APPLICATION ANDROID JOBFIT : INTELLIGENT SYSTEM RECOMMENDATIONS JOBS BASED ON CRITERIA AND LOCATION

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ABSTRACT

Unemployment rate from has increased year by year, the city of bandung is one of the city who figures pengangguranannya quite high namely by around 12 thousand since the year 2014 .In 2014 bandung residents are unemployed a total of 95 thousand people .While untill the end of 2015 meingkat become 107.565 people .A lot of influence the level of unemployment increase .Factors faktornya is economic growth and lack of information a vacancy that is in accordance with the criteria of the lack of information as well as address the office that opens a vacancy .This is necessary to establish an application jobfit: intelligent system for the recommendation of job vacancies based on the criteria and the location of. Used a technology of gps on a platform android Information to help a vacancy for users in the city of bandung

Keyword : Android,GPS,Jobs.

1. INTRODUCTION

The unemployment rate from year to year increases, Bandung is one of a number high enough pengangguranannya about 12 thousand since the year 2014. In the year 2014 bandung citizens who do not have jobs totaled 95 thousand people. While until the end of 2015 rising to 107,565 people. Much of the influence of tinggat increasing unemployment, the main Factor was the economic growth by the year 2015 is indeed in a time of sinking.[1]

Based on research and the dissemination of questionnaires conducted researchers of 99 people, the correspondent of 81% experienced constraints in search of work in the city of bandung, including lack of information about job vacancies that open Office.

The results of interviews with company cv mutiara timur , the owner job opportunities sometimes trouble getting worker who in accordance with the criteria needed so that the quality of workers less than optimal with sophistication available.

Android is a software stack for a mobile device.In which there is an operating system, middleware, and key application.An application as on this platform developed in programming language java where in a cell phone based anroid having features with global positioning system (gps) that can be used to inform geolokasi current .platform android users can also in integrasikan with google maps fire offer ease in building application requiring data geolokasi and the ability in providing a map quite full.

Some companies large and small in indonesia to provide information available job opportunities through the printed media like newpaper , some also announced a vacancy from the notice-board as well as via electronic media including the internet .Job vacancies the most widely sought by job seekers is vacancy latest work and have not the end of the time registration last .This will be difficulties for job seekers if the implementation mechanism of information management job vacancies from related companies are not going well .

Until now has employers who have used technology to inform job opportunities to job seekers some companies have utilized the job opportunities going on with the internet.Information system job opportunities there are still use search based on each attribute demand and there is not yet data processing the profile of employers and job seekers.This would make it difficult for employers in filtering candidates a suitor who apply.Although many applicants who proposed job application, but only a few a suitor who in accordance with the provisions company.Is because information system the job opportunities have not use profile data job seekers and employers to obtain recommendation job seekers best and job opportunities in accordance with their interests job seekers.

Look of the data department of labor bandung city and kuisioner that has been in spread and by the development of very quickly in section of technology and information in the community bandung city this can become trigger in big application named“the android application jobfit: system smart to recommendations job opportunities based on the criteria and the location of ‟ that can be mewadahi information relating to an office that opens a vacancy a job in the greater bandung seekers work that is appropriate criteria required the owners of the job opportunities

Mean from the study is to build application jobfit: system smart to recommendations job opportunities based on the criteria and the location of based android .As for the purpose of this research is as follows:

1. Facilitate users find the information job opportunities
2. Help users to get a job in accordance criteria desired
3. Facilitate communication between job seekers and the owner of job opportunities
4. Help with user's Guide and refer to the location of Office/food owner jobs.

2. The Contents of research

2.1 Operating system android

Android is an operating system for linux-based mobile devices that includes an operating, middleware and applications. Android provides an open operating system for developers to create applications for android is released to the public in 2008. Android is very rapidly growing industry because the two main aspects of IE are opensource and arsitekturya models. As a project that is opensource, Android allows for fully understood and analyzed regarding features, settlement on the bugs of the program to the hardware [2] .

2.2 *Global Positioning System*

The global positioning System is a satellite-based navigation system made up of a network of 24 satellites placed into orbit by the United States Department of defense was first introduced in 1978. GPS services formerly used only for military purposes but are starting to open to the public. 24 GPS satellites that are approximately 12,000 miles above the Earth is moving around the Earth in 12 hours at speeds of 7,000 miles per hour. GPS satellites measuring the energy of sunlight, have a battery backup to keep running at the time of the Eclipse of the Sun or at a time when there is no solar energy and has a small booster rocket on each satellite to be orbiting at exactly the right place.

2.3 *Global Maps Direction API*

The Google maps API is a service the SE calculate directions between locations using HTTP requests. You searched for bias direction for several modes of transportation, including public transport, driving, walking, or berseped. The direction of the bias dimenetapkan place of origin, destination and point the path as either text strings (e.g.“ Chicago, IL or”Darwin, NT, Australia) or as coordinates latitude/longitude. The ESE API returns the bias direction of multibagian using a series of point road.

2.4 *Haversine*

Haversine a method used to calculate the distance between a point at the surface of the earth using a line of latitude (longitude) and longitude (lattitude) as variable inputan .Haversine formula is important equation on navigation , give a great circle the distance between two points on a spherical surface (earth) on the basis of longitude and latitude. [14}

By assuming that the earth globular perfect with 6.367 jari-jari r , 45 miles , and the location of 2 points in koordinant the ball (latitude and longitude) masing-masing is lon1 , lat1 , and lon2 , lat2 , so the formula haversine can be written by the equation as follows :

```
x = (lon2-lon1) * cos ((lat1+lat2)/2);
y= (lat2-lat1);
d= sqrt(x*x+y*y)*R
```

Picture 1. Formula Haversine

Information:
x = Longitude
y= Lattitude
d= distance
R= Radius earth =6371 km
1 degree = 0.0174532925 radian

2.5 *Simple additive weighting*

A method of weighting simple additive (saw) often also known term summation terbobot method .The basic concept of methods saw is find summation terbobot of performance rating on any alternatinf on all attribute (fishburn , 1967) (mac crimmon , 1968) .Saw need a method process notmalisasi rating with all the alternatives .Simple formula additive weighting (saw) [14].

$$r_{ij} = \begin{cases} \dfrac{x_{ij}}{\max_{ij} x_{ij}}; & \text{If j is an attribute advantage} \\ \dfrac{\min_{ij} x_{ij}}{x_{ij}}; & \text{If j is an attribute the cost} \end{cases}$$

where : r-ij = Rating ternormalisasi performance
Max x-ij= The maximum value of each row and columns
Min x-ij= Minimum value of any rows and columns
X-ij= Rows and columns of the matrix
With r-ij Is rating performance ternormalisasi of alternatives ai in attribute
Cj; with i = 1,2 .. m dan j = 1,2,…,n.
The value of a preference for each alternative (vi) given as :

$$V_i = \sum_{j=1}^{n} w_j r_{ij}$$

where:
V-i = Final scores of alternative
w-j = Appointed weightr
-ij = Normalization matrix
Value v-i greater indicates that alternative ai more elected [2]

2.6 excess method Simple Additive weighting(SAW)

Excess of model simple additive weighting (saw) compared with a model decision-making another located on his ability to make an assessment in a more right because it is based on value criteria and weights preference that had been determined, selainitu saw can also select alternaif best of a number of an alternative that is because the process of perangkingan after determine the value of weight any attribute

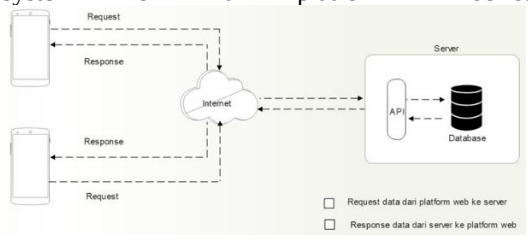
2.7 Specinfitications software needs

Under this is some specification needs software :

1. Mobile system providing facility for users to the register in the system.
2. System of providing facility for users to sign in the system.
3. The system of providing facility for users to display timeline
4. The system of providing facility for users to display detail timeline.
5. he system of providing facility for the user to choose vacancy.
6. The system of providing facility for users to display user profile.
7. The system of providing facility for users to display detail the user profile.
8. he system of providing facility for users to edit profile.
9. he system of providing facility for users to seting the distance.
10. System of providing facility for users to detail matching
11. System of providing facility for users to register chating.
12. System of providing facility for users to display route.
13. ystem provides a facility for the company to add a vacancy.

2.8 Architecture System

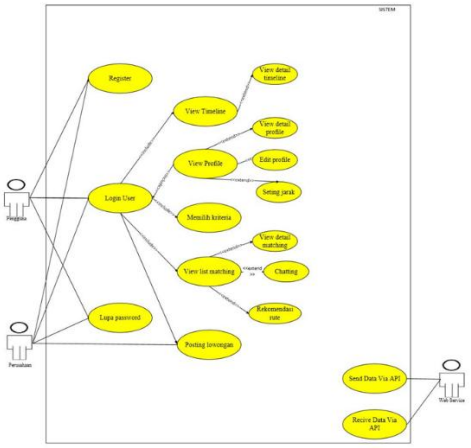
Platform mobile is selected system for the construction of this software .Architecture software on a platform mobile describes how software interact as illustrated in pictures of architecture software on a platform mobile .A picture tesebut describe a whole architecture system on a platform mobile.



picture 2. Architecture software

2.9 Scenario Use Case

Below is a picture scenario use case, of systems that will be built.

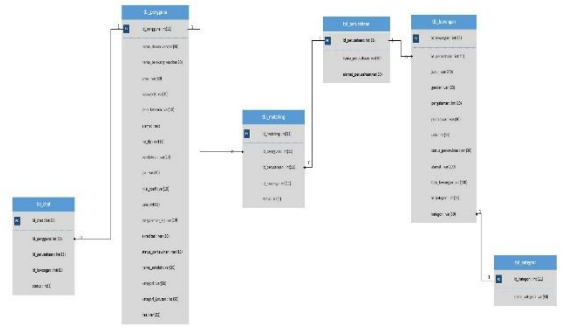


Gambar 3. Skenario Use Case

1. Register: system showing form register for the user consisting of full name, mail and password
2. Login: system showing form login for the user consisting of mail and password
3. View timeline: system showing list users good company / job seekers.
4. View Detail timeline: Sistem menampilkan detail pengguna baik perusahaan/pencari kerja.
5. View detail timeline: system showing detail users good company / job seekers.
6. View detail profile: system showing detail users good company / job seekers.
7. Edit profile: system provides a facility for change / edit profile..
8. Setting distance: system facilitate set the nearest distance.
9. Choose criteria: system provides a facility choose the criteria recommended
10. View list matching: system showing list of company with job seekers who has matching and can do chating and looked at the profile of
11. View detail matching winnow: system.
12. Chating: system provides a facility chating between users who have matching.
13. Rute: Sistem memberikan fasilitas pengarahan rute ke kantor tujuan .
14. Post a vacancy: system facilitate for the company to post a vacancy
15. Forgotten: system showing menu forgotten , user menginputkan email registered .

2.10 Design Data

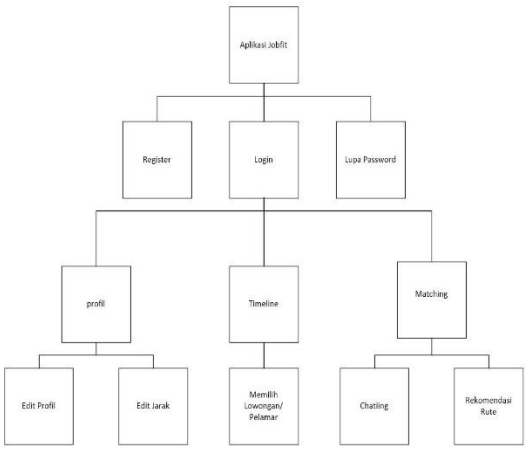
Under this is the scheme design data , of systems that built



Picture 4. The scheme relation

2.11 Structure Menu

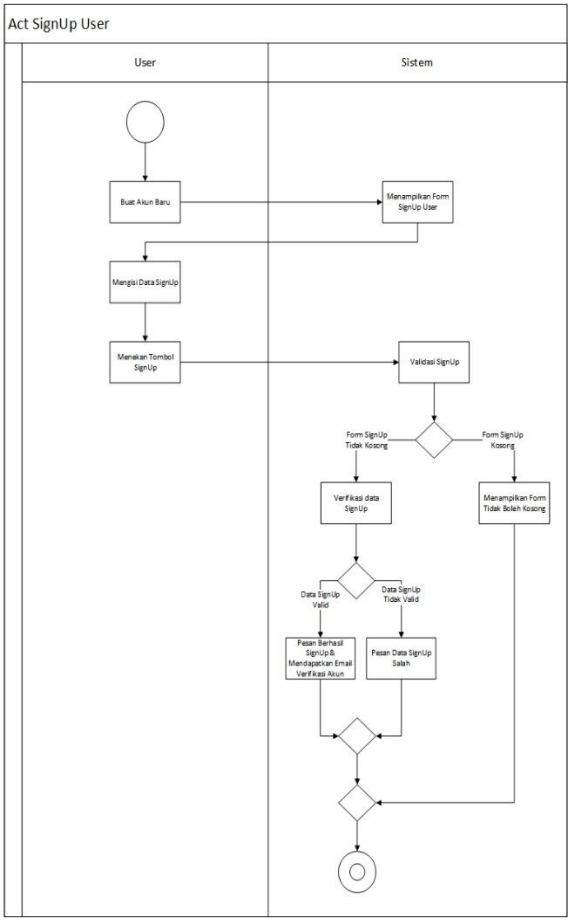
Below was an image of structure menu of systems that built



Picture 5. Structure Menu

2.12 Activity Diagram

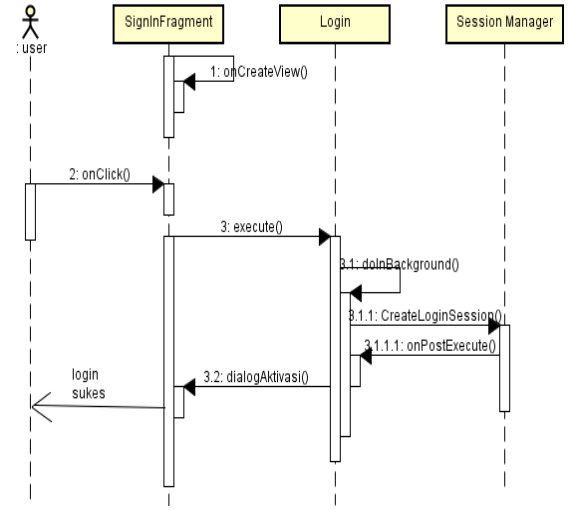
Below is an example of a activity diagram of system that built.



Picture 6. A diagram registers activity

2.13 Squence Diagram

Here is an example of a sequence diagram of the system established



Picture 7. Squence diagram login

2.14 Hasil penelitian

2.14.1 The result of testing

The results showed the results of testing of tests carried out according to the plan and scenario testing.The results of testing is divided into two namely the results of testing functionality and results of the testing beta

2.14.1.1 The Result Of Testing Functionality

Produce is testing functionality system.The following table who describes the result of testing if using data right.

1. Testing Register User

The following is the picture described the results of testing functionality register user if using data right.

Kasus dan Hasil Uji (Data Benar)			
Data Masukan	**Hasil yang diharapkan**	**Pengamatan**	**Kesimpulan**
Nama depan : Syafiq Nama Belakang : Ubaidi Usia : 22 Pengalaman Kerja : 0 Kategori : IT/Komputer Gender : Pria Status Perkawinan : Belum Menikah Pendidikan : S1 Alamat: Dago barat 44a Nomor Telepon : 08562318050 Email : jobfit12@gmail.com Password : jobfit 12 Konfirmasi password : jobfit12	*Text box* terisi sesuai dengan data yang dimasukkan	Isi dari *Text box* sesuai dengan data yang dimasukkan	Diterima

Picture 8. Testing data registers right

2. Testing Register User

The following is the picture described the results of testing functionality register user if using data wrong.

Kasus dan Hasil Uji (Data Salah)			
Data Masukan	**Hasil yang diharapkan**	**Pengamatan**	**Kesimpulan**
Nama Belakang : kososng Usia : kosong Pengalaman Kerja : kosong Gender : kosong Pendidikan : kosong Kategori : kosong Alamat: kososng Nomor Telepon : kosong Email : kosong	Siste menampilkan pesan data tidak boleh kosong jika salah satu form kosong maka akan muncul pesan	Tampil Pesan: nama belakan , nama depan , usia , pengalaman kerja, gender, pendiidkan, kategori , alamat, nomor telepon : tidak boleh kosong	Diterima
Password: kosong Konfirmasi password : kosong	Sistem menampilkan pesan Password/Konfirmasi Password	Tampil pesan passrod tidak sama	Diterima

Picture 9. Testing data registers wrong

3. Testing Login User

The following is the picture described the results of testing functionality login user if the data right.

Kasus dan Hasil Uji (Data Benar)			
Data Masukan	**Hasil yang diharapkan**	**Pengamatan**	**Kesimpulan**
Email : Jobfit12@gmail.com	*Text box* email terisi sesuai dengan email yang dimasukkan	Isi dari *text box* email sesuai dengan email yang dimasukkan	Diterima

Picture 10. Testing login data right

4. Testing Login User

The following is the picture desvribe the result of testing fungctionality login user if the data wrong.

Kasus dan Hasil Uji (Data Salah)			
Data Masukan	**Hasil yang diharapkan**	**Pengamatan**	**Kesimpulan**
Email : (Kosong) Password : (kosong)	Sistem menampilkan pesan email dan password harus di isi	Tampil pesan "email dan password tidak boleh kosong"	Diterima
Email : (isi) Password : (kosong)	Sistem menampilkan pesan email dan password harus di isi	Tampil pesan "email dan password tidak boleh kosong"	Diterima
Email : (Kosong) Password : (isi)	Sistem menampilkan pesan email dan password harus di isi	Tampil pesan "email dan password tidak boleh kosong"	Diterima
Email : (Salah) Password : (salah)	Sistem menampilkan pesan kombinasi email dan password yang anda masukkan tidak dikenali	Tampil pesan kombinasi email dan password tidak dikenali	Diterima

Picture 11. Testing data login wrong

2.14.2 The results of testing beta

he results of beta testing namely the results of testing in the questionnaire , following the results of its testing .The questionnaire consisting of four questions submitted to 20 respondents

Pertanyaan	Rata-rata
Apakah aplikasi dapat membantu meneukan lapangan pekerjaan?	3.6
Apakah aplikasi dapat membantu pengguna untuk mendapatkan pekerjaan sesuai dengan kriteria yang diinginkan?	3.8
Apakah aplikasi dapat memudahkan komunikasi antara pencari kerja dan pemilik lapangan kerja?	3.8
Apakah aplikasi dapat membantu pengguna menuju kantor/lokasi pemilik lapangan pekerjaan?	3.65

Picture 12. Testing beta

The results of testing beta with kuisioner can be taken conclusion as follows

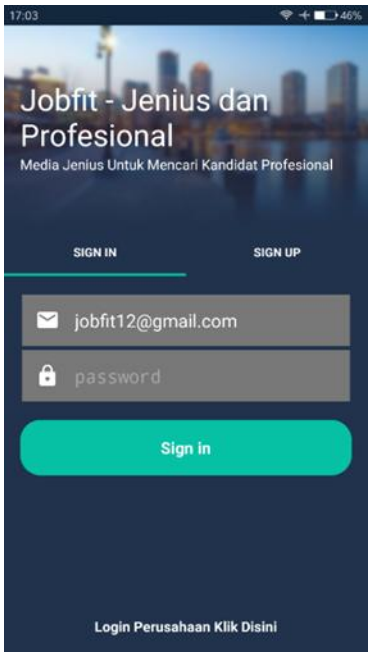
1. Sers agree software that built have ease users to help locate job opportunities.
2. Users agree software that built help to find a job in accordance with the criteria desired
3.Users agree software that built help ease communication between job seekers and the owner of job opportunities.
4. Sers agree software that built help users to the office / the owner job opportunities.

2.14.3 Evaluation Testing

Based on the results of testing application that done then we can conclude that software that built has been running as expected whether it is in terms of pegujian blackbox and of beta testing.

2.13.3 Login Interface job seekers

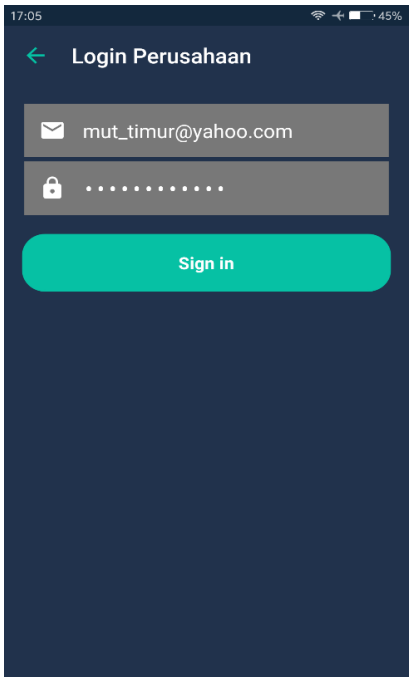
in the following is a display of login interface job seekers.



Picture 8. Login interface job seekers

2.14.2 Interace Login Company

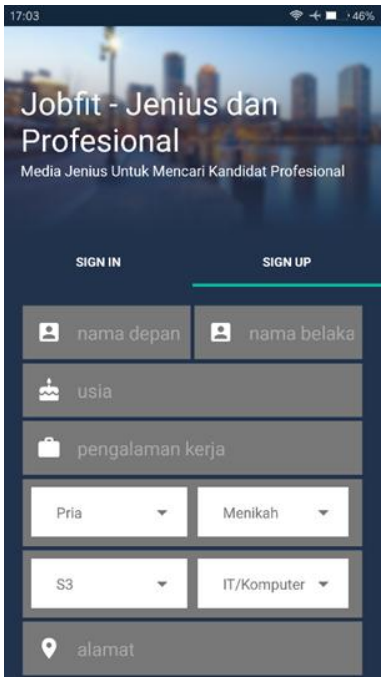
Under this is display interface login company.



Picture 9. Interface login company

2.14.3 Interface Register

In the following is a display of registers a user interface



Picture 10. Interface register

2.14.4 Interface timeline job seekers

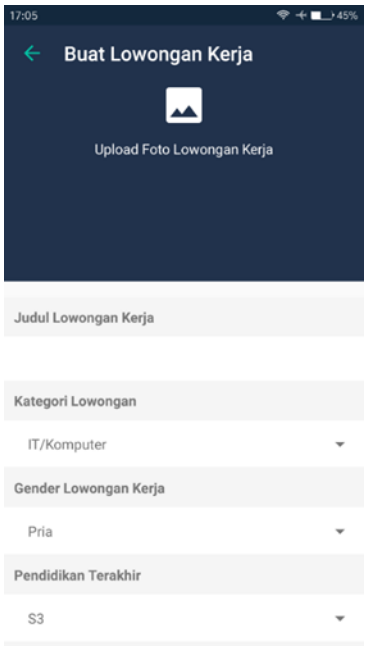
nder this is display interface timeline job seekers .



Picture 11. Interface timeline

2.13.5 Antarmuka Buat lowongan

Under this is display interface for a vacancy



Picture 12. Interface for a vacancy

2.14.6 Interface Candidates Apllicants

nder this is display interface candidates applicants.



Picture 13. Interface candidates applicants

3. PENUTUP

Application jobfit system smart to recommendations job opportunities based on the criteria and location was built to ease job seekers get a job in accordance with the criteria desired and simplify the owner job opportunities get worker who in accordance with the criteria needed .By because then there are some of the suggestions can be used as a guide development software at better to support development of users and content on the application jobfit this.

3.1 Conclusion

1. Application built ease users to get infortmasi a vacancy
2. Application built ease job seekers to find a vacancy appropriate criteria desired.
3. Application built facilitate the owner job opportunities start finding candidate best work seekers in accordance with the criteria needed.
4. Application built help with memandun and refer job seekers to the office / the owner job opportunities.

3.1 Saran

Application jobfit system smart to recommendations job vacancy based on the criteria and location was built to ease job seekers get a job in accordance with the criteria desirable and simplify the jobs get worker in accordance with the criteria needed .Hence any some suggestions that can be used as a guide software development at better users to bolster growth and content on the application jobfit this .But saran-saran is as follows:

1 .Add a feature upload cv

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