

Factors to Consider in Developing a Secure and High-Performance Softwares

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Abstract

A huge number of business companies all around the globe has been faced critical problems in their entire strategic and operational task due to poor performance of the implemented technological software within their working areas throughout the globe. It has been affecting critically on the entire growth and performance in competitive market surroundings. On the other hand, the issues associated with the security concerns within software also increase the situations of cyber crisis and data redundancy issues. Thus it is mostly essential to identify the factors which have to be considered in time of developing software in business market periphery. The study has been performed through taking an inductive approach and cross sectional design within the entire study. Qualitative data and information through secondary data collection method have been chosen in order to ensure qualitative and meet the textual demand of the topic within the study. A proper implication of data encryption, frequent security updates, proper bug testing and reduce third party dependency mostly helps to improve security features within software. The overall impact of high performing and secure software's on the performance of a business company has also discussed within the entire study.

Keywords

Business, performance, security, software.

INTRODUCTION

A number of modernized and innovative software's has been launched in recent day's business surroundings which provide a key assistance to an enterprise to manage their overall operational and strategic tasks effectively within their business. The poor performance of certain software implicated within a company's working sectors most negatively impacted on the execution activities of an enterprise and the economic growth of a company in worldwide business market periphery. Business organizations in the global market periphery have faced the most critical financial loss due to the poor performance of the technological equipment and software's within the working areas of a company in the global periphery [1]. Thus, it becomes essential to maintain a desired performance of the software's and enhance the quality of the technological applications to ensure an undisrupted run of the operational and strategic tasks. It provides the assistance to ensure a higher business growth and desired advantages through availing software's with less operational and performance error. Hence, software developers need to keep their focus on improving the performance of the software's in order to ensure value for money for the software in business surroundings.

The issues associated with security measures also have been increasing in recent days on the business periphery. The poor security system and various issues in the area of data redundancy also have been causing a serious disruption in business and reducing the performance quality of the companies in global surroundings. The issue of data redundancy while availing software assistance most

negatively impacted on the brand reputation of the company as well as reduce the brand value of the company all around the globe [2]. A number of business institutions in the worldwide market periphery have been facing critical issues in security factors of the software's within their working sites. It has been influenced most negatively on the performance rate of the company in the global periphery. Thus, it becomes highly essential for the software developers to ensure maintaining the security concerns in time of developing software equipment. Hence, it becomes critically essential to have a proper idea about the factors which are involved with the performance and security of the software's in time of development. The study has been going to analyze factors to consider in developing a secure and performance software's.

The overall security and performance concerns which have to be maintained in time of development of the software will be discussed within the entire study with a detailed process. It will provide a key assistance to the software developers to perform the entire study of analyzing the factors which have to be kept in concentration in time of developing software's and enhance their security and performance. It will most significantly help to improve the overall quality of the software's and increase the demand of the software in the global market. The proper implication of performance and security factors within the software mostly helps developers to ensure higher sales rate and economic earnings in business periphery and helps to achieve the futuristic objectives of the company all round the globe.

MATERIALS AND METHODS

Introduction

It is highly necessary to select the entire methods and materials which are going to be used while performing a certain study. It provides an out and out planning of the activities and operations which have to be performed while performing a certain study. The entire layout of the tasks and methods which are going to be followed within a study is described in the declaration of materials and methods within a discussion. It helps to perform the entire study with a systematic process and helps to obtain a suitable output result. The entire materials and methods which are used in performing the study have been discussed within this particular area.

Research approach

The entire study has kept its focus on analyzing performance and security factors which are associated with the quality of software. A number of different data and information which are mostly relevant to the topic needs to be analyzed within the entire study to gain an absolute idea about the factors to consider in developing secure and performance software's. An inductive approach while performing a study helps to gather various topic oriented data and helps to obtain suitable output results [3]. Hence, an inductive approach will be used while performing the entire study effectively.

Research Design

The entire blueprint of performing a study on a certain topic has been suggested within a research design though it is one of the key methods or material used while performing a certain study. The selection of a proper design helps to enhance the quality of a study and assist to find the answers of the questions involved within a study. This particular study needs to perform while keeping its concentration on the real time observation. Cross sectional design is actually a type of observational design [4]. Thus, a cross sectional design has been taken while performing the entire study in an efficient manner.

Type of data

In order to evaluate the factors to consider in developing secure and performance software's, it is highly essential to gather a number of non-numeric and textual data within the study to have a superior idea on the topic. It provides a key assistant to gain proper insight about factors which have been considered in time of developing secure and performance software's. The qualitative data are the textual and non-numeric data which helps to perform a study effectively upon a certain topic which needs to be analyzed through textual data and information [5]. Hence, qualitative types of data have been chosen in order to perform this particular study.

Data collection method

The entire study is going to gather a number of qualitative data and information in order to perform the study effectively and bring forth suitable output results. A secondary data collection process helps to collect numerous data and information from various authentic online sources and peer reviewed journals []. Hence, a secondary data collection method has been taken in order to perform the entire study and ensure superior quality of the output.

Inclusion and exclusion criteria's

The entire task has been performed using secondary data collection process, though the primary data collection process has been taken within the exclusion criteria within the study. On the other hand, qualitative data and information's has been gathered within the study. Hence, quantitative data and information are taken within exclusion category within the study. The articles and journals published before 2019 has also counted within the exclusion category within the entire study. The authentic and peer reviewed data and information published onwards 2019 has been taken within the inclusion category while performing this particular study.

RESULTS

Need for performance and security within a software

The rate of cyber-crime all around the world has been increasing every day, the entire data storing operation of a business organization comes under threat as the result of the increasing rate of cyber-crime issues all around the world. A huge number of individuals have faced most significant challenges and lost their important data and information due to poor cyber security proposed by the software's. The increasing rate of cyber threat in the global market has increased the issues of data redundancy in the international business market surroundings [7]. Thus it becomes highly essential for the business companies to ensure proper data security in order to perform their business in an undisruptive way and gain superior performances. In 2021, 47% participants from all around the globe shared their feedback about the cyber-attack which most negatively impacted on the business performance of the companies in the global market [8]. It exhibits the overall need to ensure security within software in order to mitigate cyber-attack issues and ensure no loss of data.

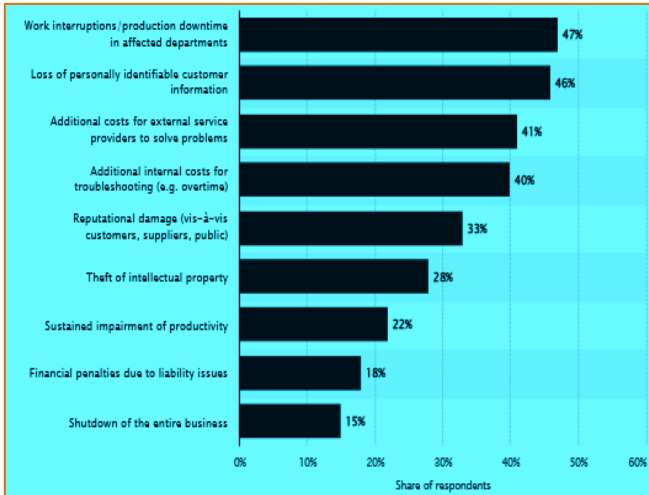


Figure 1: Cyber security attack impact on businesses

Furthermore, the performance issues within the software are also impacted negatively on the performance of a company in the global market. Most of the business enterprises throughout the globe have been taken forward towards taking assistance of various technological software's and applications in order to manage the overall strategic and operational tasks of the company all around the world. [9]. It reduces the effectiveness of the using software and brings forth a critical disturbance while performing business using modern software's within business. Though, it also becomes highly essential to ensure a sustainable and effective performance within software in order to a smooth and less interrupted business performance in the global periphery. It has actually increased the demand of the performance and security factors within software.

Software security is one of the most crucial parts while developing software as the case of malware attacks cause great damage to the entire system and technologies of an enterprise and increase the rate of errors while performing a certain operational tasks in business. The overall integrity, availability, accessibility, authentication of certain technological software has its superior dependency on the entire security and performance rate of implicating software's and helps to provide higher boost in the performance of a company in the global business market surroundings. In the fiscal year of 2023, the market size of the cyber security software's has been forecasted US\$173.50 billion [10]. A business company can be able to mitigate the cyber-attack in business through superior performance and security features of the using software's in business. It actually represents the need for performance and security within software. The proper maintenance of the performance and security concerns in time of developing software provides the key assistance to improve the contributions of the software within business as well as livelihood of the people throughout the world.



Figure 2: Revenue in the Cyber security market

Key security concerns need to focus on development process of software

Proper Bug testing process in time of developing software

A suitable bug testing process during the development time of software most significantly helps to ensure security within software. Most of the cyber threats and virus threats make their debut within a software or Iota system through the loopholes of bugs during runtime of software. The viruses internally affect the performance of a system and increase the risk of cyber threats. An effective and enhanced software must perform a superior bug testing system within it in order to improve security features of the software in the using the software.

Implemented data encryption features within a software

The data encryption process within software most significantly helps to enhance the security features of certain software. The data encrypted software's has been developed to make the data more secure and it becomes really difficult for the cyber threats to crack the code of the software and manipulate data stored within the software. Software developers mostly need to implement the data encryption features within the software in order to improve the security of data while accessing or using the particular software. Most of the individuals have shown their interest towards data encryption features as it helps to improve the security of the software and reduce data redundancy risks.

Ensure security updates within software's

The updated security patches mostly help to deal with the increasing threat of cyber-attacks and data hefting issues within software. The cyber attackers mostly try to crack the security of software over the time with various updated techniques of data manipulation. The process of providing frequent software updates and security up gradation within software mostly assists to reduce the risk of data loss and enhance the security features within certain software. Hence, software developing institutions have to keep their key focus on providing frequent security patch updates in order to improve the security of the software's.

Reduce web vulnerability through web security features within software

Various web security implications within software help to ensure less web vulnerability of the software's. It provides superior support to the software to reduce its risk of being affected by web viruses while accessing the internet. The implication of superior web security within a software helps to enhance data security which has to be focused by software developers in time of developing software and selling it in the global business market surroundings.

Key performance factors have to maintained in time of developing software

Quality assurance

Quality assurance is one of the key performance factors which have to be kept in focus by project developers in time of developing software. The feature of quality assurance provided within software most significantly helps to ensure superior quality and performance of software and helps to gain higher satisfaction from the consumers throughout the globe. Most of the leading software developing institutions provide quality assurance certificates with the software and take the responsibility to provide free services on any kind of software malfunction within a certain time period after the purchase of the software [11]. It helps to improve the performance of software.

Proper certification of the software's

Certified software mostly performs its tasks more prominently as the software development company has to take steps towards managing issues within the software against complication of the software's. It most significantly helps to ensure a superior performance of the software in the market and helps to improve consumer feedback while making use of the software in their necessary tasks. Hence, proper certification of the software is one of the key performance factors which have to be performed by a software developer to ensure desired performance rate of the software in its run time process.

Provide frequent updates to implement up to the date features

The steps of providing time to time updates within the software mostly help to improve the technical capability of the software. The entire process taken to provide frequent updates within software mostly helps to initialize and run a number of up to date technical features within software. Hence, it helps to improve the quality and performance of software.

Perform efficient Bug fixing

The bugs within software mostly reduce the performance of the software and come forth a multiple number of errors and threats while using certain software [12]. Hence, the steps taken to ensure the fixing of the bugs within software provide a key assistance to improve performance and quality of software.

Way to establish superior performance and security within software

A number of different steps and stages are there which mostly helps to improve the performance, safety and reliability of software. The application of various up to the date technicalities within software provides the key assistance to an enterprise to improve the performance of a software as well as assists to build a desired security features within the software's. The steps towards data encryption most significantly helps to ensure a superior safety and also provides the assistance to reduce the data redundancy risks while using software. The overall personal and business oriented data and information can be stored securely through make access of encrypted software. In the fiscal year of 2021, the market size of the bank encryption software reached 11.3 billion U.S. dollars [13]. The entire task of storing financial and personal data and information associated with the clients in the banking sector become more secure through availing various encrypted software's. The assistance of the security updates over the time also helps to increase the security and performance of certain software. The ethical and the consumer centric attitude of the software mostly help to improve the performance, quality and privacy of software [14]. It provides the assistance to ensure errorless and secure performance of software in the market.

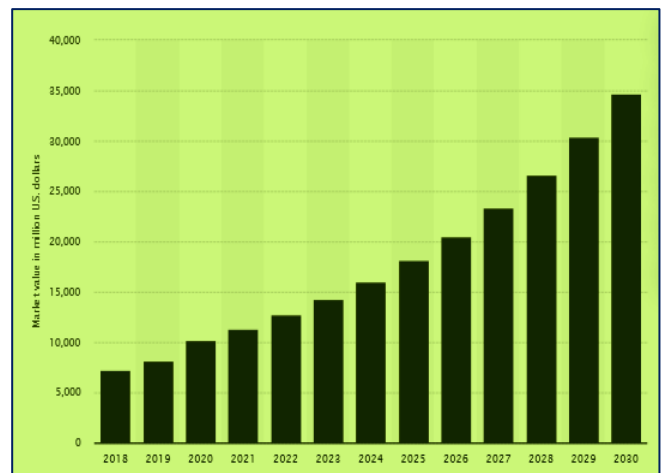


Figure 3: Market size of the bank encryption software

Contribution of high performance and security of software's within business

A huge number of modern tech gadgets and system software's in the worldwide business market periphery has been introduced in the last few years which most impact fully increase the performance of a company in the entire strategic and operational area. The entire supply chain, product designing, communication, manufacturing, delivering, inventory management area of a company can be performed more efficiently through availing the assistance of various high performance and security software within an enterprise [15]. The IT service is one of the most significant processes which can be avail through using software's and increases the data storing criteria of a company with a more secure process.

Most of the leading business companies in the international business market periphery have taken steps towards using various modern days' software to gain a superior boost in their entire performance rate in the competitive market. It actually shows that the assistance of high performance and security software provides the contribution to improve the performance, productivity and economic growth of a company in the global business market surroundings.

DISCUSSION

The entire study has been performed in order to evaluate factors to consider in developing secure and performance software's. The entire study has found that the issues according to performance and security have been most negatively impacted on the performance of users in the worldwide periphery. The overall strategic and operational tasks which have been going to be performed through availing the support of the various software's has faced critical disruptions due to poor performance of software's. A huge number of individuals and business companies have faced critical economic and operational loss due to poor performance of the software all around the globe. Hence, it becomes essential for the software developers to keep their focus on ensuring desired performance of the software and provide necessary technical support to the users who will face any technical issues while performing a certain task using software.

The security risk of the data and information most harms the brand value of an enterprise in the global periphery. A business company has to store a large amount of data and information through using software's within their working areas. The poor security features within the software's impose a critical risk of data redundancy and data hacking while using the internet. Hence, it becomes essential to ensure proper security within the software's in order to perform data storing operations using modern software's within business operation. On the other hand, security threats and attacks of malware and viruses cause total damage to the entire system and reduce the accessibility of the data stored within the system. Hence, it imposes critical disruptions in order to perform a certain task using modern software's and reduce the performance of the company in the international market periphery. Hence, it becomes essential to ensure proper security of the software's in time of developing software.

A number of processes and essential factors which have to be kept in concentration by the software developers have been discussed with an in detailed approach within the entire study. The entire study has been found that the process of bug fixing mostly helps to improve the performance and security within software. The study has been shown that most of the security threats within certain software are mostly caused due to bug oriented issues within a certain software. The steps taken to perform proper bug fixing most significantly helps to ensure superior performance and security within software. On the other hand, steps taken within software to encrypt the

data mostly help an enterprise to improve security features of software. Most of the popular software in the global market has undertaken the process of encryption features within the software to improve quality and reduce data redundancy issues in time of accessing the software. The key focus of the software developers towards bug fixing and data encryption helps to ensure performance and security of software. The entire step taken towards providing frequent updates within software helps to apply various up to the date techniques and security features within software and enhance the performance and security of the particular software. Hence, software developers have to keep their eye towards providing updates over the time in order to enhance the performance rate and security features within a certain software.

CONCLUSION

A huge number of individuals and business enterprises have been used to avail the assistance of various modern software's and technologies in order to perform their operations effectively as well as to gain a higher speed and less error within the overall working process. The poor performance and various security related issues within the software's caused the most negative impact on the performance of the enterprise and disrupted the growth in the competitive atmosphere. Though, it becomes highly essential to ensure desired performance and superior security measures within software's in time of development to gain issueless and superior services while using the software. The entire study has kept its focus on evaluating the factors which have to be considered in time of developing performance and security software in the business market surroundings. The software developers will be able to gain proper insight about the components which have to be kept in mind in time of developing performance and security software.

The entire study has been performed through taking an inductive approach and gathering various non-numeric, textual, qualitative data through a secondary data collection process. It has also kept its focus on gathering information from peer reviewed and authentic online sites, journals and articles which are published onwards 2019. The study has identified the process of providing frequent bug fixing processes, data encryption, lower web vulnerability, and in time security updates are the key factors which have to keep in concentration in time of developing and offering security software towards the users. On the other hand, proper certification for the software's, quality assurance, and timely updates are some key components which have to be ensured in performance software. These factors within security and performance software provide the assistance to gain the most suited and effective contribution from performance and security software in recent day's global market.

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