

# DESIGN AND IMPLEMENTATION OF THE ASSESMENT OF PUBLIK OFFICERS WEB BASE WITH GAMIFICATION METHOD

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**Abstract**— Utilization of technology information for the information fulfillment is still being developed today. The former data were written in paper are changing digitally to develop the ease in accessing them. Digitally formed, these data can be developed to become one system that can assist people in acquiring the information about the public officers who hold their position. Not only anyone can access this system anywhere; but also they can interact with the public officers easily. Problem arises today, such as the ineffectiveness of the public officers' performance as the people are not well informed about their duties and responsibilities particularly. Minimizing the problem, people can evaluate the public officers' track record during holding their position easily through a system referred to as Indonesia United Democracy (IDUN Democracy). This design tries to establish the management system assessment of the public officers in the Indonesia United (IDUN) Democracy. These assessments are conducted on the activities undertaken by the public officers, such as work visit, work meeting, study tour, and monitoring to the area of the people who is led and represented. Therefore, the people will know more about their public officers are able to work well as their representatives. The assessment process can be carried out through the assistance of computer and smart phone.

**Keywords**— the system of public officers, indonesia united democracy, idun, monitoring, public officers performance, crowdsourcing, gamification

## I. INTRODUCTION

Currently *gotong royong* culture is starting to fade or forsaken by some indonesians, particularly in the area of urban. Gave rise to so many problems with residential area and gives rise to the difference between the itself.

*Gotong royong* having the understanding that every individual in such a condition of any kind there must be a willingness to participate active in adding value or positive to any object, the problems or the needs of the many all over his life. Active participation they could aid in the form of

who are made of material, financial, physical exertion, mental spiritual, skills, contributions the mind or constructive advice, until only prayed to the lord.

One of the problems occurring at present time is losing confidence in the democratic process. Democracy is a very important matter for human beings especially in decision-making to change its future. Democracy allow people state of participating, either directly or through representatives, to the formulation, the development, and law making. Covering the condition of social democracy, economic, cultural practices and allow the presence of political freedom and equal freely. Almost all human activity must be managed well.

Problems that arise at this time in the community is not yet functioning of communication between public officers with the people in the regions that represented and he leads, so that the community never know the policy taken and decided by public officers, the community could not monitor about the performance of public officers chooses in the decision-making process, the decision-making process enough hastily of public officers of the people so disrupting the people, still the bad performance of public officers, often inharmonious hind vice the people interests with the needs of the people, public officers have not perform its function well in accordance with the will of the people, still often occurs public officers become an enemy of the people party because his political interests and still not pay the community role in controlling policy of government.

## II. THEORY

### A. Community and Crowdsourcing

Community in the digital era again become important element in life state. The community can be defined as a bunch of people, organisms living in certain areas that have the same purpose. Contributed to participate in the context of democracy in the process, the community can be one part

of a model called the partnership with quadruple helix partnership. Quadruple helix is the development of the triple helix as a model analysis of the development of new innovations. Involving cooperation between the government triple helix, business doers, and the university (academics) in making an innovation. Model quadruple helix added an element which is increasingly important, namely community.

Crowdsourcing is the process of getting work or funding, usually online, from a crowd of people. The word is a combination of the words 'crowd' and 'outsourcing'. The idea is to take work and outsource it to a crowd of workers.[2]

crowdsourcing Is a business or an act done by a person or organization to get the service, an idea or content that needed to offer him to the community through the internet, both in return for certain or not.[3]

## B. Gamification

gamification as the process of using game thinking and game mechanics to engage audiences and solve problems.[1]

Gamification is a way of using game mechanics (e.g., competitive challenges, recognition and rewards) to improve a business process, with the goal of fulfilling business objectives.

The key elements of gamification programs include an objective, a mission, gaming components (badges, level, players, chalanges, and leader boards) and a well-thought-out design.

Gamification is the use of game elements and game design techniques in non-game contexts, such as health, education, politics, public sector, and business. It was an emerging new brand concept in the past couple of years.

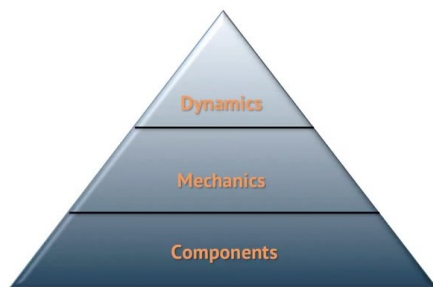


Fig.1 Pyramid of gamification elements

Figure 1 above describe the pyramid of gamification elements. On the highest level, there is dynamics level which is the conceptual level, where the constraints, emotions, narrative, progression, and relationships of gamification been decided. The second level is the mechanics level which describe as processes that drive action forward, such as challenges, chance, competition, cooperation, feedback, resource acquisition, rewards, transactions, turns, and win states. Lastly, on the lowest level, there are components,

define as specific instantiations of dynamics and mechanics, such as achievements, avatars, badges, boss fight, gifting, content unlocking, leaderboards, levels, points, quests, social graph, virtual goods, etc.

## C. Gamification Design Framework

There are some steps we need to know when designing a gamification system. Here are the six-step of gamification design framework as described by K. Werbach and D. Hunter [4]:

1. Define business objectives
2. Delineate target behaviors
3. Describe your players
4. Devise your activity loops
5. Don't forget the fun
6. Deploy the appropriate tools

## D. Performance evaluation

Performance evaluation which is also known to the term performance evaluation of the performance of appraisal, is a process that used by the organization to evaluate the performance of job. Thus, performance assessment is systematic study about the working conditions of employees that have been carried out in a formal manner who is associated with the standards which have been determined the company [5]. Performance evaluation of a person (performance evaluation) was a process used by an institution / company to evaluate the performance of job.[6] Of the above analysis it can be concluded, that performance is achievements by someone in managerial perform tasks in an institution he leads.

Public officers is a person appointed and given a task to occupying position or a certain tenure in public body. The assessment of the performance of public officers have the sense that the process of evaluation conducted by organizations that have labor standards which have been determined for someone who is appointed and given a duty in his tenure.

# II. DESIGN

## A. Acquisition of information

The acquisition of information is the process of capturing all relevant information. To meet the needs of information that has been determined , indonesian united democracy products apply two strategies acquisition of information, that is by using public participation (crowdsourcing), in a gotong royong. Publicly-listed information means that of the main indonesian united democracy products is through community participation (crowdsourcing). Indonesian internet community could participate in additional information about the offender politics and political event. To be able to attract the interest of the public to participate

Gamification become important used in indonesia united democracy to pull the community to participate in the democratic process that lasts, now the Gamification needed inside indonesian products united democracy is as:

- Six things to above needed to improve use of indonesia united democracy which affect to enrich data and information and effective interaction between users and system.

1. rule : is an order for the runway in a game, usually the rules is used to explain what can be done and not done by the user
2. feedback systems : reciprocal of return obtained by the user when it has reached or finishing something. Regular feedback systems and associated with a gift
3. goal : points is the main thing to be achieved by the user, can only be definition by goal and two pieces of multiple and single just different from the side of the amount should rise, usually when the user has reached goal and a game challenge expressed over
4. challenge : is a challenge to test the level of proficiency users, and become an important component in the formation of the game

TABLE I  
GAMIFICATION DESIGN

<b>Rules :</b> - user action - rules of the game	<b>Feedback</b> - bonus - domain learning
<b>Goal :</b> - gameplay - goals to be accomplished	<b>Challenge :</b> - domain problem - progress user

The following are use case identified in the web portal indonesian united democracy. Use case mentioned above can be described into the form of an use case diagram as follows.



All objects in Indonesian United Democracy Systems stored in one database that can be considered into parts to simplify information in this book. Any object in class having relation by objects on class another by contact in accordance with the concept of relational database management system (RDBMS). [7]

```

classDiagram
    class Posting_Vote {
        + Id : int
        + Id_Post : int
        + Id_User : int
        + IP_Address : string
        + Insert () : Boolean
        + Update () : Boolean
        + Delete () : Boolean
    }
    class User {
        + Id_User : String
        + Username : String
        + First_Name : String
        + Last_Name : String
        + Mail : String
        + Password : String
        + ReType : String
        + Gender : String
        + BOD : DateTime
        + Address : string
        + img_url : string
        + Point : int
        + Posting_Point : int
        + Leveling : string
        + img_level : string
        + Identity_No : string
        + img_Identity : string
        + Insert () : Boolean
        + Update () : Boolean
        + UpdatePoint () : int
        + UpdatePosting () : int
        + UpdateLevel () : string
    }
    class Posting {
        + Id_Post : int
        + Id_User : int
        + Id_Pejabat : int
        + Posting_Title : string
        + Posting_Type : string
        + Message : string
        + Posting_Date : DateTime
        + Event_Date : DateTime
        + Place : string
        + Longitude : decimal
        + Latitude : decimal
        + Image_Url : string
        + Video_Url : string
        + Lied : int
        + Disliked : int
        + View_Sum : int
        + Month_Sum : int
        + Insert () : Boolean
        + UpdateLike () : int
        + UpdateDislike () : int
        + UpdateJmlPost () : int
        + UpdateViewSum () : int
    }
    class Partial {
        + Id_Partial : int
        + Partial_Name : string
        + img_url : string
        + Insert () : Boolean
        + Update () : Boolean
    }
    class Pejabat {
        + Id_Pejabat : int
        + Id_Partial : int
        + Officer_Name : string
        + Position : string
        + Institution : string
        + Period : string
        + Region : string
        + area : string
        + Img_File : string
        + Insert () : Boolean
        + Update () : Boolean
    }
    class Pejabat_Detail {
        + Id_Pejabat : int
        + Lied : int
        + Disliked : int
        + Jml_post : int
        + img_Status : string
        + UpdateLike () : int
        + UpdateDislike () : int
        + UpdatePost () : int
        + UpdateJmlStatus () : int
    }
    class Comment {
        + Id_Comment : int
        + Id_Post : int
        + Id_User : int
        + Id_Pejabat : int
        + Comment : string
        + Comment_Date : string
        + Insert () : Boolean
        + Update () : Boolean
    }
    class User_Detail {
        + Id_User : int
        + Work : string
        + Position : string
        + Type of business : string
        + Education : string
        + Ladders : string
        + Years : string
        + Insert () : Boolean
        + Update () : Boolean
    }
    Posting_Vote "0..*" -- "1..1" Posting
    User "0..1" -- "0..*" Posting
    Posting "0..*" -- "0..1" Pejabat
    Partial "1..1" -- "1..1" Pejabat
    Pejabat "0..1" -- "0..1" Pejabat_Detail
    Comment "0..1" -- "0..1" Posting
    Comment "0..*" -- "0..1" Pejabat
    User "0..1" -- "0..1" User_Detail
  
```

### Activity Diagram

Below can be described activity diagram of each scenario based on use case and class diagram.

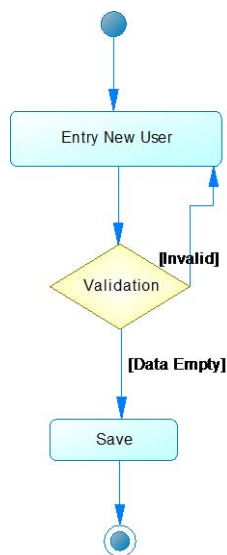


Fig. 4 Registration Activity diagram

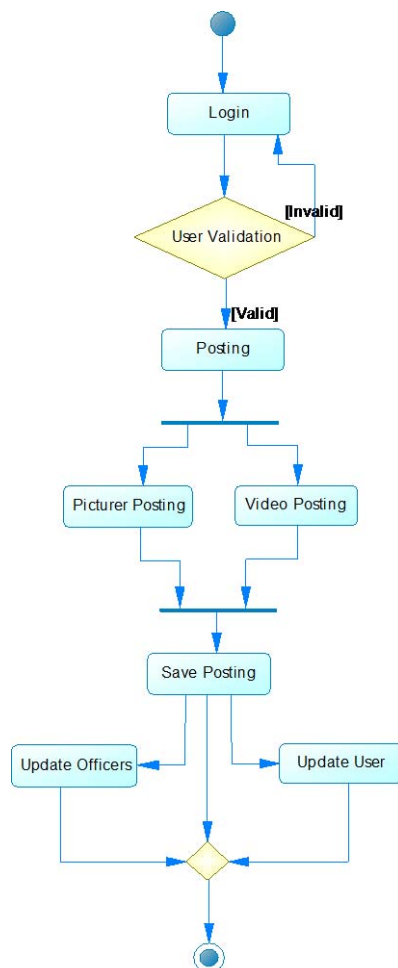


Fig. 5 Posting Activity diagram

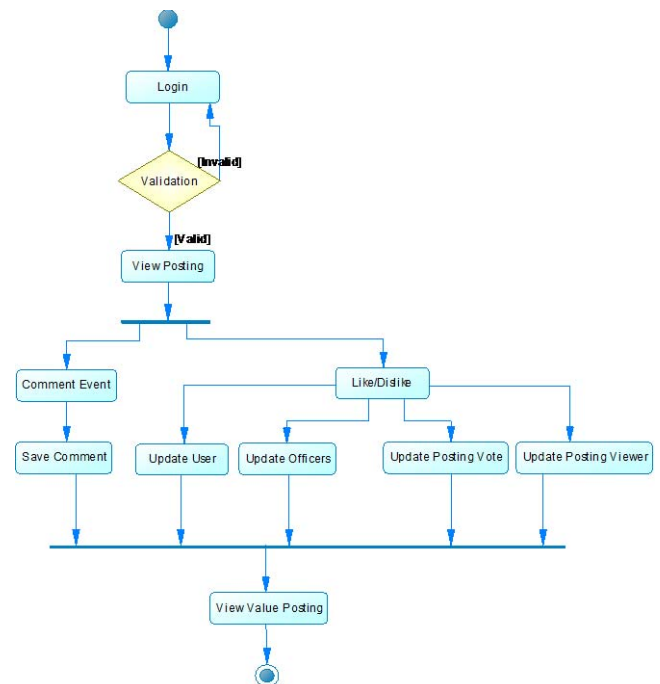


Fig. 6 Assesment public officers Activity diagram

#### IV. IMPLEMENTATION AND TESTING

A web portal indonesian united democracy has been implemented on the control systems computer server lab ( lskk ) electrical engineering STEI ITB, to the address <http://indonesia-united.org> : or <http://idun-demokrasi.lskk.ee.itb.ac.id>. A web portal indonesian united democracy can be accessed via the internet with a web browser.

##### A. Dashboard

This serves as the initial information services for users can use the application of common to. Where there are some features in : search activity consisting of any public officer, search officials based on public office and the regions, the list of public officers with 4 equipped type of official criteria, complainants idun with the highest point and idun user with 4 equipped kind of folk, a symbol for idun officers and the people, and post 's most popular and view posting for like/dislike and comment.



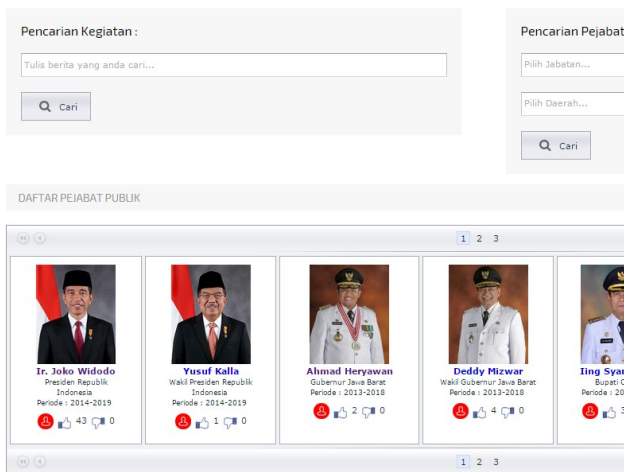


Fig. 7 List of Public officers notification and like/dislike value



Fig. 8 Notification of Public officers



Fig. 9 Notification of Idun Community



Fig. 10 Image Popularity

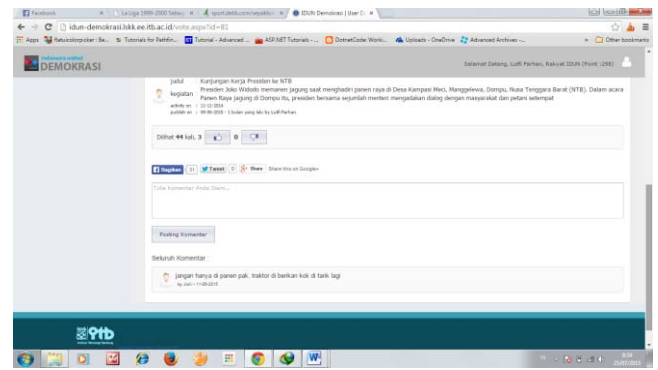


Fig. 11 View Posting for Like/Dislike and Comment

## B. Timeline official activities

This service activities showing timeline public officer who uploaded to in application by users who have enrolled in show in the form of marker in google map, furnished with the search activities based on the date

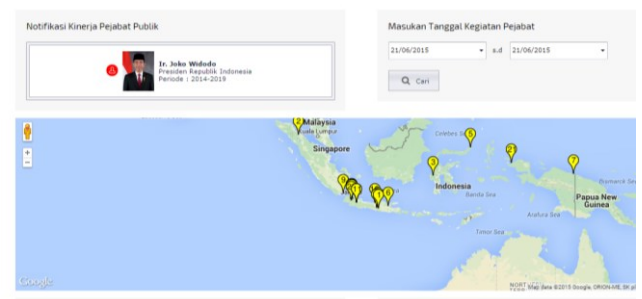


Fig. 12 Timeline officials Activities with marker on GMap

## V. CONCLUSION

The main purpose of the design and implementation is to develop the fulfillment of media information about the performance of public officers openly for the information in indonesia. As for the conclusion of the design is as follow:

1. already successfully designed a scoring system to assess the performance of public officer with the name of Indonesia united democracy
2. have built a prototype that has its advantages and conveniences in two-way communication process between the community and public officials, user registration, upload pictures and videos, but it is still incomplete in the distribution of public officials by institution (*executive, legislative and judicial*) and by region
3. A web portal indonesia united democracy as the fulfillment of a public officer information has been implemented and run with domain names idun-demokrasi.lskk.ee.itb.ac.id
4. Crowdsourcing system of indonesia united democracy can be running, shown with the number of users and

activities users are quite high in the initial launch of the site

5. Indonesia united democracy can meet the needs of general information about the performance of public officers
6. Indonesia united democracy may fulfill the information of the public officers at the public so that the proper information about activities public officer to be fulfilled
7. With gamification method, system would provide feedback to the public of the performance, a lot of user and the number of the people.

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