iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 8 **Issue:** VII **Month of publication:** July 2020

DOI: http://doi.org/10.22214/ijraset.2020.7037

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 8 Issue VII July 2020- Available at www.ijraset.com

Software Testing - An Important Phase of Software Development Life Cycle

Vijayashree Shetty[1], Prof Swetha S[2], Dr. C Bindu Ashwini[3]
[1]*Student,* [2,3]*Assistant Professor, Department of Information Science and Engineering, R V College of Engineering, Bengaluru*

Abstract: ***Errors may happen at any phase of Software Development. These blunders, here and there alluded to as bugs, can cause incredible misfortunes as far as both time and cash if not distinguished and expelled as ahead of schedule as could reasonably be expected. Software Testing, important phase of Software Development Life Cycle highlights these errors before the release of products. These errors are then solved before the delivery of the product to customer***
The approach suggests that each phase of the item improvement cycle is under a thorough check of value engineers. Besides, quality support is given long after the item is conveyed. The usage of this procedure in assembling or programming improvement forms guarantees the adequacy of the yield from the earliest starting point, limits deserts and diminishes possible misfortunes. At the end of the day, quality designing is the investigation, the board, advancement and upkeep of various frameworks as per elevated requirements.
Keywords: Quality Engineering, Validation, Verfification, Software development, SDLC, testing

I. INTRODUCTION

Quality Engineering is a procedure through which quality evaluated and improved all through the lifecycle of the product. Quality Engineering goes past quality control, quality affirmation and testing. It can likewise be expressed as the way toward approving and checking that a product program or application or item meets the business and specialized necessities, fills in true to form and can be actualized with similar qualities [1], as it were trying methods contrasting the genuine result and anticipated result. It is also important to identify when and what kind of testing can be automated ,so that manual effort can be saved for other tasks[3] .

II. QUALITY ENGINEERS AND THEIR RESPONSIBILITY

A quality engineer is answerable for ensuring that engineering and manufacturing operations are performed effectively utilizing the correct apparatuses, materials and procedures. A significant piece of the activity includes planning the organization's quality gauges and testing forms against those standards. In many associations, the QE additionally watches that representatives are prepared to the correct quality norm and that all security prerequisites are met all through the creation procedure. Different companies have different designations for those who test the software such as Software Tester, Software Quality Assurance Engineer, and QA Analyst etc. [4] In the case of anything turns out badly, it's the quality specialist's business to carefully record the issue and work with different architects to discover an answer. These checks are fundamental not exclusively to meet customer prerequisites yet in addition to fulfill lawful requests in many ventures Quality specialists work in assembling conditions and research centers, where they test procedures and screen quality measures for a wide range of fabricated items including electronic segments, food, materials, engine vehicles and PCs. Workplaces fluctuate by industry and foundation. Some QEs work moves and are on their feet the entire day while others are work area based and go through their day perusing printouts of information. Quality architects commonly are a piece of a bigger group entrusted with making quality enhancements over all parts of creation. Senior QEs may oversee groups of junior designers and have obligation over numerous phases of a procedure.

III. SOFWARE QUALITY FACTORS

Following are some of the software quality factors which can be considered while testing

1) *Efficiency:* It is a factor identifying with all issues in the execution of programming such as memory prerequisite response time and rate of output.
2) *Extensibility:* Ability to extend system by adding new modules, without any harm to existing system
3) *Security:* How secure it is with respect to data and authorization
4) *Correctness:* Ability to produce correct output
5) *Testability:* Testability is the exertion required to test to guarantee that the framework or a module plays out its proposed work.
6) *Portability:* It is the exertion required to move the product from one system configuration then onto other.

©IJRASET: All Rights are Reserved

7) *Maintainability:* Efforts required for maintenance
8) *Integrity:* This factors deals with aspects related to security of system
9) *Usability:* Efforts that might be needed in future to train new staff
10) *Interoperability:* How easy it is to interface with other software , frameworks

IV. SOFTWARE VALIDATION AND VERIFICATION

The Verification which is done at the starting of development procedures which performs evaluations on code and various documents to make sure that product is delivering all designed functionalities.[2]
Whereas Validation determines if the designed product meets company standard and goals and also performs all the functionalities which was intended. It is carried out in the end of software development life cycle. [5]

V. QUALITY ASSURANCE AND QUALITY CONTROL

The fundamental objective of QA is to compose immaculate turn of events and to shield the last item from potential imperfections. It's occasionally considered the "zero imperfection" approach. It takes a lot of time to train staff to perform QA tests.
As opposed to QA that worries the procedure of creation, QC manages the yield. It is a receptive method that decides if a created item meets the client's desires and complies with the characterized norms. In this way, QC is a last checkpoint before the conveyance.

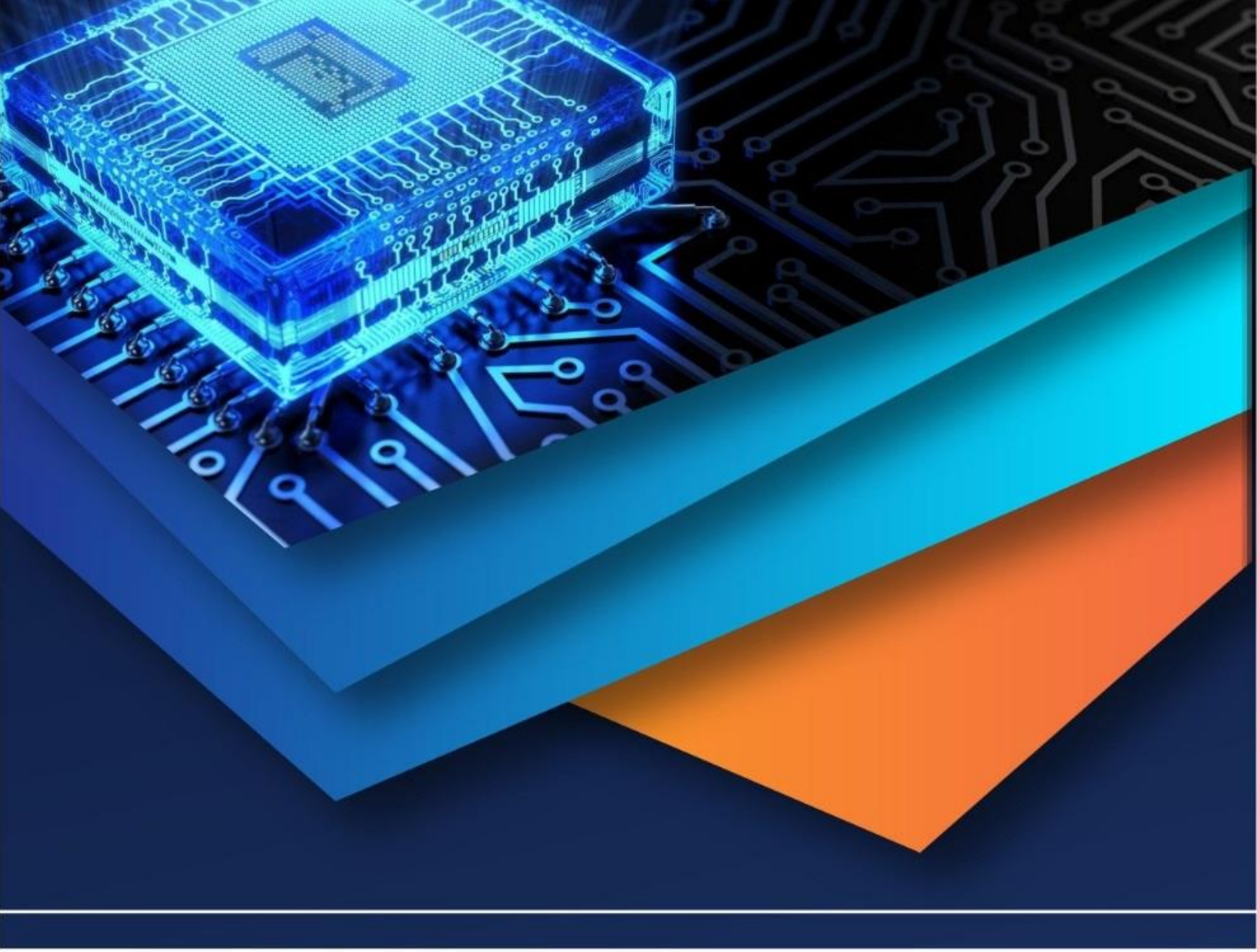
VI. CONCLUSION

This paper gives a brief introduction about Software Testing, Quality Engineering. It also describes various Software Quality factors which plays important role while judging quality of the product. It also in short gives a difference between Validation and Verification of product which is one of important part while testing. Finally it talks about two major aspects of testing that is quality assurance and quality control.

REFERENCES

[1] Myers, Glenford J., Corey Sandler, and Tom Badgett. The art of software testing. John Wiley & Sons, 2011.
[2] Kung, David, and Hong Zhu. "Software verification and validation." Wiley Encyclopedia of Computer Science and Engineering (2008).
[3] Ammann, Paul, and Jeff Offutt. Introduction to software testing. Cambridge University Press, 2008.
[4] Garousi, V, & Mantyla, M. V. “When and what to automate in software testing? A multi-vocal literature review”. Information and Software Technology. (2016)
[5] Akalanka Mailewa and Jayantha Herath Susantha Herath St. Cloud State University “A Survey of Effective and Efficient Software Testing”

©IJRASET: All Rights are Reserved



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)