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IMPLEMENTATION OF *FULL STACK WEB DEVELOPMENT* FOR DATA ADMIN ON SOCIAL MEDIA BUZZBUDDIES

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ABSTRACT

Now, the internet and mobile phone technology is getting more advanced then social media also grows rapidly. In the dependence of human needs on social media and the rapid development of technology is making the number of new social media applications that appear in virtual worlds such as social media Buzzbuddies. This research is motivated by the difficulty of how Data Admin Buzzbuddies manage, organize data on social media Buzzbuddies and still depend on Backend Programmer which takes longer time. In addition, there is no report of available user data. This research use PostgreSQL for the database, AngularJs for client-side framework, Node.js for a server-side platform and Express for a server-side web application framework. This technology works together well as a stack. The purpose of this research is to make application can improve the effectiveness, reduce the work load and time and make the best of performance. In addition, the application is also able to provide data for analysis and decision support and able to manage data rationally

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1. INTRODUCTION

Technology *Internet* and *mobile phone* advancing, so social media is also growing rapidly. Social media is an *online* that supports social interaction, where users can participate, share, and create content. Due to the dependence on social media needs, many new social media applications have emerged such as Buzzbuddies, which is a social media from Indonesia that has a concept of prioritizing easy interaction between friends who have the same interests. To maintain social quality, Buzzbuddies analyzes large amounts of data and requires modules in the form of *announcement, user demographic, interest, suggestion, report, quest* and *redeem.* In Buzzbuddies, there are *quests* where each user is given a mission to do something. The acceptance process for completing the mission can be checked in 2 ways, namely using the program and manually depending on the given mission. Checks that are done manually for each user certainly take a long time because they have to consider the content of *posts* or *surveys* conducted outside the application.

If you complete the quest, the user gets *points* and can be exchanged for *merchandise* called redeem. Buzzbuddies admin does not yet have an *interface* which users

out *redeem*, reply to *redeem* . Manipulation of data for redeem and quest is still done by *backend programmer* manually by directly on the database. This adds to the *backend programmer's workload*. With the number of users

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increasing every day, the Data Admin Buzzbuddies is also tasked with monitoring or monitoring user post data for the smooth and comfort of each user. However, there is the possibility of posting data *that* is disturbing or contains SARA, gambling, pornography or unfiltered unlawful acts. Users who find *posts* have not been able to submit reports to the Buzzbuddies Admin. Users also have not been able to send suggestions and criticisms to Buzzbuddies. Buzzbuddies admin also doesn't have a module for *reports* and *suggestions.* Buzzbuddies admin has the authority to *query* data on *the database* and delete Buzzbuddies users. Buzzbuddies is not yet available supporting applications for

LITERATURE REVIEW

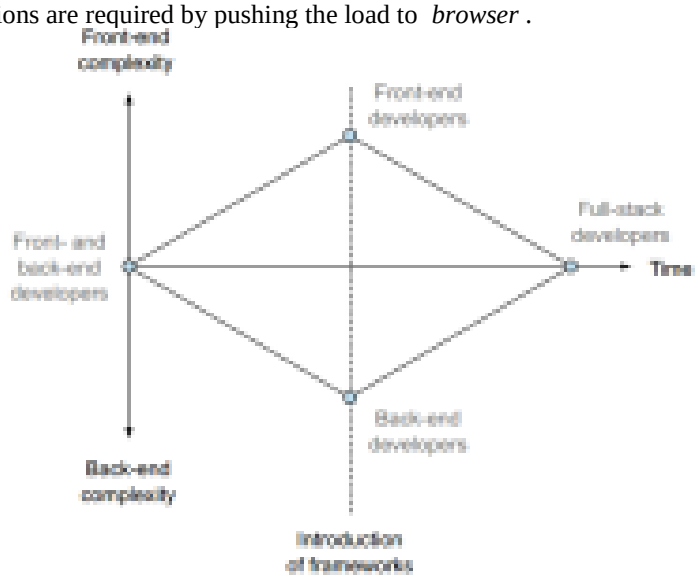
According to Michael Dewing regarding social media (2012:1), "The function of social media is that humans can exchange photos and *videos*, share experiences, *post* about what they think and participate in *online*. Social media also , governments and parliamentarians to communicate with each other in large *allows* organizations *numbers* . Data sources usually provide reports of active users and new users joining and being able to download reports in *spreadsheet*(*.xls). *Announcement* is a mechanism that contains information that you want to disseminate to all Buzzbuddies users in order to make it easier for Buzzbuddies users to find out new features or announcements about *quest* or the mechanisms and conditions for using the application.

Each *post* is categorized based on *interest* which is currently still few. To expand the *interest*, Buzzbuddies Admin needs an *interface* to add, edit *interests*. There is no application available to manage and enter product data to *redeem*, new quests and *interests* in an integrated manner. Buzzbuddies does not yet have a unified application that is integrated with each other to support the running of Buzzbuddies and manage data rationally, quickly and accurately to improve the performance of Buzzbuddies and provide data analysis and decision support.

stored in *a database management system* or *electronic spreadsheet*. According to Simon Holmes regarding the *full stack*(2016:3-5), *Full stack* is a technology that involves *a database* and *web server* on *back end* which contains *application logic* and control in the middle as well as a user *interface* on *the front end. Back end developers* focus on the mechanics that run behind them, *front-end developers* focus on building *user experience* . During the 2000s *libraries* and *frameworks* started to become popular and prevalent for most common languages, on both *the front* and *back end*. *The framework* is designed to make developer life easier, lowering barriers to entry.

A *library* or *framework* reduces some of the complexity in *development*, which allows for *code* faster *front end* provides data to the *user* in the form of a display where the user accesses *the web* via *a browser* which uses *HTML, CSS* and *Javascript*. *The backend* is more focused on *business logic* and data on *web* applications.

According to Simon Holmes (2016:6), The trend of simplification has resulted in the emergence of *full stack developers* who build both *the front end* and the logic behind the application. Continuing the trend of frameworks, the last few years have seen an increasing rate of moving application logic off the *server* and to *the front end*. One of the reasons for using this approach is to reduce the *load* on *the server*, thereby reducing costs where *resource* -intensive, compute-intensive applications are required by pushing the load to *browser* .



RESEARCH METHODOLOGY

Research Objects

Multi Visi Paragon was founded by Andrew Susanto in August 2014 which is a company engaged in entertainment and media which develops a social media application called Buzzbuddies. PT.Multi Visi

Figure 2.1 Full Stack Architecture There is an increasing *trend* towards *full stack web development* where the

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programming language used for implementation for the entire *stack* where you can have *front* as *a single page application* by using one of the *javascript frameworks* such as *angularjs, server-side* can be implemented using technologies such as *Nodejs* and *NodeJS modules* as well as *data access* or *data storage* can be implemented with technologies such as *MongoDB* which accepts data in *JSON* and is able to present information in the form of *JSON data. JSON* has become the standard format for data exchange between the three *layers* as depicted in Figure 2.4. *The server side* very easy to send data through the *REST API* so that it is able to plan *multiple platforms* for display such as for *mobile devices (hybrid)* and *web development.*

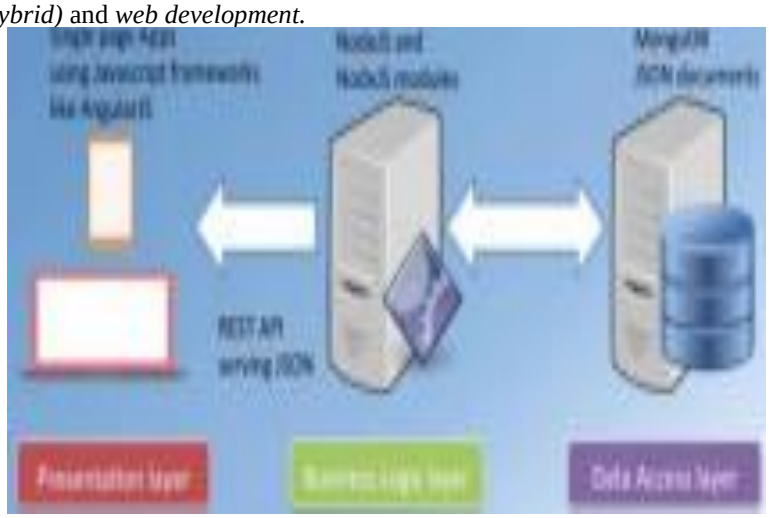

Figure 2. Full Stack Javascript Development

Paragon located at Menara Merdeka Building, Lt. 28 Jl. Budi Glory 1 No. 2 Central Jakarta. PT. Multi Visi Paragon is a technology company that is committed to helping businesses to create applications and websites according to their needs and also committed to helping users to enjoy their time while using the application. Now, Buzzbuddies is available on Website, Mobile site, IOS, and Android. Buzzbuddies is a social media platform for sharing positive feeds according to their interests.

Research Method

XP is a model with an agile approach proposed by Kent Back. According to his explanation, XP is "*Extreme Programming (XP) is a lightweight, efficient, low-risk, flexible, predictable, scientific, and fun way to develop software*". This model tends to use an *Object-Oriented*. The target *Extreme Programming* is that the team formed is between small to medium in size, no need to use a large team. This is intended to deal with unclear requirements as well as rapid changes in requirements. *Extreme programming* is *agile* method and has become a very popular approach.

The stages that must be passed are planning, design, coding, testing

Data Collection Techniques

The research approach used is qualitative social research. This research is a process to generate new knowledge and information by using a scientific approach that can be used to solve problems.

In research, data collection techniques are an important factor for the success of research. Data collection techniques carried out by researchers:

a. Participant observation Observation

Method is a method of collecting data by observing and systematically recording the symptoms being investigated (Supardi, 2006: 88). Observations are carried out according to certain procedures and rules so that they can be repeated by researchers and the results of observations provide the possibility to be interpreted scientifically. Participant observation is when the observer (the person who makes the observation) takes part or is in the state of the object being observed (Supardi, 2006). In this observation, the researcher is directly involved in the daily activities of the person or situation being observed as a source of data. The reason researchers make observations is to present a realistic picture of behavior or events, to answer questions, to help understand human behavior, and for evaluation, namely to measure certain aspects and provide feedback on these measurements.

b. Questionnaire

Questionnaire (questionnaire) is a data collection technique that is carried out by giving a set of questions or written statements to respondents to answer them, where the researcher does not directly ask questions to the respondents, the researcher distributes questionnaires to 10 respondents which takes place from April to May 2017.

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c. Library Studies Literature

studies or literature studies, apart from looking for secondary data sources that will support the research, are also needed to find out to what extent the science related to research has developed, to what extent there are conclusions and generalizations that have been made so that the required situation is obtained.

RESULTS AND DISCUSSION

Results

The resulting system is a web-based application using full stack web development technology consisting of a single page application AngularJS as the frontend, NodeJS REST API as the back end and Postgresql as the data store. The system is divided into the following main components:

a. Demographic is an application for manipulating data and reports containing information about Buzzbuddies users which consists of 5 parts:

The User Database displays all user data in the form of a table in the form of user id, username, full name, cellphone number, date of account creation, date of verified account , last posting date, active status, points and referral code sorted by account creation date and limited to a maximum of 50 users. The next user can be viewed with the next button and the previous data can be viewed with the back button. Data can be filtered by user id, username, fullname, email, role or role. Data can also be viewed locally on a computer by downloading it in spreadsheet form. It is also capable of manipulating user data such as creating new users, activating and deactivating users, completely deleting users from users. For the operation of activating and deactivating a user, deleting a user can be performed on multiple users by simply selecting the desired user using a checkbox. This operation is useful if there are users who violate internet etiquette or are regularly reported by other users through reports.

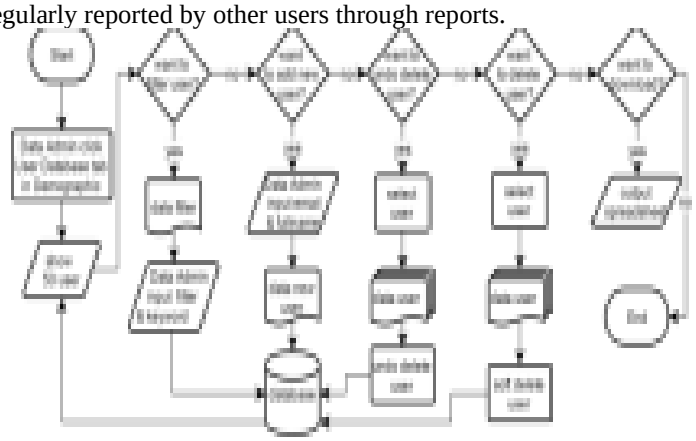

Figure 1. User Database Flowchart

(2) User Demographic is a report on the total number and percentage of users and users who were active in the last 30 days based on age and gender.

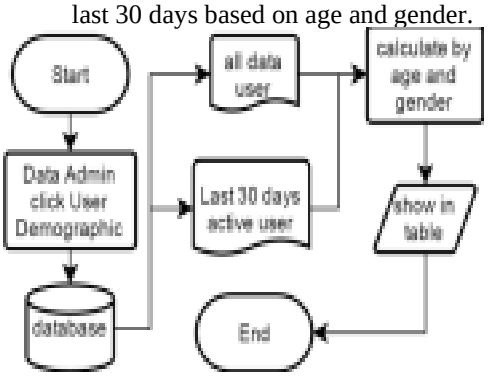

Figure 2. User Demographic Flowchart

(3) Active User is a report on the number and average percentage of active users according to the last desired time interval based on age and gender. By default, the time interval is the last 7 days, but you can also choose what you want by filling in the start date and end date. The report can be downloaded in the form of a spreadsheet containing the number of active users based on the specified time interval.

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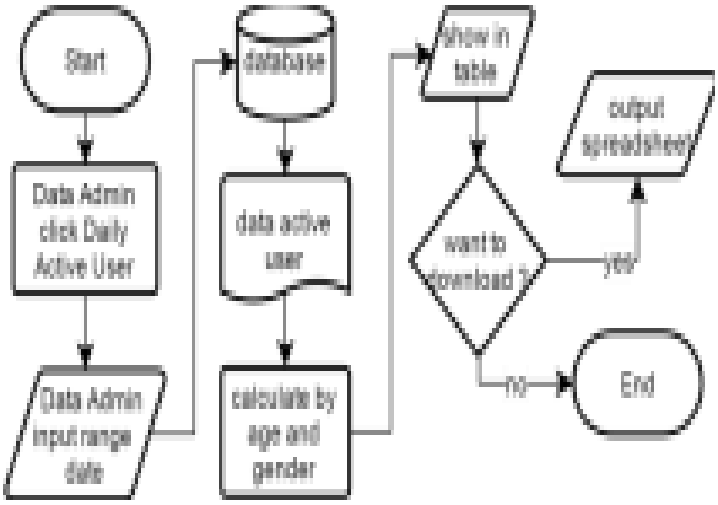

Figure 3 Daily Active User Flowchart

New User is a report on the number and percentage of users who have just registered with Buzzbuddies according to the last desired time interval based on age and gender. By default, the time interval is the last 7 days, but you can also choose what you want by filling in the start date and end date. The report can be downloaded in the form of a spreadsheet containing the number of users who have just registered based on the specified time interval.

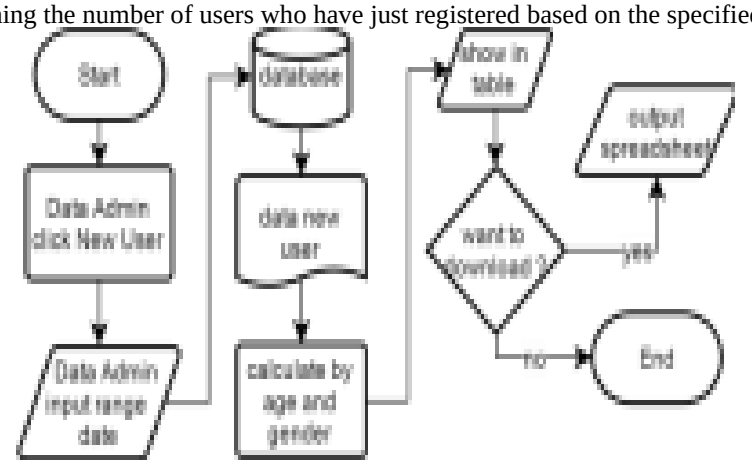

Figure 4. Flowchart of New User

Referral. At Buzzbuddies, each user has their own referral code which can be shared with other users to invite friends to register with Buzzbuddies. Referral demographic displays data in the form of reports on the number of referral codes that have been used by other users. The data is displayed in the form of a table containing the referral code, user email, full name, many referral codes in the last 7 days and the total. The data displayed on the referral demographic can be searched based on the referral code.

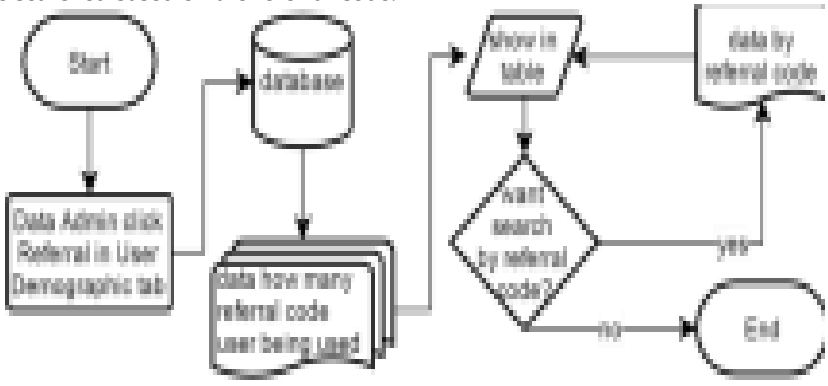

Figure 5. User Referral Proposal

b. Interests. In buzzbuddies, each user can choose the field of interest, and each post is specified by interest so that

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users can only see posts based on the selected interest. Interest is an application to manipulate available interest data and enter new interest categories. Interest displays interest data in the form of name, background color, photo representing the interest and active status. Admin can also manipulate interest data such as changing background color, photo and active or inactive status. If the interest status is not active, the user cannot choose the interest, but posts that have been previously posted are still categorized based on that interest. Admin can input new interest.

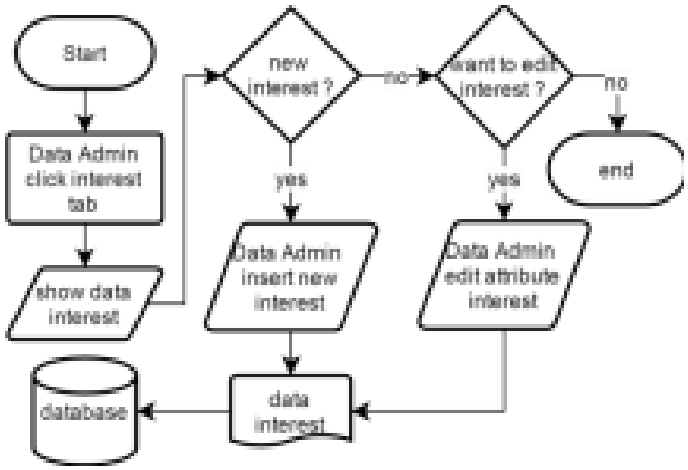

Figure 6 Interest Flowchart

c. Announcement is an application to manipulate available announcement data and enter new announcement categories. Announcement displays data in the form of title, username, date, image on announcement and active status. If you click on the wrong line of announcement, it will display a preview announcement. Admin can also edit and input new announcements.

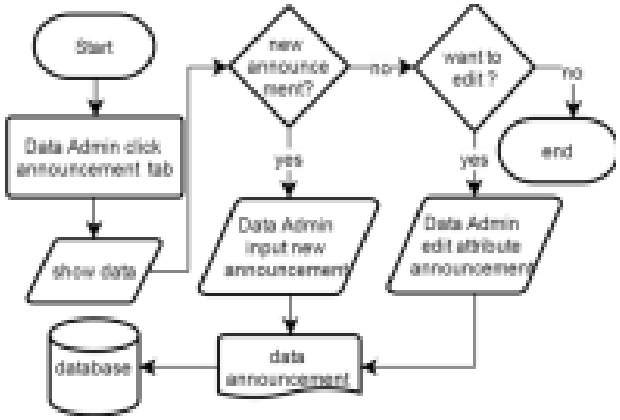

Figure 7 Announcement Flowchart

d. Suggestion is an application that displays messages that have been given by Buzzbuddies users in the form of suggestions and criticisms that the Buzzbuddies admin section can reply to. Suggestion displays data in the form of message date, sender's name, date of reply, name of admin who replied. If the message has not been replied to, the admin can reply directly where the reply will be automatically sent to the sender's email.

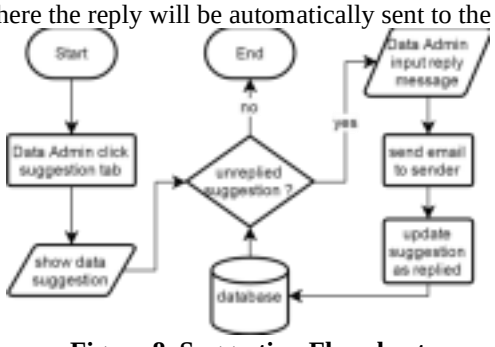

Figure 8. Suggestion Flowchart

e. Report is an application that displays report data in the form of report date, sender name, post content, post owner name, reason for the report, name of the admin who processed the report and status of the report. If it has not been

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processed before, the admin can follow up by deleting the post or ignoring the report.

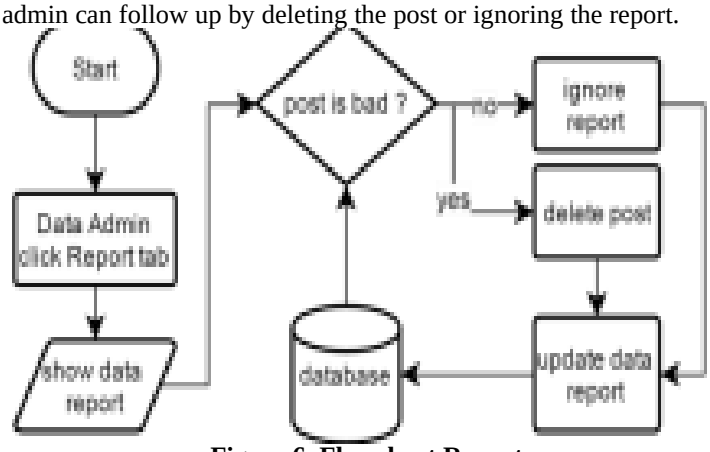

Figure 6. Flowchart Report

f. Quest is an application to process checking quests that are done manually. There are several quests containing missions that can only be checked based on human intelligence such as the content of posts that contain feelings or posting certain photos. Quest also sometimes asks users to post on other social media or fill out surveys through other applications so that only human checks can be carried out. The quest consists of:

Manual Review showing all user posts containing certain hashtags that indicate following the quest. The Manual Review is also equipped with a feature to approve or disapprove that the user has successfully completed the quest. The data displayed to support the approval is the hashtag name, posting date, post ID, full name, post content, interest category, image contained in the post.

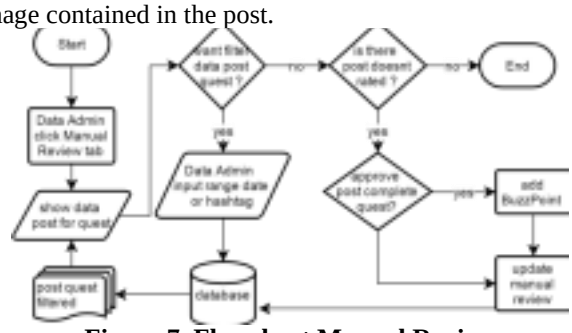

Figure 7. Flowchart Manual Review

Email. If the quest is a mission that must be done on the application, not buzzbuddies such as filling out a survey, it requires an email. Email displays data in the form of quest name, user email, username and date. The process of accepting the completion of the quest by entering the email and quest.

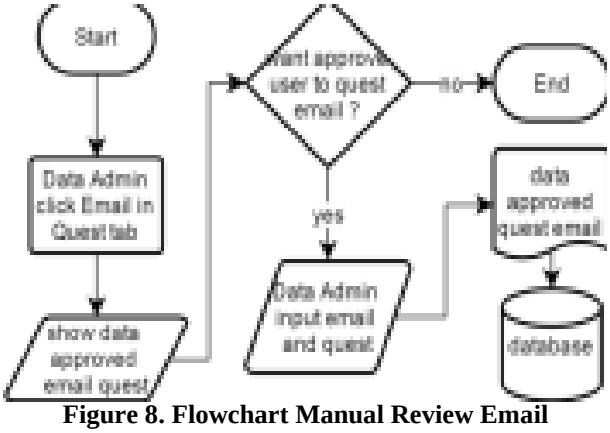

Figure 8. Flowchart Manual Review Email

Hashtags display the hashtags registered for the quest. Admin can add new hashtags or delete hashtags. Referral displays data in the form of quest name, referral, username and date. Views can also be filtered by date. The process of accepting the completion of the quest by entering the referral code and quest.

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Figure 9. Flowchart of Referral Review Manual

Quest displays name, description, type, point, target complete, duration, client, post id, event, hashtag, quest start date and end date in table form. For special quests that are held per event, you can fill in the event column. Duration can be lifetime(one attempt only), daily(per day) or weekly(per week). The same quest can also be held in brackets more than once by inputting a different quest start date and end date. The quest type can be selected based on the engine name. This application does not provide an interface for inputting the engine because the engine is made by a back end developer where if the engine has been developed, the back end developer will directly input the engine name in the database. Quests can be user based or post specific. If the quest is about a certain post, the Data Admin no longer needs to input the client or user. In addition, the quest also has a feature to input new quests and be able to change quest data.

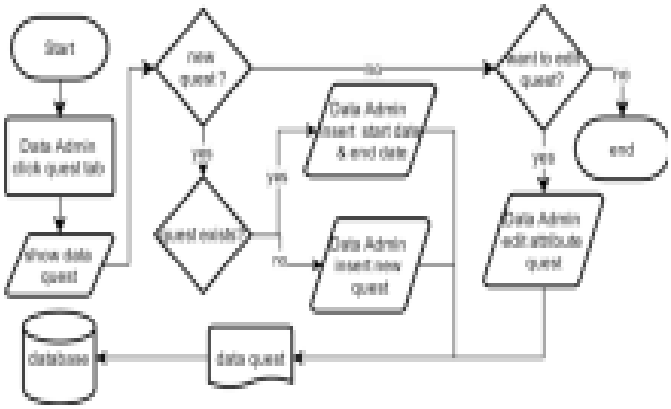

Figure 10. Flowchart Quest

Event displays name, description and active status. In addition, Event also has a feature to input new events and be able to change event data.

g. Redeem is an application that is used to accept redeem requests and manipulate redeem products which consists of 2 parts:

Redeem displays redeem data in the form of the name and email of the redeemer, date, product attributes such as name, image, stock, status, and user attributes. shipping such as the recipient's name, telephone number, address of the product you want to send and the date of the redeem process. Data Admin can approve or disapprove the redeem process. If the redeem is approved, the system will send an approval email and immediately send the redeem product. If the redeem is not approved, the system will send a disapproval email and return the BuzzPoint to the u*ser*.

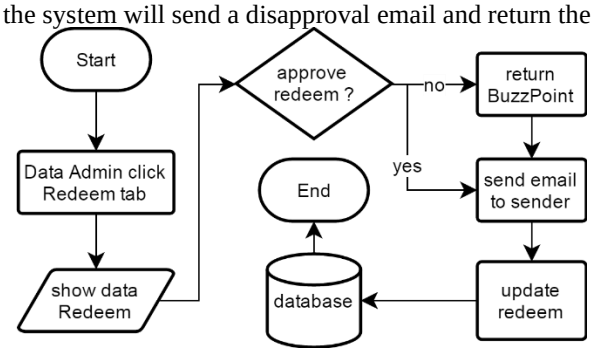

Figure 11. Redeem Flowchart

The product displays the product name, description, image, stock, point redeem and product status. In this panel, the

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Data Admin can edit and input new products that can be redeemed.

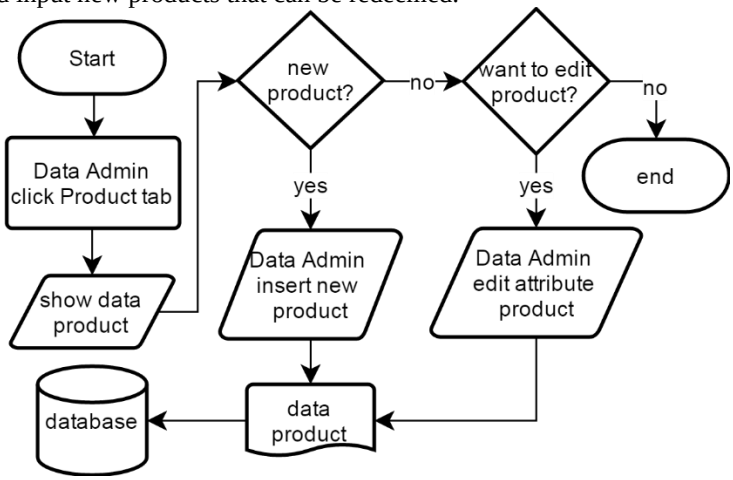

Figure 12. Product Flowchart

CONCLUSION

a. To provide an integrated application with high performance and can work quickly, accurately and stably, the researcher applies full stack web development technology which consists of 3 parts, namely front end, back end and data storage. In this research, the researcher uses Angularjs programming language for the front end, Nodejs for the back end and PostgreSQL as the data storage. This technology also applies the principle of "Loose Coupling, High Cohesion". In addition, this web application is able to increase effectiveness, reduce workload and processing time and improve performance. In addition, the application is also able to provide data for analysis and decision support and is able to manage data rationally

b. Provide an interface that can make it easier to evaluate, agree or disagree that the user has successfully completed the manual review post quest, based on the referral code and email.

c. Provide an interface to facilitate the manipulation of redeem and quest data where the redeem module can evaluate, approve or disapprove the redeem where the system will automatically provide notifications in the form of email Provides a module for suggestions in the form of replying to messages, suggestions and criticisms of Buzzbuddies users integrated with third party mail servers, and a report module that can quickly

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