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Design of information distribution system (soundsee) on websitebased digital platform

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ABSTRACT

Dissemination of information about promos, events or company products is very important to attract clients / customers. However, the dissemination of information by distributing brochures / pamphlets is not efficient. In addition, for the dissemination of information through Whatsapp, e-mail or SMS has the risk of Hacking. Hacking techniques such as Social Engineering are often ignored by companies so often targeted for Cyber Crime. To prevent this, there needs to be an information data security system that pays attention to aspects of confidentiality, integrity and availability. This research aims to create a system that serves as a safe and efficient information delivery. Soundsee is a web-based information dissemination system that comes with mass message delivery on whatsapp (Whatsapp Blast). Soundsee stores customer information data such as phone numbers and company information data that disseminates information and prevents cyber crime problems using Social Engineering Hacking Techniques. With the Agile Development Methods method with the Scrum Model, the system was developed. This system allows users to store customer data as well as create information that wants to be conveyed to the customer. After that spread the information to whatsapp media platform to customers whose data has been stored or can be uploaded to other media platforms such as facebook and Instagram. The use of this system is able to increase the efficiency of time and cost and improve data security in the dissemination of information.

Keywords: dissemination of information, website, and Whatsapp blast



1. INTRODUCTION

In today's increasingly advanced digital era, there are many ways to find ways to exploit or damage a system or information that is running in an agency or organization by using one of the hacking techniques that are not widely known, namely Social Engineering, Techniques such as This is often ignored by the public, especially the author's observation place, of course this is an easy target for Cyber Crime. Because in computer network systems, humans are often dubbed the weakest component (Junaedi, 2017). There are several aspects that must be considered in an effort to prevent this in securing the right information data in data information security (Widodo & Gunawan, 2017), namely: (1) Confidentiality, guarantees the confidentiality of data and information to be sent, stored and received and only authorized/authorized parties can access it; (2) Integrity, maintaining the accuracy and integrity of information so that data cannot be obtained without permission from the authorized party; (3) Availability, when needed, information will be available.

By understanding this, the author provides a solution in securing data and providing information with the application of Webiste Soundsee. As a means of delivering information as well as storing customer data or information such as telephone number data and company information data that is used to digitally disseminate information to our market and the platform that is our digital market equipped with a mass messaging system on Whatsapp or known as Whatsapp Blast (Firmansah et al., 2020).

With the main problems that the author encountered above, that to prevent a Cybercrime problem that uses Social Engineering techniques and help disseminate information, it is necessary to have a proper and accurate container in a data security tool for our information with the Soundsee website itself, the author hopes to help the existing problems. and circulating in today's digital era (Pamungkas & Khalida, 2019).

In designing and implementing Website-based technology, the author applies a more flexible and faster method so that the development and dissemination of information can be realized. Here the author uses Agile Development Methods with the Scrum Model because the improvement of development is carried out continuously by implementing more adaptive and relatively short daily activities through design and development of use so that it can make the implementation of IT governance development successful. Agile Project Management with the Scrum Method where Scrum is "a framework used to manage flexible or agile software projects (Pamungkas & Khalida, 2019), which have received attention in the software market to provide flexibility to development teams" (Wijaya, 2018).

In the process that occurs in the implementation of this website design, the author uses the Scrum method because this method can control damage due to design errors and filter things that can be predicted with interactive and incremental approaches (Wijaya, 2018), and information and security systems with the help of various support teams Developers or Developers as a team in developing their own Soundsee website.

In the development and design of this website using Agile Software Development Methods which is a method based on interactive development, in addition the requirements and solutions develop with the collaboration of an organized team (S. & Sutherland, 2017).

Scrum is a small team of the Scrum Team. The Scrum Team consists of 3 parts, namely: one Scrum Master, one Product Owner, and Developers (Mahendra & Yanto, 2018). However, in the application of this method, the author reengineered what could be applied to the business process of making this website.

First, Scrum Master. The Scrum Master is the website soundsee.net. The soundsee.net website is responsible for the effectiveness of the Scrum Team, which ensures that information reaches their official page or their intended platform by managing information media traffic (Mahendra & Yanto, 2018). Second, Product Owner. In this case, it is responsible for maximizing the value of the product resulting from the performance of the Scrum Team. The ways in which product value is maximized can vary widely between organizations, Scrum Teams, and individuals (Mahendra & Yanto, 2018). Third, Developers. Within the Scrum Team, at every Sprint Developers are committed to making every aspect of Increment workable, at every Sprint (Mahendra & Yanto, 2018).

At this stage the author uses the programming language Java Script, PHP and MySQL. The programming technology used is structured programming technology. At this stage the design results are entered into the programming language used so that it can be run as a system. This is the code that translates the design into a language that the computer can understand.

At this stage, the software is tested from a functional point of view, and all components have been tested. The testing method that the author chose is black box testing because it only focuses on functional aspects and minimizes errors and ensures that the output produced is as needed so that the authors hope this testing method is effective.

The software used in writing the program is Visual Studio, Adobe XD application for system design and Dreamwever for web page editing. As for testing the system before hosting, the author uses the help of Xampp. The support stage can repeat the development process from specification analysis to modifying existing software without creating new software. Carry out the process of monitoring web activities and further developing the web.

With the data information on this website, developers and vendors can easily see what Threats are on the soundsee website and what information is broadcast through the soundsee.net website. With the Agile method and the Scrum approach applied to maximize the capabilities of the website and complete the project within the allotted time. By using several hosting providers and developers as Back End in website development and users as Front End in using soundsee.net website.

Besides utilizing technology, the website as the main medium in optimizing the system is also supported by the use of mass messaging services via Whastapp or what is often referred to as whatsapp blast. Whatsapp Blast itself is a third-party application developed by the Developer for sending WhatsApp messages in bulk and there is no need to save the previous number in the sender's contact. By utilizing the website and the functions of WhatsApp Blast, processes related to company activities in terms of information can be carried out easily, quickly and flexibly (Widodo & Gunawan, 2017).

There needs to be an information system that can help companies communicate their product profiles to the public easily and at low cost. On the other hand, the public can easily find out information about the products offered. In order for information system development activities in companies to produce quality information systems in a short time, agile development methods with the Scrum Model are used. The Scrum model is an iterative approach to software development that carries agile principles (Hadinata & Nasir, 2017). In addition, in the Scrum Model, users are actively involved in the process of developing information systems, so that the resulting information system can actually meet user needs (Mahendra & Yanto, 2018)

2. LITERATUR REVIEW

2.1 Information Systems

Mobile technology allows salesmen to make sales orders no longer need to record orders in books or memos, companies can use this technology to implement a sales order system that allows salesmen to make sales orders directly via their smartphone or tablet, thus helping companies improve efficiency in terms of company operations (Junaedi, 2017).

Whatsapp Blast is an application developed by the developer as a third-party application that can send WhatsApp messages in bulk without the need to store the previous number in the sender's contact (Widodo & Gunawan, 2017). Protection from data loss due to being stolen, protection from data alteration by unauthorized persons, protection from data damage and protection from data being read by unauthorized persons are all kinds of data security required (Firmansah et al., 2020)

2.2 Data Information Security

Information security in the application of technology functions to maintain the Confidentiality, Integrity and Availability aspects of information (Pamungkas & Khalida, 2019). Based on the principle of data information security, the following aspects need to be considered: (1) Confidentiality, guarantees the

confidentiality of data and information to be sent, stored and received and only authorized/authorized parties can access it; (2) Integrity, maintaining the accuracy and integrity of information so that data cannot be obtained without permission from the authorized party; (3) Availability, when needed, information will be available.

In this case, every data from each user or soundsee ID owner can store their customer contacts, in each of their IDs and can be used when they are on their device, indirectly each of their contact IDs is stored in the Soundsee Cloud Server.

2.3 Agile Software Development Methods

The originator of the concept of Agile Software Development a Kent Beck and 16 colleagues. They explain that agile software development is a way of building software by doing it while helping others build it (S. & Sutherland, 2017). Pressman in 2010 explained that Agile software development methods or agile methodology are based on iterative development, where requirements and solutions develop through organized collaboration between teams (S. & Sutherland, 2017)

While Sommerville in 2011 explained that the agile method is an incremental development method that focuses on rapid development, gradual release of software, reducing process overhead, and producing high-quality code and involving customers directly in the development process (S. & Sutherland, 2017).

There are several software development models that include agile software development methods, namely: Extreme Programming, Adaptive Software Development, Dynamic Systems Development Method, Scrum Model and Agile Modeling (Mahendra & Yanto, 2018)

In this study, the model used is the Scrum Model because Scrum has been widespread throughout the world. Some of the uses of Scrum include: (a) Researching and exploring market potential, technology, and product capabilities; (b) Developing the product and its enhancements; (c) Release the product and its improvements, as often as possible every day; (d) Develop and maintain operational cloud computing systems (online, security, on demand) and other operational environments for product use; and; (e) Manage and update a product

2.4 Website

The website contains multimedia documents (text, images, sound, animation, video) in it using the HTTP (hypertext transfer protocol) protocol. The website functions as a Promotional Media, Marketing Media, Information Media, Educational Media and Communication Media

2.5 Java Script

JavaScript web programming language is a programming language that was developed in the mid 90's decade and is a Client Side Programming Language, which is a programming language whose processing is done by the client. The client application used is a web browser such as Google Chrome, Mozilla Firefox, Opera Mini and so on. In its use, JavaScript can be used as a separate document which is then associated with other documents to which it is intended or inserted in an HTML document. The implementation of features designed in JavaScript functions as a controller so that a web page interacts with its users (Henderson in S. & Sutherland, 2017).

2.6 PHP

Published from the journal Prayitno (2015) that according to Anhar (2010) explains that the Hypertext Preprocessor (PHP) web programming language is a script that can be integrated with HTML (Patih, 2012). Hypertext Preprocessor (PHP) is. web server-side programming language is open source (free) that is run through web pages and is generally used to process information on the internet. PHP resides on the server and integrates with HTML (Kurniawan in Rahman et al., 2016) (Rahman et al., 2016)

2.7 My SQL

Published in the journal Sugiyanto et al (2014) explained that My SQL (My Structure Query Language) is an application or database management system (database) or data management in charge of organizing and managing the data in the database. Quick and easy query process, as well as an efficient and reliable system are the advantages of MYSQL which makes it suitable for use for web-based applications (Patih, 2012). SQL allows us to do the following: (1) Modify the database structure; (2) Modify, populate and delete database contents; (3) Transferring data between different databases.

2.8 Visual Studio

Microsoft Visual Studio is an Integrated Development Environment (IDE) from Microsoft which is used to develop computer programs on Windows operating systems such as websites, web applications, web services and desktop applications (Junaedi, 2017).

2.9 Dreamweaver

Handling the layout of web pages is the role of Macromedia Dreamweaver. Macromedia Dreamweaver professional application program functions to manage websites and pages and visually change HTML. Because it appears visually is what makes this application easy to operate. This program can help improve the user's ability to create a web because it provides many tools (S. & Sutherland, 2017).

2.10 Xampp

XAMPP is an open source-based PHP package developed by an open source community and in it there are several program packages that can be run directly such as Apache, MYSQL, PHP, Zila Files, Phpmyadmin and others (Hasugian, 2018). According to Aditya (2011), XAMPP functions as a standalone server (localhost). XAMPP consists of the Apache HTTP Server program, Mysql database, and a language translator written in the PHP and Perl programming languages. XAMPP stands for X (any four operating systems), Apache, MySQL PHP and Perl. XAMPP advantages are free software, available under the GNU (General Public License) supports many operating systems which are a compilation of several programs, easy to use and can serve dynamic web page views (Hasugian, 2018)

2.11 Unified Modeling Language (UML)

According to Pressman (2010) explaining that the standard language for writing software plans is called Unified Modeling Language (UML). UML can be used to visualize, define, construct, & document artifacts by software systems. In other terms, for example, a building architect creates a floor plan that will be used by a construction company, an application architect creates UML diagrams to help software developers build software (Rahman et al., 2016)

A visual language for modeling and communicating about a system using diagrams and supporting texts is called UML. Some of the models included in UML modeling are use case diagrams, class diagrams, activity diagrams, and sequence diagrams (Pahlevi et al., 2018).

2.12 Entity Relationship Diagram (ERD)

According to Soflano et al. (2015) explain that the Entity Relationship Diagram is a model that can be used as an explanation of the understanding of the data that will be used by a company. In database design, ERD plays a role for a top-down approach where the design begins with identifying important data (entities) and the relationship between data that must be presented in the model (Rahman et al., 2016)

Andriansyah (2018) explains that the diagram that describes the relationship that occurs between tables is called ERD. Meanwhile, according to Rahmayu in (Mesran et al., 2018) describes that ERD is a

description of the data modeled in a diagram that is used to document data by determining what each entity contains and how the relationship between the entities is with one another (Yunita & Susanto, 2020).

2.13 Logical Record Structure (LRS)

According to Andriansyah (2016) provides a limitation that a clearer form of describing ERD and easy to understand is called LRS. LRS depiction is almost the same as file normalization, the difference is that in LRS, the asterix (*) symbol is not depicted as a primary key and foreign key symbol. Meanwhile, according to Frieyadie in (Mesran et al., 2018) "LRS is the result of the transformation of the Entity Relationship (ER) model and its attributes so that relationships between entities can be seen" (Yunita & Susanto, 2020).

2.14 Black Box Testing

To find out whether the input and output functions of the software are in accordance with the required specifications without testing the design and program code, Blackbox Testing is used (Guntara & Sutjahjo, 2021)

The Black Box Testing method is easy to use because it only requires a lower limit and an upper limit of the expected data. The estimated number of test data can be calculated through the number of data entry fields to be tested, the entry rules that must be met and the cases of the upper and lower limits that meet. With this method it can be seen if the functionality can still accept unexpected data input, causing the stored data to be less valid (Guntara & Sutjahjo, 2021)

3. SYSTEM ANALYSIS AND PROPOSED PROGRAM

3.1 System Business Process

The process of disseminating information on current market products to the company is done by contacting customers via telephone. If the customer can meet in person, there will be a direct meeting with the customer to offer market products. If the customer cannot meet, then the market product offering is continued by telephone. See Figure 1 for detail

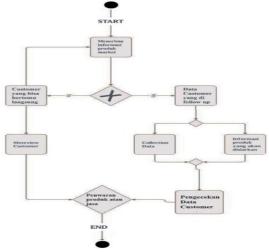


Figure 1. Activity Diagram manual information dissemination

3.2 Software Needs Analysis

In the process of designing a website, an initial step is needed which becomes material for analyzing various needs that will be used as input or reference in developing this website. These requirements include inputs, expected, outputs, and interface designs that make customers and users easy

to use and understand.

3.2.1 Analysis Stage

In designing the Soundsee website using several users. The following is a specification of the system requirements of the system program.

User Page Access:

- A1. User can login
- A2. Users can input customer data
- A3. User can change User and Customer personal data
- A4. Users can post news information in the form of JPG, PNG and GIF
- A5. Users can specify Traffic information to the protocols of the intended information platform.
- A6. Users can choose the information that has been posted to be sent to the customer to be addressed.
- A7. User can log out.

Access Customer Pages:

- B1. Customers can register an account as a User on the soundsee.net website
- B2. Customers can see the information that has been posted by the User in the last weeks
- B3. Customers can see information that is shared or broadcast by users.
- B4. Customers can re-share the information shared by users to several friends in their personal contacts.

3.2.2 Use Case Diagram

See Figure 2 for detail.

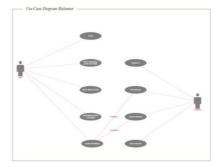


Figure 2. Web System Use Case Diagram of Soundsee.net

3.2.3 Activity Diagram

See Figure 3-4 for detail.



Figure 3. Activity Diagram User Page Access

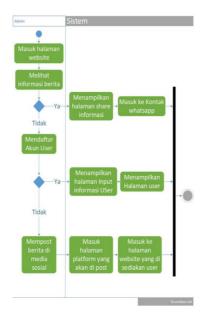


Figure 4. Activity Diagram Guest Page Access

3.3 Software Architecture

See Figure 5-13 for detail.

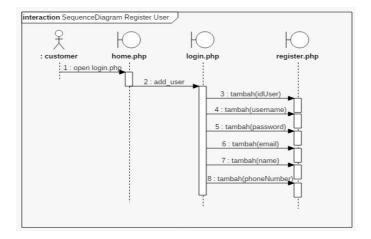


Figure 5. Sequence Diagram Register User

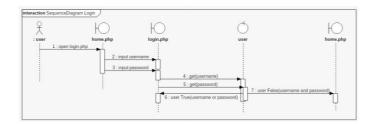


Figure 6. Sequence Diagram Login

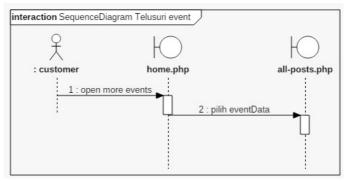


Figure 7. Sequence Diagram Browse Events

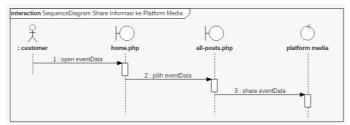


Figure 8. Sequence Diagram Share Information to Media Platforms

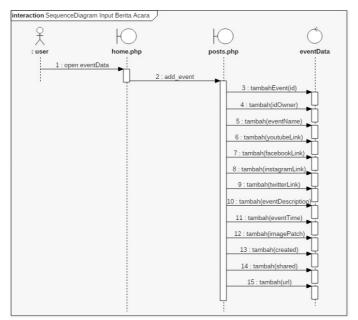


Figure 9. Sequence Diagram Input event report

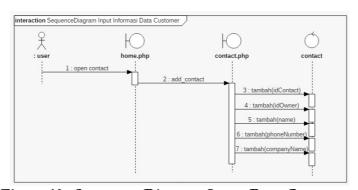


Figure 10. Sequence Diagram Input Data Customer

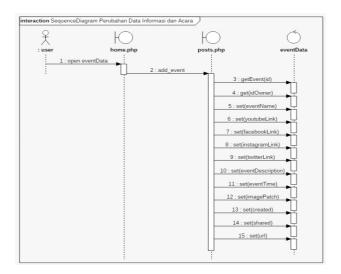


Figure 11. Sequence Diagram of changes Event information

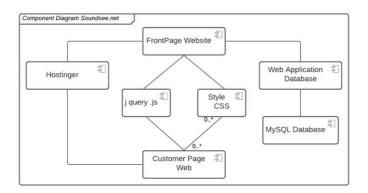


Figure 12. Information Dissemination System Component Diagram

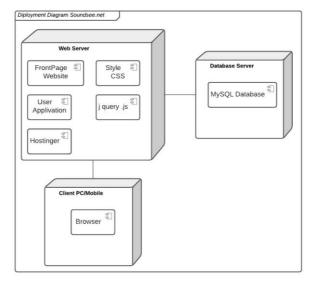


Figure 13. Deployment Diagram of Information Dissemination System

3.4 User Interfaces

In designing this website-based system, we present a simple appearance and place more emphasis on the functionality of this website's performance as a liaison of information from users to their customers. See Figure 14-20 for detail.



Figure 14.Initial view of the website on PC/Computer

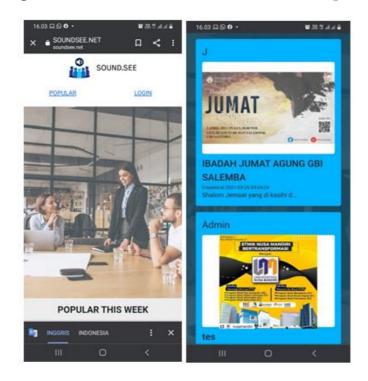


Figure 15.Initial view of the website on a mobile device



Figure 16.Login Page View

In the development of this website, it is accompanied by a register menu section to help consumers or users to register their id as a user.



Figure 17. Register page display



Figure 18.Main page view

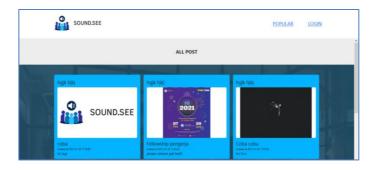


Figure 19. Display Of The Main Page In The Post Section



Figure 20. Contact page view as add function

For web publications, the researcher purchases hosting and domains for the https://soundsee.net/home.php site on a web hosting provider, namely https://seiketindonesia.com/: subscribe to hosting Rp. 90,000/month, the price includes hosting and domain, get 2 GB of space with Unlimited bandwidth, get Unlimited SQL databases, and have some other bonuses

The author chose https://seiketindonesia.com/ because it has a stable server and very fast maintenance and responds to clients well via chat, email and telephone.

In the design and implementation of this Soundsee website, several additional documents and supporting browsers such as Google Chrome, Duck-Duck GO or Internet Explorer are needed and files of JPG, PNG and GIF type to become digital flyers or digital content that will be shared, and mobile phone numbers. as a means of connecting the soundsee and the customer or cutomer.

5. CONCLUSION

In this modern and all-digital era, there is a lot of information circulating in cyberspace in the form of document files, photos, videos and their official links. However, the impact that cannot be tolerated is the spread of information that disturbs the public and false media information that is detrimental to many parties. With this website, it is the author's effort to design a business system that can help the community, especially middle and upper entrepreneurs, to be smarter in using the technology that is currently developing by connecting various trusted media platforms in 1 official link. So that customers or public consumers can get valid and clear information and educate the public so that the dissemination of this vulnerable information must be maintained the confidentiality, integrity and availability of their business information. With the soundsee website, the author hopes that there will be a lot of information development in Indonesia and the world, can be connected to several valid information media through this soundsee net website.

Ethical Approval

Not Applicable

Informed Consent Statement

Not Applicable

Authors' Contributions

OJPM led the conceptualization of the study, designed the system architecture, and supervised the development process using Agile–Scrum. He also prepared the manuscript draft and coordinated revisions throughout the submission stages. IS contributed to the methodological design, assisted in system analysis and feature development, and supported data interpretation related to security aspects. She also reviewed and refined the manuscript to ensure academic quality and clarity.

Disclosure Statement

The Authors declare that they have no conflict of interest

Data Availability Statement

The data presented in this study are available upon request from the corresponding author for privacy.

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