPLEMENTATION

A. Working of secure scrum

This system model represented as shown the begin figure contains various fuzzy steps and deposited in data base.

This system clearly expounds those steps incorporate in the designing of enrolment works and the measures from this member functions. Those folioing impacts of the model would broke down and a decision will be aggravated then afterward the decisive results. In the final one development support of the most secure ought to will make made starting with the fit position and the majority secure is passed on the system design.

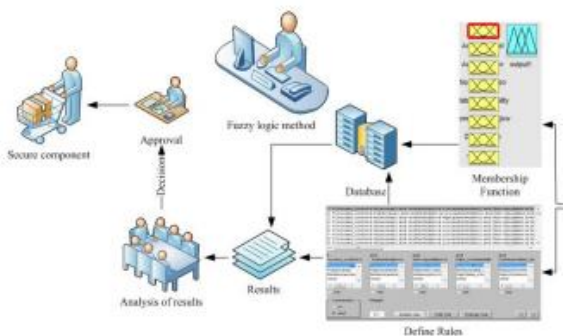


Figure.1: Fuzzy Logic based DSS for Security Evaluation.[25]

B. Fuzzy secure system and its Implementation:

Those recommended model may be designed utilizing the fuzzy tool box. It comprises for 5 essential GUI instruments

with FIS editor, membership work editor, principle editor, principle viewer, and more surface viewer. Those suggested model utilizing the fuzzy inference framework.

Step 1. If (CC > 50) and (Security is Min) and then (Output is min_Secure) (0.1)

Step 2. If (CC < 50) and (Output is High_Secure) (1)

Step 3. If (Assignee is medium(count)) and then (Output 1 is average- Secure)(0.5)

Step 4. If (Assignee is) then (output 1 is very_Min_Secure)(0.8)

Rules: Depend on the designed steps and models the security S can be evaluated by Fuzzy logic:

Name= "Security model"

Num put in= "8"

Num gets= "1"

And Process= "low"

Process= "high"

Imp Process= "low"

Agg Process= "high"

Defuzz process= "Centroid"

Information sources are offered by area master conclusion in direction interface of the planned model for instance

B=read f is ('FIS form')

B= name: 'FIS form'

Type: 'mamdani' and process: 'min' or process: 'max'

Defuzz process: 'Centroid' imp process: 'min' agg process: 'max'

IV. RESULTS

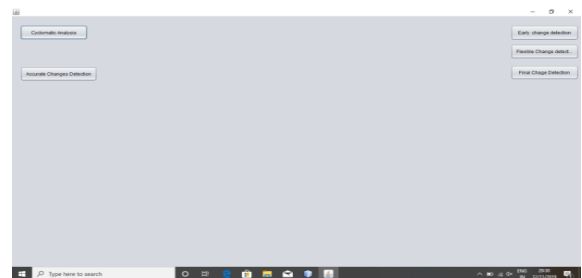


Figure.2:FIS output for secure scrum

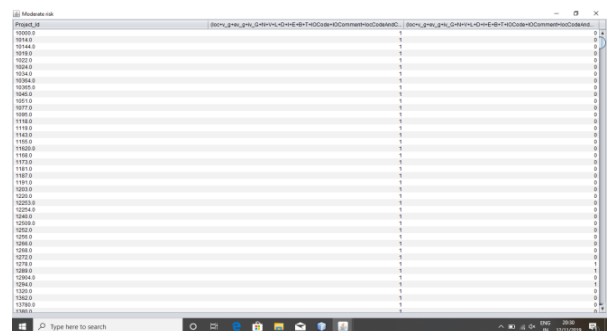


Figure.3:Cyclomatic Analysis-Moderate Risk

Here the 1st column represents the risk analysis, where 0's correspond to min risk and 1's correspond to high risk and the 2nd column correspond to mean score

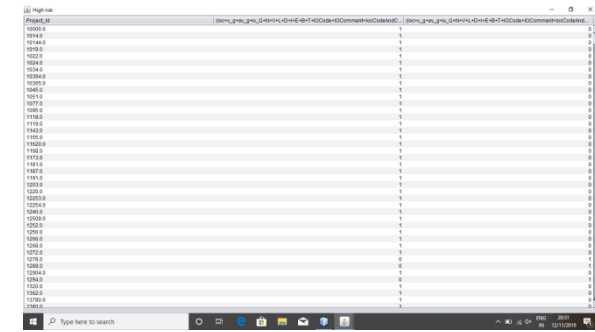


Figure.4:Cyclomatic Analysis-High Risk

Here the 1st column represents the risk analysis, where 0's correspond to min risk and 1's correspond to max risk and the 2nd column represents mean score.

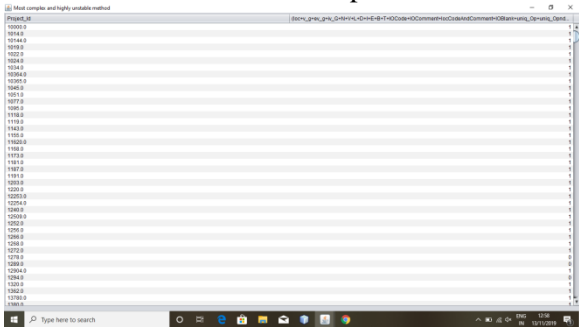


Figure.5:Most Complex and Highly Unstable

Process: All the 0's has min risk and 1's has high risk.

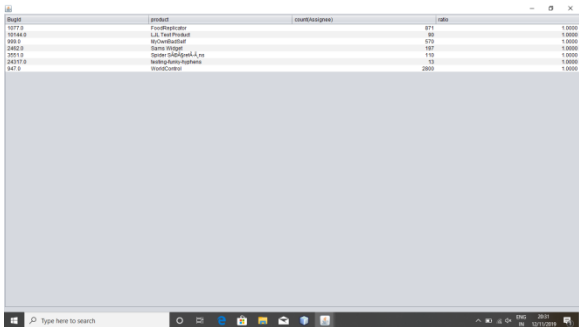


Figure.6:Accurate Change Detection:

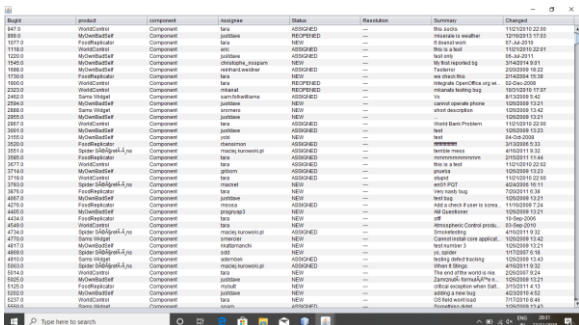


Figure.7:Accurate Change Detection:

According to results, from the dataset after applying the logic these 5 records were identified, these projects with their respective bug id's are having the more count because they are changing the project repeatedly more number of times.

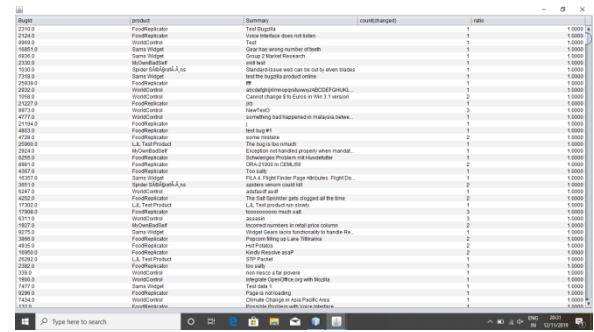


Figure.8:Early Change Detection:

Here when particular project changing early more number of times. 1 means normal, when it increases to more than 1 we have to consider those id's as risk.

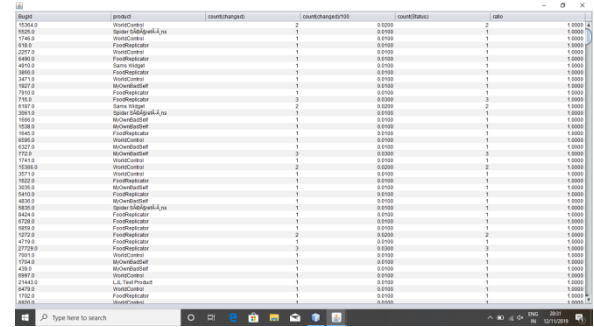


Figure.9:Flexible Change Detection

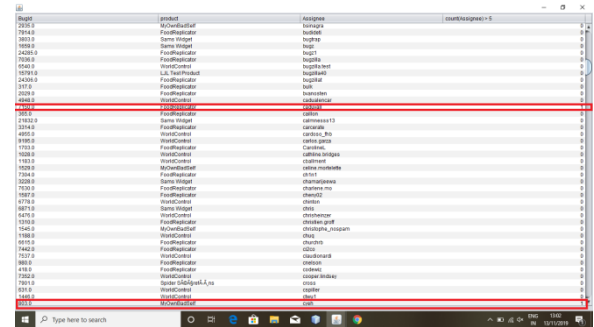


Figure.10: Change Detection

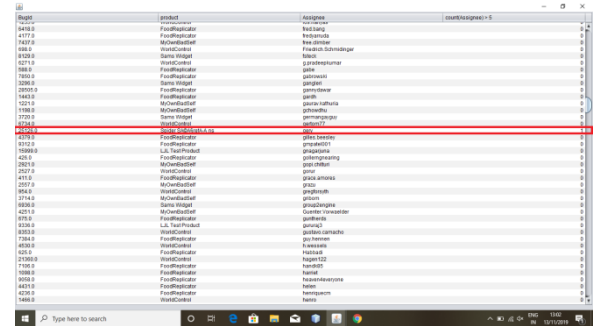


Figure.11:Change Detection:

Here according to the results, all the 0's represents min risk and all the 1's represents high risk. Hence, The maximum number of modifications will lead to High Risk which are unsecured.

V. CONCLUSION

The present system in this paper is expected to assess safety of programming s. Safety is a significant feature of to be measured while choosing programming as established software building. Here is a more collection of programming that can be accessible beforehand ,

However the huge popular of them fizzle or don't keep up the palatable level working because of the absence of accessibility of security subtleties. This paper shows that the proposed system, which depends on security properties, is valuable in circumstances of vulnerability and uncertainty, consequently choosing the most effective secured software system.

REFERENCES

1. Engina O., et al.,2008,"A fuzzy Approach to Define Sample Size for Attributes Control Chart in Multistage Processes: An Application in Engine Valve Manufacturing Process," Applied Soft Computing,8, 4, pp;1654-1663.
2. Fredrick T.,et al.,2015, "The Fuzzy Logic Based ECA Step Processing for XML Databases," The International Arab Journal of Information Technology, vol. 12, no. 6A, pp; 635-641,.
3. Gandotra V., et al.,2010, "A Step Towards Secure Software System using Fuzzy logic," conference, pp;427-432,.
4. Jeon G., et al.,2012, "Application for Deinterlacing Process using Edge Direction Classification and Fuzzy Inference System,"Multimedia Tools and Applications,59,1, pp;149-168.
5. Liao N., et al.,2009, "Network Forensics based on Fuzzy Logic and Expert System," 32,17, pp;1881-1892.
6. Nazir S., et al.,2012,"A Novel Fuzzy Logic Based Software Component Selection Modeling," Conference, Suwon, pp;1-6.
7. Nazir S., et al.,2015, "A Novel Steps Based Approach for Estimating Software Birthmark," Journal, pp;1-8.
8. Rawashdeh A., et al.,2006"A New Software Quality Model for Evaluating COTS Components," Journal,2, 4, pp. 373-381.
9. Sandhu P., et al.,2006, "A neuro-fuzzy based Software Reusability Evaluation System with Optimized Step Selection," Conference, pp; 664-669.
10. N Parveen et al. 2015, "Model to Quantify Confidentiality at Requirement Phase",ACM International Conference on Advanced Research In Computer Science Engineering & Technology (ACM ICARCSET).
11. Siadat S., et al.,2009, "Proposed Platform for Improving Grid Security by Trust Management System," 6,1, pp;143-148.
12. Sabnis S., et al.,2006,"Challenges of Securing an Enterprise and Meeting Regulatory Mandates," Conference, New Delhi, pp;1-6.
13. Jammalamadaka, K., et al.,2016, "Insprint automation in agile scrum-a case study," Journal, 9(24), 261-276.
14. Bharat., et al.,2016. "Fuzzy oriented risk assessment in enterprise information systems,"Journal, 89(1), 218-223.
15. Vasavi, C., et al;2016," Generalized differentiability and integrability for fuzzy set-valued functions on time scales", 20(3), 1093-1104.
16. Shahabuddin, S. M., et al.,2017," Impact of lean software development into agile process model with integration testing prior to unit testing," Journal, 95(22), 6163-6175. .
17. Navyasri., et al.,2017," Estimating software maintenance by interpreting user feedback", Journal, 9, 692-701.
18. Prasanth, Y., et al.,2017,"Analysis and implementation of ensemble feature selection to improve accuracy of software defect detection model",9(18 Special Issue), 601-613.
19. Chaitanya Krishna, B., et al.,2018,"Analysing software quality using CMMI-2 with agile-scrum framework", Journal, 7(1.1 Special Issue 1), 290-293.
20. Malleswari, D., et al.,2018,"Analysis on software project planning and control using case tools", Journal, 7(2.32 Special Issue 32), 158-160.
21. Krishna Mohan, G., et al.,2018,"Assessment and analysis of software reliability using machine learning techniques", Journa,7(2.32 Special Issue 32), 201-205.
22. PhaniSheetal, A., et al.,2018,"Software metric evaluation on cloud based applications",Journal, 7(1.5 Special Issue 5), 13-18.
23. Khan, A., et al.,2019,"Mapping bug reports to relevant developers", Journal, 8(5), 683-689.

24. Raveendra, K., et al.,2019,"A novel logo-based document retrieval using hybrid fuzzy based CSA", Journal, 8(5), 255-258.
25. https://www.researchgate.net/figure/Enhanced-Scrum-process-with-additional-SB-and-SM_fig2_332496508 [accessed 15 Nov, 2019]

AUTHORS PROFILE



Dr. Nikhat Parveen*, is an Associate Professor in Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Guntur, A.P. She has more than 10 years of teaching experience and 6 years of research experience. Her area of interest is Security Software, Security Testing Software Engineering, and Requirement Engineering. She is currently working in the area of Soft Computing and Big Data Security Optimization. She has also published & presented papers in refereed journals and conferences. She is a member of ACM, CSI and IAENG.



Ms. Arpita Roy is an Assistant Professor in Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Guntur, A.P. She has 02 years of teaching experience and pursuing PhD. She has completed her Mtech from Maulana Abdul Kalam Azad University, Durgapur, W.B. and Btech from West Bengal University of Technology, W.B. Her area of interest is Artificial Intelligence, Machine Learning. She is currently working in the area of Soft Computing. She has also published & presented papers in refereed journals and conferences. She is a member of CSI and IAENG



P.Yagna Srilatha, Student of Computer Science and Engineering in Koneru Lakshmaiah Education Foundation(Deemed to be University),Guntur, Andhra Pradesh, India.



Ch.Chaitanya, Student of Computer Science and Engineering in Koneru Lakshmaiah Education Foundation(Deemed to be University),Guntur, Andhra Pradesh, India



E.Hemanth Kumar, Student of Computer Science and Engineering in Koneru Lakshmaiah Education Foundation(Deemed to be University),Guntur, Andhra Pradesh, India