THE NERAREST HOTEL RECOMMENDATION SYSTEM USING QUERY SKYLINE

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Abstrak

          Saat ini banyak sekali orang yang mengadakan wisata di setiap harinya. Dari dalam negeri maupun dari luar negeri untuk mengunjungi suatu tempat di indonesia. Mereka mungkin menginap untuk satu malam atau untuk beberapa malam. Tempat yang dikunjungi biasanya adalah tempat wisata. Lebih khususnya di sekitar bandung biasa banyak pengunjung dari luar kota ke bandung dan sekitarnya, hingga menginap satu atau dua hari bahkan mungkin lebih. Namun disekitar lokasi wisata begitu banyak hotel, yang bisa untuk menginap para pengunjung. Dengan begitu banyak hotel yang ada, itu justru bisa menjadikan bingung untuk memilih mana yang kira-kira terbaik.
          Dengan adanya masalah tersebut di dunia sains terdapat solusi, yaitu query skyline. Dimana ide dari query skyine adalah memilih data dengan adanya dominasi antar data, sehingga akan menghasilkan pilihan yang lebih sedikit. Dimana hal ini bisa terjadi berdasarkan parameter. Dimana parameter minimal 2 parameter untuk implementasi query skyline ini.
          Diharapkan dengan menggunakan query skyline bisa membantu orang dengan mudah memilih hotel yang terbaik. Dari pilihan query tersebut yang nantinya akan direkomendasikan.

Kata Kunci: Hotel, Query Skyline, Rekomendasi

Abstract
   Today, there are so many people who make trips. The tourists are not only local peoples but also foreigners. They may stay for one night or for several nights at certain tourism destination. Especially in Bandung which has many tourism destinations, tourists who come from outside Bandung will seek for hotels to stay. However, the problem is there are a lot of hotels in Bandung which can make them have a hard time to choose the best place to stay that suit them the most.
   The existence of these problems in the world of science there is a solution, i.e. query skyline. Where the idea of query is select skyline data with the existence of dominance between the data, so that it would produce fewer options. Where this can happen based on parameters. Where at least 2 parameters the parameters for the implementation of this skyline query.
Expected by using query skyline could help people to easily choose the best hotel.

Keyword : Queries Skyline, Hotel, Recommendation.

1.   Introduction

   Today, there are so many people who make trips. The tourists are not only local peoples but also foreigners. They may stay for one night or for several nights at certain tourism destination. Especially in Bandung which has many tourism destinations, tourists who come from outside Bandung will seek for hotels to stay. However, the problem is there are a lot of hotels in Bandung which can make them have a hard time to choose the best place to stay that suit them the most.

REKAPITULASI DATA KUNJUNGAN WISATAWAN
YANG DATANG KE KOTA BANDUNG TAHUN 2010 – 2015

NO	KETERANGAN	2010	2011	2012	2013	2014	2015	SATUAN
i	Jumlah kendaraan yang masuk via gerbang tol (pasteur,Pasirkoja,Kopo,M.Toha,Buah Batu	28.686.824	30.533.812	32.587.386	33.731.385	35.002.815	32.174.348	Kendaraan
II	1. Jumlah Pengunjung Melalui gerbang Tol.	65.442.916	69.674.507	73.976.993	76.765.364	79.164.051	73.592.442	Orang
	2. Jumlah Pengunjung melalui Bandara, stasiun,terminal	7.990.407	6.388.447	6.524.071	7.073.615	7.038.837	7.603.193	Orang
	Jumlah	73.433.323	76.062.954	80.501.064	83.838.979	86.202.888	81.195.635	Orang
III	Wisatawan yang melalui pintu gerbang kedatangan							
	a. Wisman	228.449	225.585	176.855	176.432	180.145	183.932	Orang
	b. Wisnus	4.951.439	6.487.239	5.080.584	5.388.292	5.627.421	5.877.162	Orang
	Jumlah	5.179.888	6.712.824	5.257.439	5.564.724	5.807.564	6.061.094	Orang
IV	Wisatawan Menginap							
	a. Wisman	180.603	194.062	158.848	170.982	176.487	130.039	Orang
	b. Wisnus	3.024.666	3.882.010	3.354.857	3.726.447	4.242.294	3.874.453	Orang
	Jumlah Tamu Menginap	3.205.269	4.076.072	3.513.705	3.897.429	4.418.781	4.004.492	Orang
	Jumlah Tamu Tidak Menginap	1.974.619	2.636.752	1.743.734	1.667.295	1.388.783	2.056.602	Orang
	Rata-rata Lama Tinggal Wisatawan						2,25	Hari

Catatan : Data Sudah Disahkan oleh BPS Kota Bandung

Bandung,   Februari 2015
Kepala Dinas Kebudayaan dan Pariwisata
ttd
H. Herlan J. Soemardi,SP,M,Si
Pembina Tingkat
NIP.19710725 198912 1 001
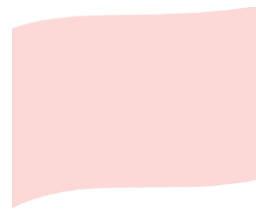
The data from Bandung Tourism Office shows that there are so many tourists who stay in Bandung for their holidays. It can be a problem for them if they do not know where to stay in Bandung or if the choice is too many which make them hard to choose. Surely they do not want to be disappointed with their holidays because of their wrong decisions on staying in a hotel which is not up to their expectations.

It would be difficult to find the best hotel for a tourist because of the lack of information around the destination and because of choices given by some sites or application are too many. To solve that problem, computer science has methods which can handle it. That is by recommending based on certain parameters, which will produce the best recommendations. The minimum parameter to be able to generate recommendations is two parameters. To produce the best recommendation, this method combines the selected parameters. With this, the object that will be recommended will be compared. When they are compared, then the object will be checked whether the object will be dominated by another object. If the object is not dominated by other objects, then the object will be selected. The selected object is called the best object based on certain parameters.

The described method above is called Skyline queries in computer science. The author wanted to implement it to solve the problem which has been described before.
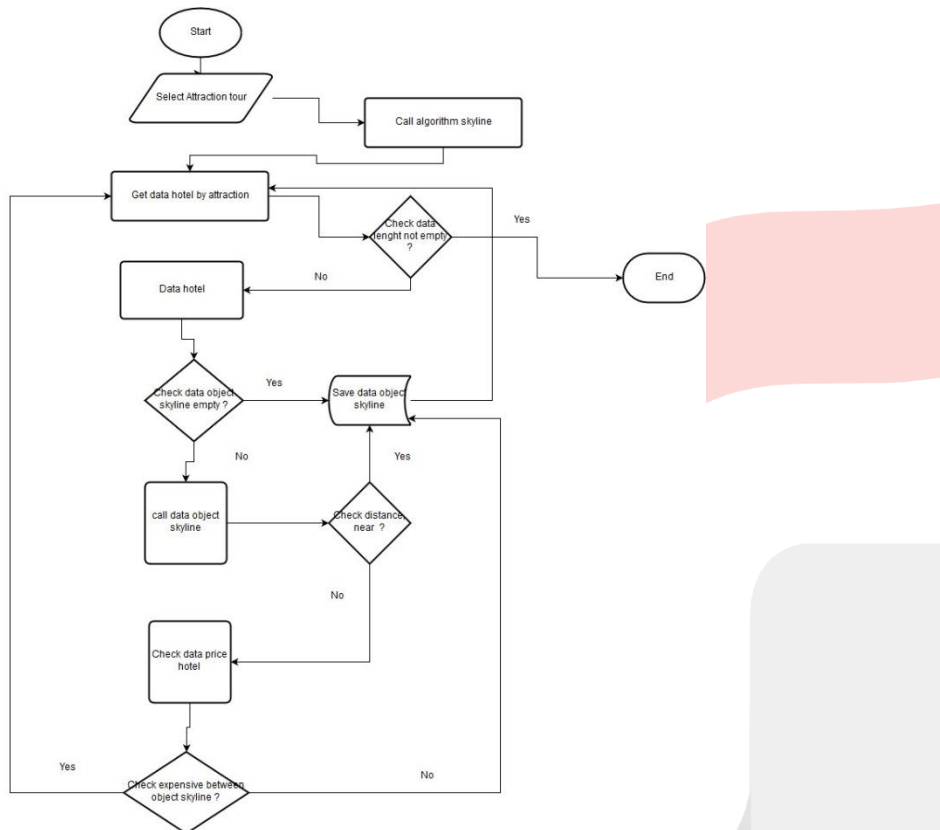
2.   Literature ReviewAnd Design System

2.1 Design System\
2.1.1 description System
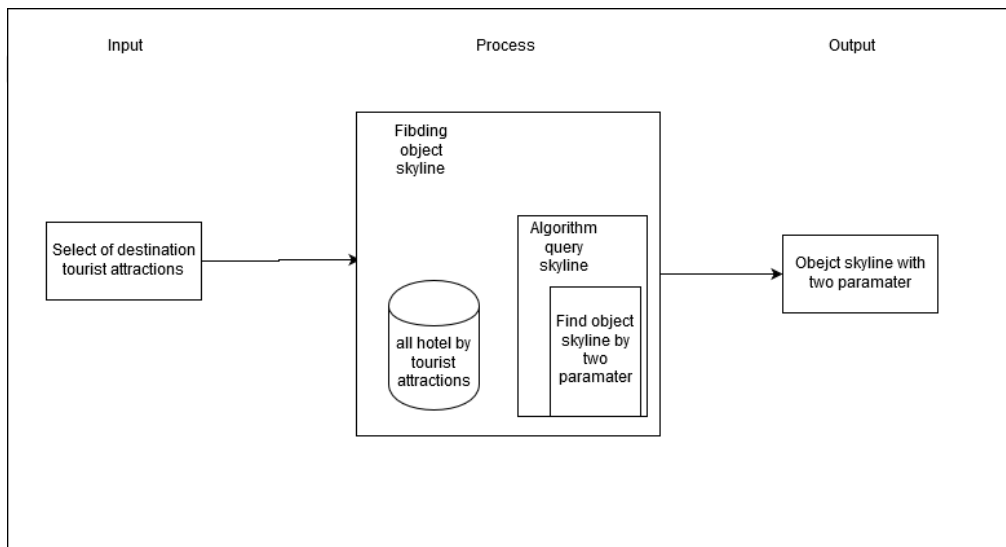
in the figure the user choose the location of attractions as a destination, then the system find the best hotel with the attractions by using the query skyline.

2.1.2   Flow Chart

Start

Select Attraction tour

Call algorithm skyline

Get data hotel by attraction

Check data lenght not empty ? — Yes → End

No

Data hotel

Check data object skyline empty ? — Yes → Save data object skyline

No

call data object skyline

Check distance near ? — Yes

No

Check data price hotel

Check expensive between object skyline ? — Yes / No

- The first is to choose the location of tourist attractions.
- Then call the function query algorithm for skyline.
- Call the data based on the selected attractions. And then in order to determine looping as an object of skyline.
- checks whether the data is based on tourist spots empty or not.
  - If not then to the next process.
  - If empty then the process completed.
- checks whether the data array of object skyline empty.
  - If Yes, then input the data into of objects skyline.
  - If not then enter the next process.
- Call data in array of object skyline.
- Compare data that comes with data that exist in the object of skyline closer to attractions.
  - If Yes, then store it in an array of object skyline.
  - If not, the next process is to.
- Then compare the price of both data.
- Check if the price is more expensive than the input data at object skyline.
  - If Yes, then go back to process the data, for there is still data in check for the check.
  - If not, then save it into an array of object skyline.

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2.2 Literature Review
2.2.1   Query Skyline

According to D.Papadias, Y.Tao, G.Fu, B. Seeger[2003] in the paper "An Optimal and Progressive Algorithm for Skyline Queries":

"Query skyline is given a set of points p1, p2, …. pN, the skyline query return a set of point P (referred to as the skyline points), such that any pint pi E is not dominated by any other point in the dataset. Point of domination is a point pi dominates another point pj if and only if the coordinate of pi, on any axis is not larger than than the corresponding coordinate of pj."

According to Kazuki Kodama, Yuichi Iijima, Xi Guo,Yoshiharu Ishikawa [2009] in the paper "Skyline Queries

Based on User Locations and Preferencesfor Making Location-Based Recommendations" "Askyline queryis aquery to select the setSof all the objects such that are notdominated by other objects.Sis cal led theskylineand for-mally given as follows:"

Let makes sample recommendation about hotel where is near in some destinations. With sample data like below.

Name	Distance	Price
Peace hotel	3	220
Star Hotel	5	180
Dungion Hotel	5.5	100
Fairy Hotel	2	215
Sun Hotel	6	200

We assume that distance in here is distance hotel from destination, where destination is (0,0) in the figure 2.2. Price is price hotel for stay in one night, and only one room. Figure 2.2 illustration data in graphic scatter, where y is price, and x is distance.
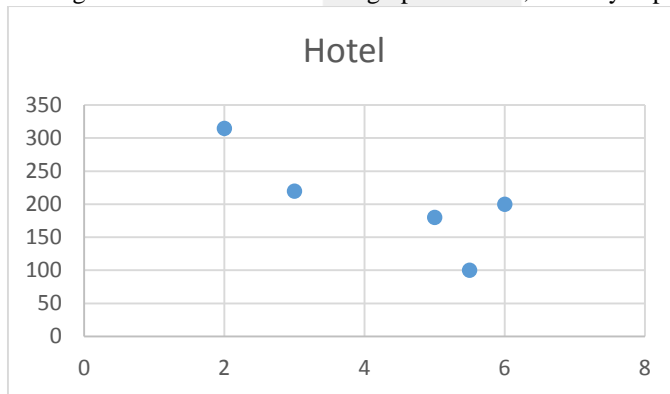
Using query skyline will eliminate one or some object, because some object will dominated by others. Query skyline not giving recommendation but reduce the number of item with the dominated.

In this sample we has two parameter, that minimum can be used query skyline. So with number oh giving query skyline will choosing for recommendation. For the sample will result the hotel near with destination and will not expensive. So no item more near and more cheap than the object the choice from query skyline.

With two parameter, query skyline will find the hotel nearest and will choice hotel cheap. When the hotel far and price expensive, so the hotel will dominated by the hotel near and price more cheap. So we call that hotel dominated by other object.

In this sample object (6,200) not will choice because dominated b other object, he has far distance, and price not cheap enough.

3.   Result And Discussion
3.1 Query Skyline

This part will show result from query skyline, using data real with destination Floating Market Lembang, and Tangkuban Perahu Lembang. Hotel in lembang, but just hotel with minimum two star. Result from two destinantion below.
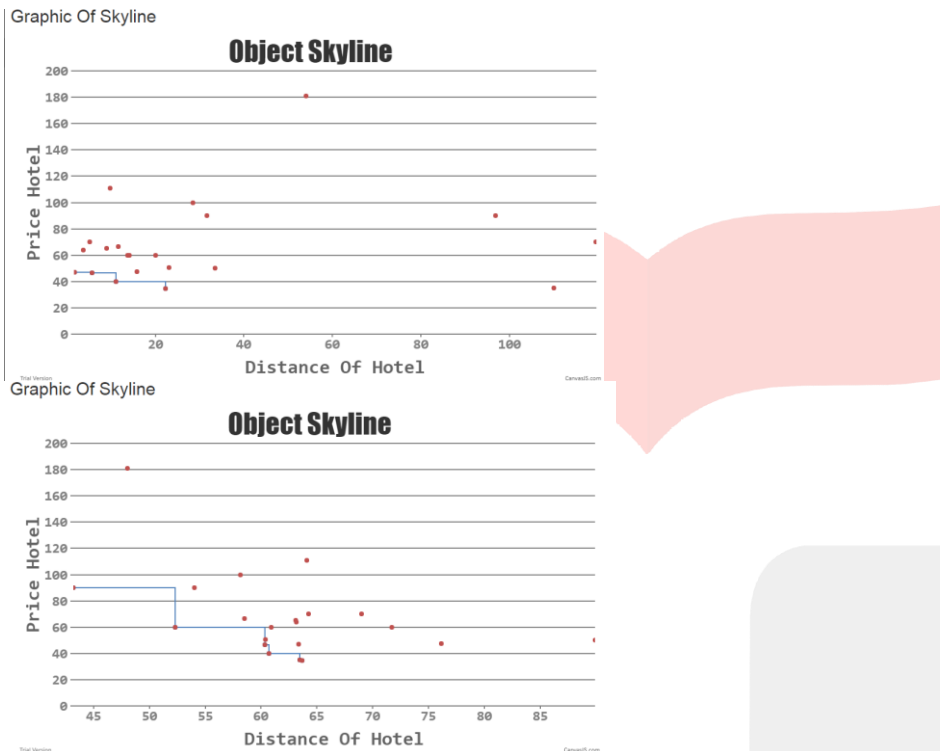
Like figure above, result from process query skyline where query skyline will choice object not dominated by other object based on parameter. In this result we used two parameter, price and distance hotel. In the figure we can look that no object above the line, line in the figure we call that skyline. So object in skyline we will choice for recommendation to people that good hotel for choice, because based on parameter hotel no more hotel the nearest and no more hotel cheap than that hotel choice.

3.2 Query Databased

We will look how about result using query database sql, with using select and we will limit with 6 output. We using select with some condition based on two parameter distance and price, and wee will order from that. The result below.


From the figure we can look that using query database still not good perfume, because when we use two parameter query not work with two parameter, just in condition in front will use for select object. So when distance in fron condition, object will select just object nearest with limit 6 object, and still has some object with expensive price between the other object but distance more far away from destination.

3.3 Google Maps image result

Google images result, we can look that result from google maps with some zoom same with result query, and still using same destination. The result below.
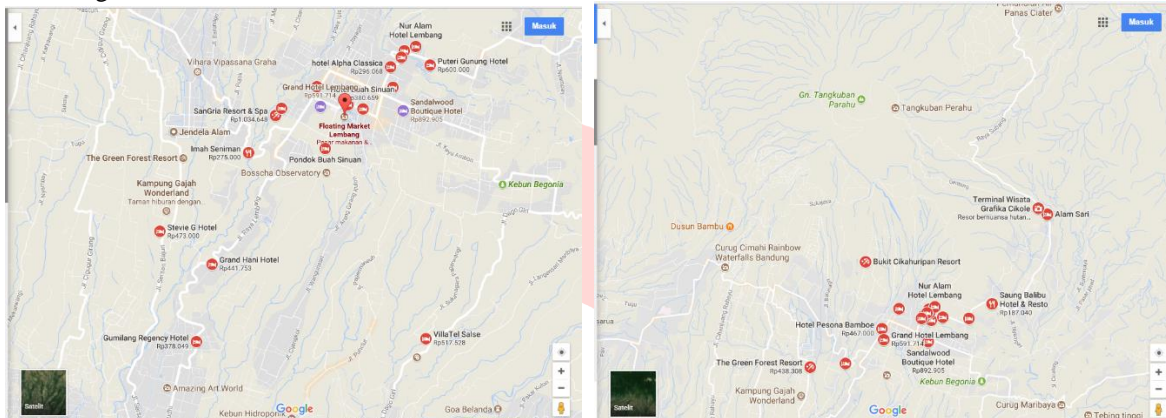
That result from google maps. And in the below result from skyline query.
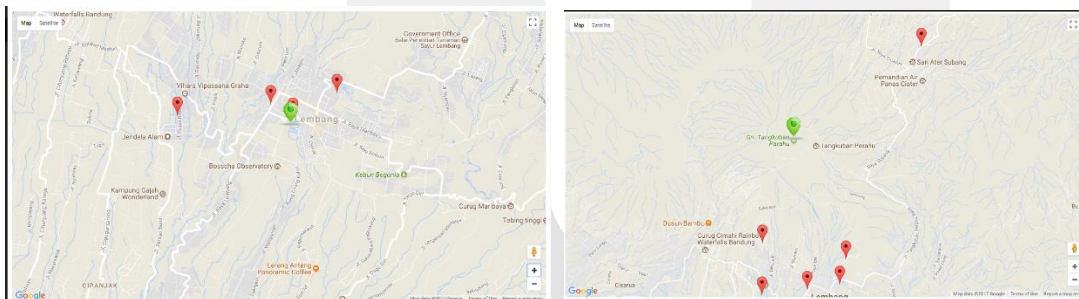
From the result above we can said that the different result, googlge maps giving more cohice between result query skyline. But from google maps not all we slect because hotel must minimum two star. But still has mre coihce. But hotel in query skyline, in google maps has too.

3.4 Resume

From result above with some different result, but still some object same. The result skyline more good between the other based on two parameter, because query skyline more optimal the result, google maps good but still more choice. And google maps not show the distance, it just hotel in around in destination without select object.

When we using query databased, with same parameter give different result when the parameter switch, because query based can select with two demantion, just one demantion. But some data output same with result from query skyline.

4. Conclusion

Skyline queries are basically not recommendations, but its results can be used for recommendations. It works on sorting and choosing data which is not dominated by other data based on certain parameters. As the result, the non- dominated object is used as a recommendation on this system. The parameters used in this system are distance and price.

The test results show that the outcomes given by the Skyline queries are excellent, where the results are more consistent than regular queries from Google Maps. Skyline queries provide better results - the distance is closer and the price is cheaper. In contrast, sometimes in regular queries there are still unwanted result like the distance is far but the price is also expensive. Google Maps also tends to be like that, but it provides more options.

From these results, it is expected that this Skyline queries can help people easier to choose the best hotel. So they will not have a hard time to just decide the place to stay for their holiday.

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