

## INFORMATION SYSTEM VALENT FOR PT ENSEVAL PUTERA MEGATRADING ON MOBILE USING EXPO

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**Abstract**— Every year, routinely PT. Enseval Putera Megatrading held several events which were held face-to-face and online and involved many parties, from the employees' board of directors and external parties as sources. The events held include: National Work Meeting (RAKERNAS), Mid-Year Work Meeting, Product Launching, EMDP Graduation, Enseval Anniversary, Innovation Forum, and others. There are at least 3 stages that the Event Owner must go through in organizing and achieving the goals of an event, pre-event starting from the formation of the committee to determining the concept of the event that will take place, running events starting from registering participants who are present in the event to maintaining the event's run down, post events ranging from gathering feedback on events to publishing materials. An event management system is absolutely necessary to support the success of the event. Valent, which is a React Native based mobile application, is the right step to answer this need. React native is an application that is used using the JavaScript programming language to create applications in developing applications on smartphones based on Android and iOS. This allows Valent to run on 2 OSes at once (Android & IOS) so that all event participants can enjoy the benefits of the Valent application directly from their respective smartphones.

**Keywords:** Expo, React-native, IOS, Android

**Abstrak**—Setiap tahun secara rutin PT. Enseval Putera Megatrading menyelenggarakan beberapa Event yang dilakukan secara tatap muka maupun online serta melibatkan banyak pihak mulai dari jajaran Direksi karyawan dan pihak eksternal sebagai narasumber. Event yang di selenggarakan antara lain : Rapat Kerja Nasional (RAKERNAS), Rapat Kerja Mid Year , Produk Launching, EMDP Graduation, HUT Enseval, Innovation Forum, dan lain-lain. Setidaknya ada 3 tahap yang harus dilalui Event Owner dalam menyelenggarakan dan mencapai tujuan suatu event, pra event mulai dari pembentukan panitia sampai dengan penentuan konsep acara yang akan berlangsung, run event

mulai dari mendata peserta yang hadir dalam event sampai dengan menjaga run down acara, post event mulai dari mengumpulkan feedback acara sampai dengan publishing materi. Sistem management event mutlak di perlukan untuk menunjang keberhasilan event tersebut. Valent yang merupakan aplikasi mobile berbasis React Native merupakan langkah yang tepat untuk menjawab kebutuhan tersebut. React native merupakan aplikasi yang di gunakan menggunakan Bahasa pemograman javascript untuk membuat aplikasi dalam mengembangkan aplikasi pada smartphone yang berbasis android dan ios . Hal ini membuat Valent dapat berjalan di 2 OS sekaligus (Android & IOS) sehingga seluruh peserta event dapat menikmati manfaat aplikasi Valent secara langsung dari smartphone mereka masing-masing

**Kata Kunci:** Expo, React-native, IOS, Android

### INTRODUCTION

PT. Enseval Putera Megatrading is a multinational pharmaceutical company which has its head office in Jakarta, Indonesia. PT. Enseval Putera Megatrading was built in 1972 and manufactures many pharmaceutical items. In its development, PT. Enseval Putera Megatrading has grown into general distribution, not only in the pharmaceutical field, but consumer products and medical equipment and is actively working as an agent and distributor of raw materials for the pharmaceutical, cosmetic, and food industries. Along with Indonesia's economic growth, PT. Enseval Putera Megatrading also carries out verification in many businesses outside trading and distribution.

PT Enseval Putera Megatrading divides its business into 4 sales departments:

1. Department of Pharmacy distributes Prescription Drug Products and Medical Devices to (Hospitals, Health Centers, Pharmacies, and Clinics)
2. Kalbe Nutrition Distribution Department (KND), Distributes Dairy Products to

- (Hypermarkets, Supermarkets, Minimarkets, and Dairy Stores)
3. Department of Consumer Health Distribution (CHD), Distributes Medicinal Products without Prescription & Multivitamins to (Hypermarkets, Supermarkets, Minimarkets, Pharmacies, and Drug Stores)
  4. Department of Health & Consumer Beauty (CHB), Distributing Beauty Products (Hypermarket, Supermarket, Minimarket, Pharmacy and Drug Store)

Every year, regularly PT. Enseval Putera Megatrading held several events that were held face-to-face involving many parties, from the employees' board of directors and external parties as sources. The events held include National Work Meeting (RAKERNAS), Mid-Year Work Meeting, Product Launching, EMDP Graduation, Enseval Anniversary, Innovation Forum, and others. There are at least 3 stages that the Event Owner must go through in organizing and achieving the goals of an event, pre-event starting from the formation of the committee to determining the concept of the event that will take place, running events starting from registering participants who are present in the event to maintain the event's run down, post events ranging from gathering feedback on events to publishing materials. An event management system is necessary to support the success of the event. With the creation of the Valent PT Enseval application to support that success, the Valent application can be used by all employees, so Valent is made on Android and iOS.

To support Enseval employee satisfaction in the Valent application, a research method was held using a survey method. By using the survey method, the Valent application can contain the functions needed to support the success of the National Meeting

There is previous research, among others, entitled "Rancang Bangun Aplikasi Point of Sales Distro Management System Dengan Menggunakan Framework React native" (Wiguna, Swastika, and Satwika, 2019) wherein this research React native is used to creating web-based applications that are used for business ventures. Distro (Store Distribution). By utilizing the React Native framework, making the Point of Sales Distro Management System application is easy to create and because the React Native framework is open source, making the application is free of cost.

Another study entitled "Pengujian Usability System Framework React native Dengan Expo Untuk Pengembang Aplikasi Android Menggunakan Use Questionnaire" (Yunandar and Priyono, 2018) which in this study was used to develop android-based applications to create questionnaire applications using the react native

framework with Expo tools. The results showed that by using the expo tools, application development can run faster because several libraries, tools, and services have been provided by the expo and also do not have to.

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Based on previous research, making mobile-based applications using the React Native Framework using the Expo tool makes it easier to create the application and can make the application free of cost so that it can reduce the total cost of all the needs in making applications and also by using react-native the application can be made based on android and also iOS with a little modification in the code.

React native is an application that is used using the JavaScript programming language to create applications in developing applications on smartphones based on Android and iOS. (Zammetti, 2018) "React native is an application development framework in which you use standard web technologies (or, in some cases, something similar to standard web technologies) to build your application. That means HTML (sort of, as you'll see in a bit), JavaScript, and CSS (again, sort of). React native is based on Facebook's React framework, a popular web development framework. The critical difference between the two is that plain old React targets web browsers, whereas React native (typically, although it technically can target web browsers as well) does not (despite the aforementioned use of web technologies)". (Paul & Nalwaya, 2019) "React Native is an open-source platform for developing native mobile applications; it was developed largely by a team at Facebook. The cool part of working with React native is that your program uses standard web technologies like JavaScript (JSX), CSS, and HTML, yet your application is fully native. In other words, your application is blazing fast and smooth, and it is equivalent to any native application built Using traditional ios technologies like Objective-C and Swift. However, React native does not compromise in terms of performance and overall experience, like popular hybrid frameworks that use web technologies to build ios apps" The

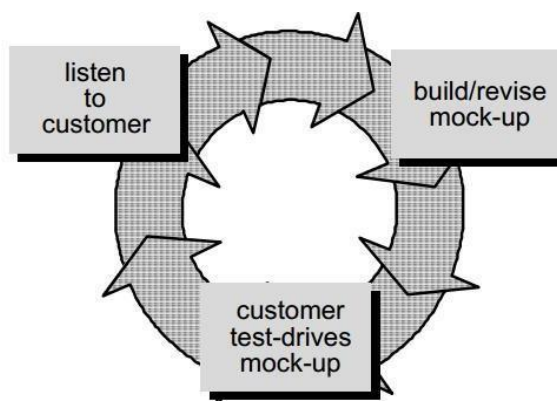
Expo framework is a tool that can be used in the use of React Native. By using the expo framework, the user does not need to create several libraries, tools, and services because they have been provided by the expo. So that users don't need to use Android Studio and Xcode to build React Native applications.

Researchers analyzed several other frameworks outside React Native. These frameworks include: 1) Flutter; 2) Ionic; 3) PhoneGap; 4) Xamarin; and 5) mobile angular UI. Flutter is a framework created by Google that uses the Dart programming language to create cross-platform applications. According to Frank Zammetti "Flutter is a platform that provides a means for you to write a single code base (more or less) that works on Android and iOS equally well while delivering native performance and native capabilities"(Zammetti, 2019). Ionic is a framework used to create hybrid applications that support Angular material design. according to Ravulavaru "Ionic is one of the most widely used mobile hybrid frameworks. It has more than 17,000 stars and more than 2,700 forks on GitHub at the time of writing this chapter. Ionic is built on top of AngularJS, a superheroic framework for building MVW apps."(Ravulavaru, 2015), Meanwhile, according to Cheng "Ionic framework is not the only player in hybrid mobile apps development, but it's the one that draws a lot of attention and is recommended as the first choice by many developers" (Cheng, 2018). Phonegap is a framework for creating cross-platform applications using the API web tool. According to Olowu "PhoneGap is a hybrid application framework that enables you to build native applications using HTML and JavaScript" (Olowu, Sundararajan, Moghaddami, & Sarwat, 2018). And according to Myer "PhoneGap is an "HTML5 app platform that allows you to author native applications with web technologies."(Myer, 2011) And according to Andrey "PhoneGap is a distribution of Apache Cordova. PhoneGap can be considered as a shell for Cordova technology and provides the great infrastructure for maintenance and distribution."(Kovalenko, 2015). another example of a hybrid framework is Xamarin. According to Leibowitz "Xamarin.Android allows us to create native Android applications using the same UI controls we would use in Java, with the flexibility of C#, the power of the .NET Base Class Library, and two first-class IDEs."(Leibowitz, 2015) and according to Nayrolles "Xamarin Studio is a cross-platform integrated development environment. It is works across platforms in two ways: the IDE is available on Mac OS and Windows (no Linux support announced), and it allows the development of software for Mac OS, iOS, and

Android."(Reynolds, 2015) and the last framework application is mobile angular UI according to Seshadri" Truly, what makes Angular a great technology and framework is the community around it—those who contribute to the core framework, or develop plug-ins for it, as well as those who use it on a day-to-day basis." (Seshadri, 2018) Mobile angular is a framework that uses the angularjs framework to create applications and according to ray agularjs is "The AngularJS is a framework of JavaScript. It can use HTML as a template language and can extend HTML's sentence structure to state an application's components plainly and briefly" (Yao, 2020) . With the many hybrid frameworks that have been mentioned, the researchers chose to use the React native framework because by using React Native researchers can update applications even though the server is running and React Native also has application design because React Native has many tools that help design with the Enseval Event information system or This VALENT can make it easier for employees at PT ENSEVAL PUTERA MEGATRADING. in participating in the activities in the company's Rakernas

**MATERIALS AND METHOD**

The system design method used in the construction of Valentines and work results recap is Prototyping. According to Pressman "Metode Prototyping mengerjakan pengembangan atau rekayasa perangkat lunak secara bertahap dan berulang, dengan mementingkan kebutuhan user/client. Pengembang dan client dapat terus berinteraksi didalam setiap tahap metode Prototyping". (Pressman,2001) . The stages of the Prototyping method can be seen in Figure 1.



Source: (Pressman, 2003)  
Figure 1 Prototyping

As in Figure 1, in the Prototype process is to listen to customers, build/revise

mock-ups, and customer test-drives mock-ups. The first stage is to listen to the customer, which is knowing information about the user's needs to be implemented in the system, such as what features are needed in the VALENT app. The information that has been obtained is then analyzed and translated into the system. The second stage in the prototyping model is the build/revise mock-up. At this stage, the design is carried out quickly and represents all known aspects of the software. This design becomes the basis for making the prototype. The third stage is customer test-drives mock-ups. At this stage, the client evaluates the prototype that has been made. All these processes are repeated until the application is designed according to demand.

The process in system design uses the Unified Modeling Language (UML) diagram, namely use case diagrams and class diagrams.

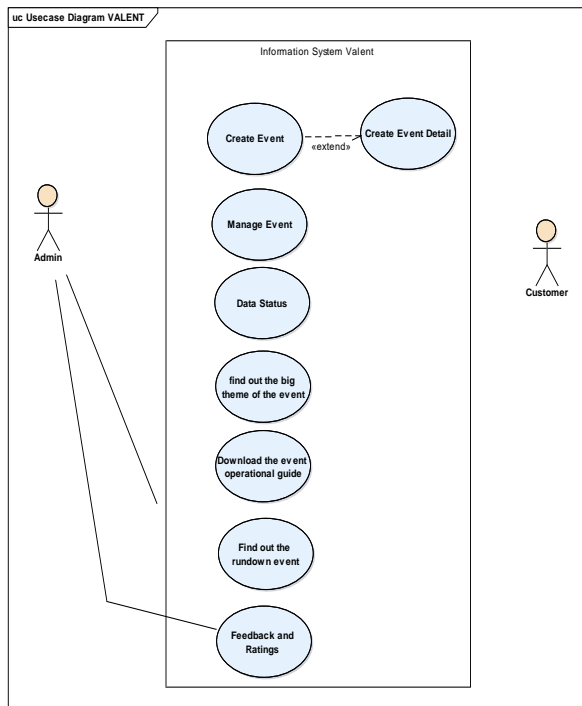


Figure 2 Usecase Diagram VALENT

As shown in Figure 2 in the VALENT application, there are 2 users, namely Admin and AD User or Employee. The admin is tasked with entering or editing events, creating or editing event details, deleting comments, creating delete status/chat, and creating/deleting comments. Meanwhile, AD users are tasked with creating/deleting comments, making like statuses, editing feedback

and ratings, creating a bio, changing photos, and downloading materials

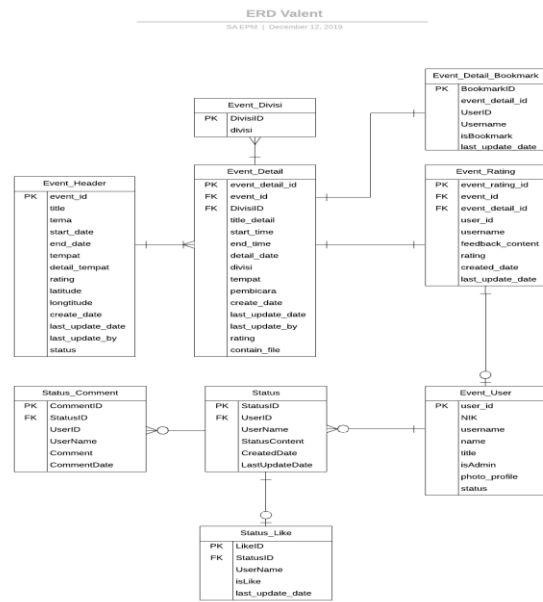


Figure 3 ERD Valent

Figure 3 is the ERD used in the Valent application. In this class diagram, 7 classes will be used by the system and each class has components in the form of attributes and operations needed to create tables in the system database. Each class has its foreign key and primary key, the relation used is one-to-many, one class can relate to many classes, for example, the detail event class can relate to the division event class.

RESULT AND DISCUSSION

Below are the results of the Valent application that has been made based on the Prototype Method.

A. Listen To Customer

2 customers ask for the Valent application.

What is asked by the customer (admin) is

1. Admin can add events, include the big theme of the event, the time of the event, to the location of the event.
2. Admins can upload the event operational guidelines as a guide for event participants.
3. Admin can fill in the details of the event rundown.

Meanwhile, the customer (user) requests that

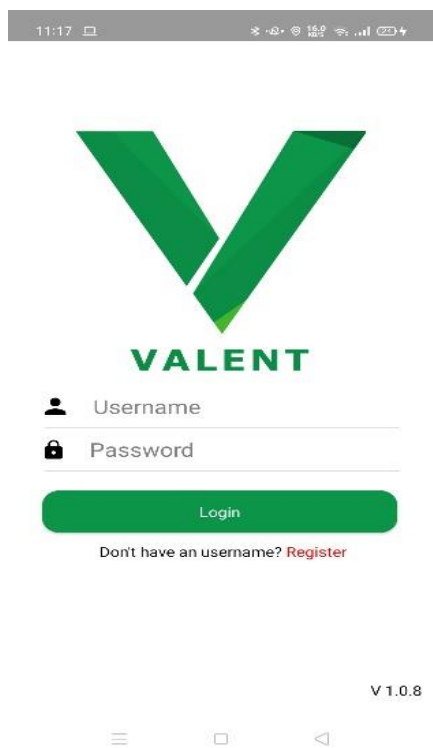
- B. Participants can interact with each other in the application for an ongoing event.
- C. Participants can find out the big theme of the event, the timing of the event, to the location of the event
- D. Participants can download the event operational guide
- E. Participants can find out the rundown event



F. Participants can provide feedback and ratings in each session

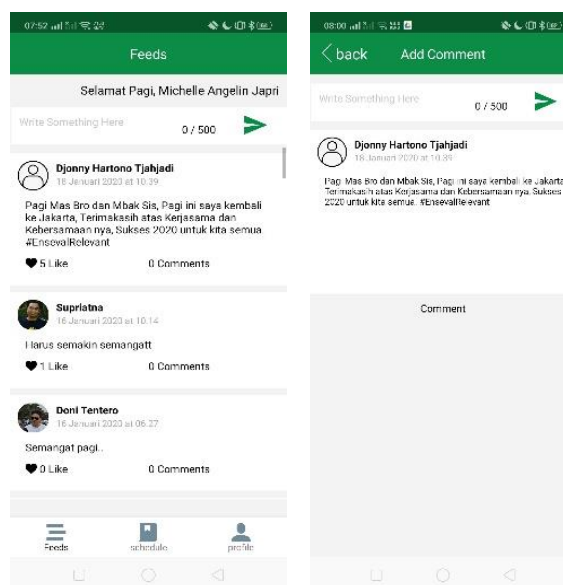
**G. Build/Revise Mock-up**

This VALENT application is an online application because all data is received/sent to the SQL server using the API web service. There are 2 user users, namely the employee user or admin user in the admin user, the admin can add events that will be carried out on the add header page and can enter the details of the activity from that event in the added detail admin function can also turn off or turn on events that have been finished or will start in the manage event menu. Also, the admin user can do everything that employees can do, such as chat, rating, and download the materials provided at each event or activity. This is the result of the implementation starting from the login page which can be seen in Figure 4 below



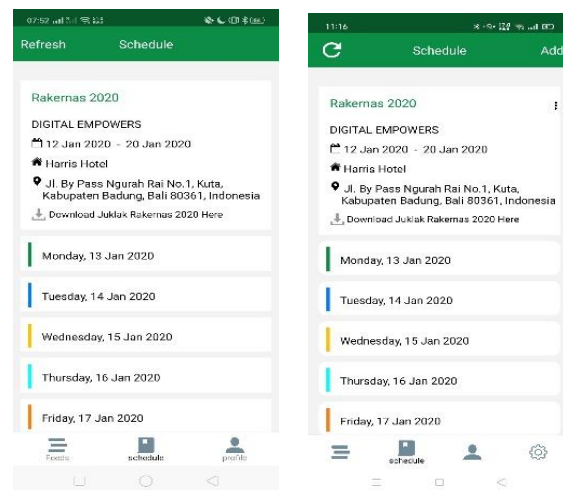
**Figure 4** Login Page

As can be seen in Figure 4 above in the login page after the user is divided into two roles, namely employee or admin. The admin is tasked with managing, adding, or deleting events that take place after user login and admin will go to the first page or feed page which contains chats and comments and also likes all users who are in the employee meeting and the admin can also edit or delete the comments and chat from the user himself, all the core data is stored and retrieved from the SQL server via the web API service as can be seen in Figure 5 below.



**Figure 5** Feed and Comment Page

Then next to the feed page, there is a schedule page that contains the name of the event and the schedule of activities on the event page, where the user and admin can see the name of the ongoing event, the date the event took place, and where the event took place. Here also the user (especially for admins), there is a menu to be able to edit events or add events or delete events as can be seen in Figure 6 below (left of ordinary users and right for admin)



**Figure 6** Schedule Employees, and Admin Page

In the add header page the admin can fill in the name of the event, the theme where the event starts, the start date, the end date, there is a download of the material or not and on the page, there is also a google map view to be able to ascertain its location as can be seen in Figure 7 below.

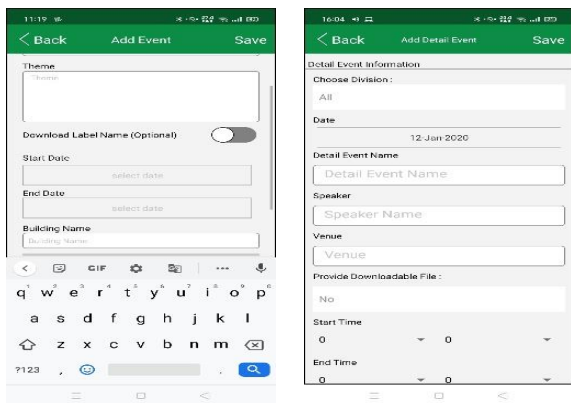


Figure 7 Add Header (Admin only) page and Add Detail (Admin only) page

In the schedule as well for the admin section, there is an option to add event details to add details of the activities carried out per day at the event based on the division in the company in the added detail also contains the date of the detail

name, the name of the speaker, where there is a download of the material or not, time start and end hours. In the schedule page, if the day and date are clicked under the event, the user (employee or admin) will enter the detail page on the detail page, the user can filter all their activities based on their division or not filtered at all and in the admin, admin section can edit or delete activities. Users (employees and admins) can give a rating if they click the rating button in the rating button, the user can provide a rating and feedback on each activity, and if the user wants to see what ratings and feedback from other users, the user can enter the rating view page. In the view rating page, the user can filter the number of ratings and feedback that the user can see. Also, they can activate notifications for each activity if they press the bell button. If the user activates the notification, the user will get a notification for the activity 1 hour before the activity takes place, the results of the page can be seen in Figure 8 below.

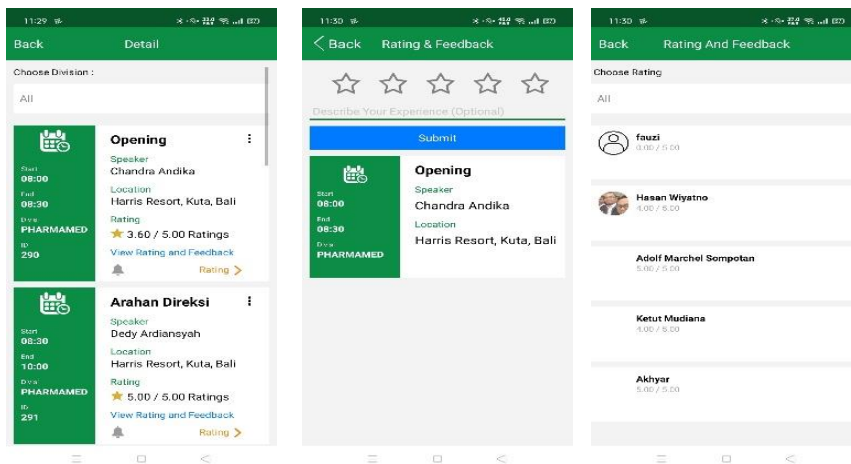


Figure 8 Detail Page, Rating & Feed Back Page and View Rating Page

Then after that, there is a profile page that is in the user (employees and admin) on the profile page, the user can change the profile photo from the camera or photos in the gallery. The user also edits the bio and phone number according to what the user likes, the logout button is at the bottom of the profile page as shown in Figure 9 below.



Figure 9 Profile Page

Then this last page is only available for admin users, namely the manage events page. On the manage event page, the admin can see all the events that the admin has added and can turn these events on or off. If the event is turned on, it will appear on the schedule page and vice versa. The manage event page can be seen in Figure 10 below.

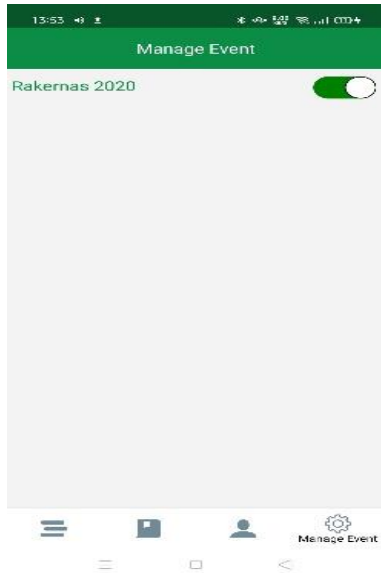


Figure 10 Manage Event Page (Admin only)

H. Customer Test Drive Mock-up

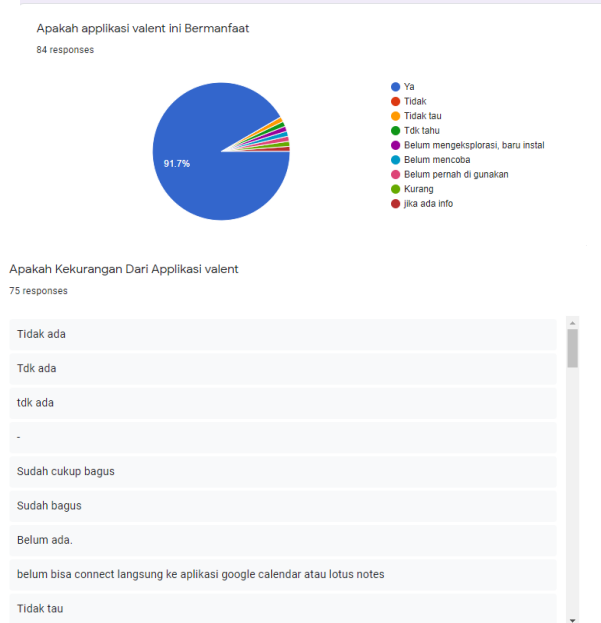
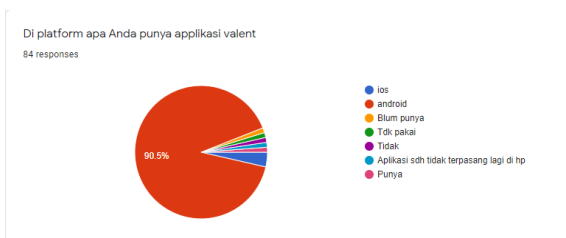
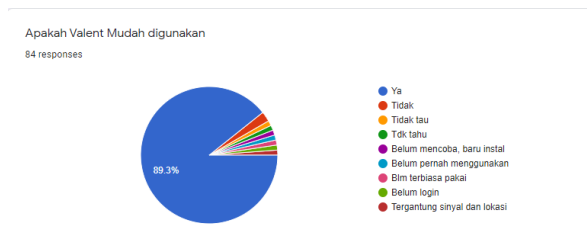


Figure 11 Questionnaire data results

Based on the results of the questionnaire from Figure 11 above, it can be concluded that:

1. 90% of Valent users use the Valent application on Android
2. Nearly 90% of users of the Valent application say that Valent is easy to use
3. 90% of users said that the valent application was very useful
4. A small proportion of respondents hoped that the Valent application could be integrated with the Google Calendar / Lotus Notes

According to the results of the questionnaire distributed, most were satisfied with the Valent application that was built on the React Native framework, although only a small proportion of iOS users at PT Enseval could still feel the benefits of using the Valent application at the 2020 RAKERNAS event.

CONCLUSION

Based on the test results, it can be concluded that the Valent application has run as desired and will be upgraded again at a later time so that it can be used for various kinds of events in PT ENSEVAL PUTERA. not only used for National Working Meeting events. And it can also be updated in the division of the division so that it can be sorted by the division before entering into the application so it can help workers see information about all events at PT ENSEVAL.

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