Google Map Usage in Transportation System

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Abstract

Transportation is the movement of men and materials from one place to another, by using modes of transport air, water, cable, pipeline and space. The transportation system entities are divided into infrastructure,vehicles and operations. If anyone wants to move from one place to another place, using above transportation system, easy and one point guidance is not available until 2005. Now IOT based Google map is available as one point solution to use existing transportation system. In this paper, an attempt has been made to explain use of Google maps for present transportation system and its benefits. Study area is Bangalore and the method used is IOT. Google map gives the dynamic updates about the traffic and gives the suggestions of alternate route for avoiding the traffic jam, use of location sharing to reach the place; it gives the details of the travel distance, travel time, alternative routes,and shortest routefor available public transport as well as for private transport. It also gives nearby petrol pump, food shelter, ATM, Hotels & more, which helps in reducing the searching time and travel time. Survey conducted on Staff and Students REVA University, revealed that only 67% are using Google app.

Keywords: Google Map, Navigation, IOT, Traffic, Transportation

Introduction:

Transportation is a vital component of human life without that one cannot live in the society. However, information about transportation systems and guidance of online dynamic transportation details are not available until 2005.

Goole map was launched in Feb 2005 and has become most used travel app in world and at present there are more than 1 billion people users per month [7]. The client can find the course from source to goal and even Google maps can guide those using GPS to their destination.

Google maps help clients to pick different modes of transportation for example transport, via train, car etc. Google maps are an online route framework made by Google. Google maps expanded its map app in 210 countries and regions. It furthermore gives some information about place that the client needs.

Google maps also gives the distance and time for making a trip from one spot to another to the client.

Google maps help the client by giving information during driving and directions for in excess of 14,000 towns and urban regions. It furthermore furnishes with the live traffic conditions, episode reports, and programmed rerouting to find the best course. Google maps contain point by point information of more than 90 million spots. It likewise gives Street View and Satellite view. Google maps allow the client to discover their territories on maps by GPS. It also allows the client to tweak and guide on their own guide by marking in. The client has the choice to see maps regardless of whether he is disconnected or connected.

Literature Review:

Dumbliauskas V, et al. (2017) [1] In this paper the author describes new traffic information sources have developed raising new difficulties and openings while applying novel strategies. The motivation behind this exploration is to analyse car travel time information gathered from advanced mobile phones by Google Company. The investigation brought about the computation of movement time vacillation during the day, count of movement time changeability and estimation of origin-destination (OD) skim frameworks. Moreover, we achieved the openness investigation and gave suggestions to additionally explore.

In this paperRajiv Kumar, et al. (2016) [2]investigates a novel methodology of engaging the smart phone user network for checking streets that they use. Smart phones are utilized for detecting the road surface conditions from a moving vehicle. The framework includes customer applications on advanced mobile phones that gather increasing velocities as the user travel on the roads, handling of the data and correspondence to a focal server, geo referenced database, and perception of road conditions on Google maps.

YishengLv, et al. (2017) [3]in this paper, author reviews internet based life based transportation research with informal organization investigation techniques. We sum up primary examination themes in this field, and report joint effort designs at levels of scientists, organizations, and nations, separately. At last, some future exploration directions are distinguished.

ManousosKamilakis, et al. (2017) [4] in this paper the author describes created two variations of an Android application routed to public transportation users. The application shows close by travel stops alongside schedule data of travel benefits passing-by those stops. The assessment discoveries have been cross-checked with logged (utilization) information. We target evoking information about client prerequisites identified with versatile application interfaces in this specific situation and assess client experience from even minded and compelling perspectives.

Zhixiang He, et al. (2019) [5] in this paper the author conducted an examination on similar investigation on the journey time information got from Google Maps and the IT'S in Hong Kong. We initially portray the hidden advancements of these two sources, and afterward direct analyses to look at the journey time information got from them for four route sets of an aggregate of 35 major routes during about fourteen days in Hong Kong. Trial results demonstrate that the p-values of the journey time information from the two sources are reliable with one another for most courses all through the whole day; and the distinctions are worthy

Parag Gawade, et al. (2017) [6]in this paper author describe and with an emphasis on a urban IoT structure that is used to develop Intelligent Transportation System (ITS). IoT based intelligent transportation frameworks are proposed to reinforce the Smart City vision, which means to use the advanced and fit correspondence frameworks for the association of the city and the residents.

Yao-Jan Wu, et al. (2007) [7]. In this paper presents a real-time Google-map-based Arterial Traffic Information (GATI) framework for urban lanes in the City of Bellevue, Washington State. Open source web devices and developing web advances, for example, Ajax, are utilized in actualizing the framework to guarantee its exhibition and limit its expense. Helpful managerial capacities are empowered through cutting edge database plan and the Model-View-Controller (MVC) application. This GATI framework, however introduced and exhibited by utilizing Bellevue's information, is a general innovation that can be applied to any arterial network.

Public Transportation:

Google Maps presently offer live traffic information for transports and population density expectation. Google Maps is propelling live traffic delays for transports in places where we don't as of now have ongoing data direct from nearby travel organizations. The user currently has the option to check whether the transport will be delayed, to what extent of the delaythere will be, and increasingly exact

travel duration that is dependent on live traffic conditions along the destinationroute. The user additionally observes precisely where the delays are on the map so that the user can comprehend what's in store before the user can even take another mode of transport.

In addition to driving directions, Google Maps offers an abundance of alternatives that the user depends on public transport for day to day drive. The administration gives a list of the different types of open transportation for user's trip, and it likewise offers the capability to schedule the start time and see the choices accessible at that specific time.

Google Maps inventories open travel data including transport, train, ship, and cable car plans from more than 100 nations and 25,000 towns. Alongside finding the ideal vehicle mode for the user's day by day drive, Maps makes it simple for the user to discover travel data when visiting another city.

How to use Google Maps for transportation

1. Download the Google map app by play store and install it and one has to sign in for that as shown in the fig 1 shown.

Fig 1
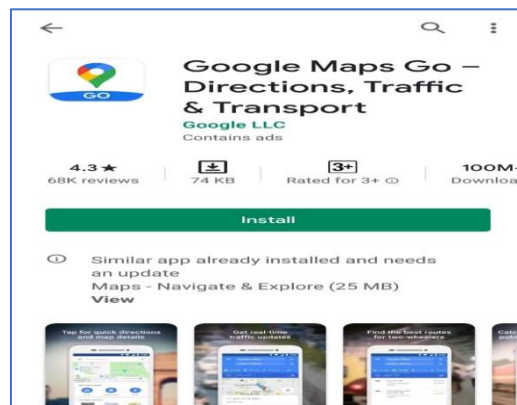
2. Fig 2, on top first row shows **Search here functionality and** any location can be searched by entering in the search text box, second row shows **Home, Petrol, Food shelter buttons**…, to move to that place, click on the blue **GO** with arrow bottom in the bottom right corner. On click of **GO** bottom, navigation to the screen is as shown in the fig2 appears.

Fig 2
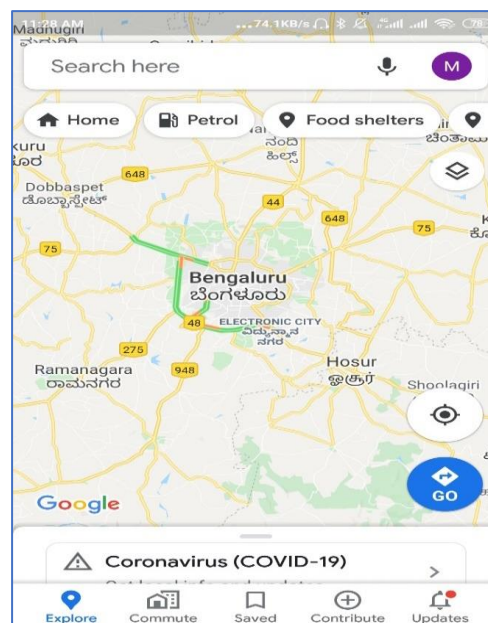
3. Fig 3 shows that: **Your location** in first row, **Choose destination** in second row (interchangeable using right side arrow keys). Fill **your location** by any origin and second row **Choose destination** by destination to reach. After entering fig 4 appears.

Fig 3
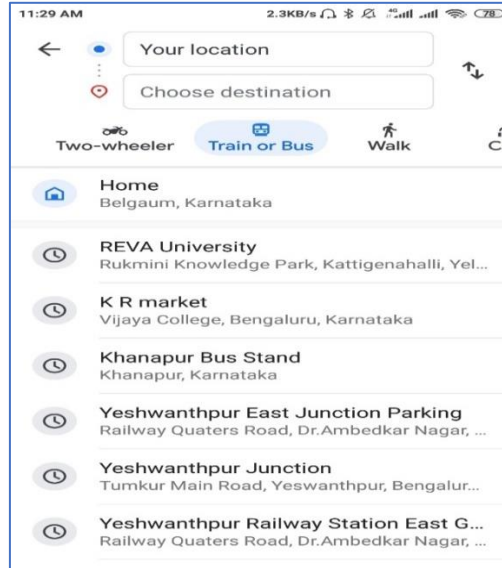
4. Fig 4 Example: **Your location** filled with a value as KR market and **Choose destination value** as REVA University as shown in the fig 4. This figure shows that and mode of transportation optionsare visible such as in figure form: Car, 2-wheeler, Public transport, Walking and Cab is available with time required to reach with respective mode of transportation. By selecting mode as car, routes availableare displayed and the user can opt for any route, fastest route is displayed with dark blue color, other routes by light grey color with time.

Fig 4
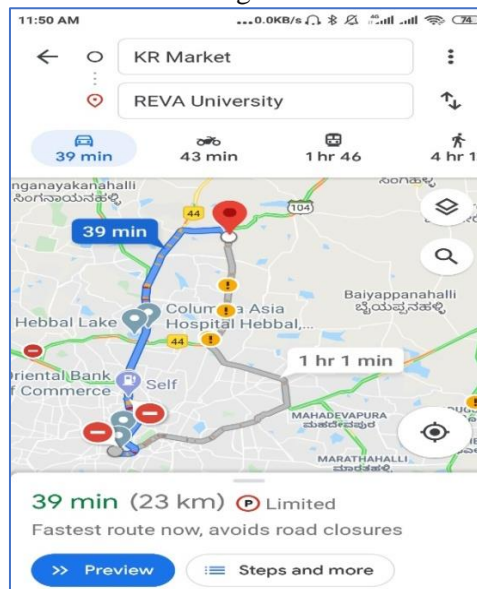
5. Fig 5.Byselecting the bike as option, in this fastest route and time to reach the destination is available as in case of car.
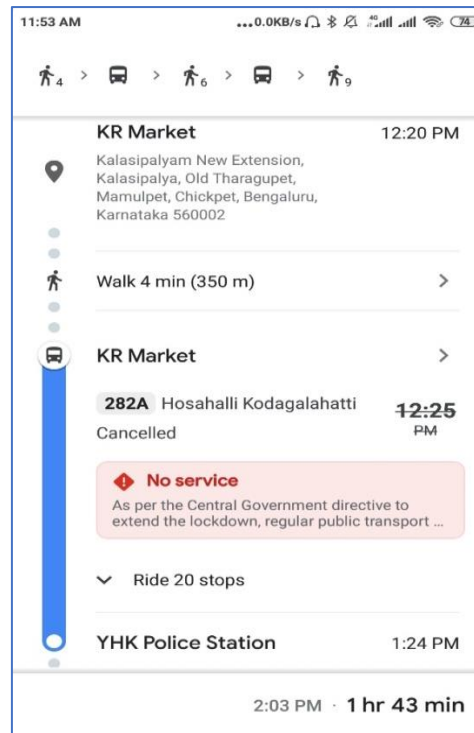
Fig 5
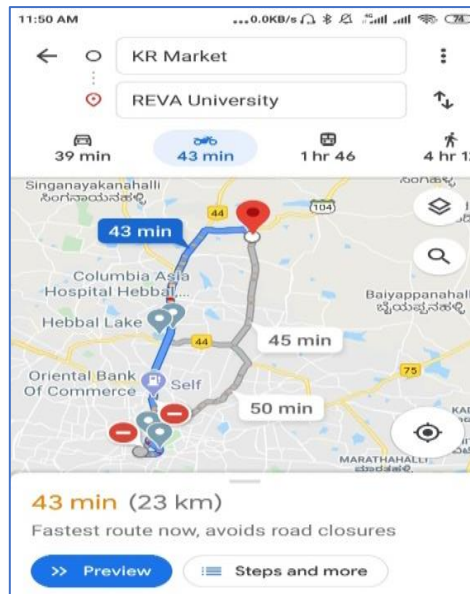
6. Fig 6. By selection of the public transport, all the possible ways to reach including type of public vehicle, time of reach total costs are displayed.
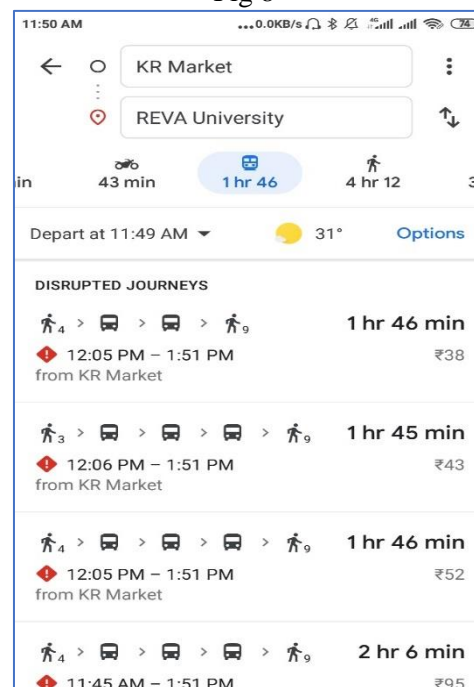
Fig 6
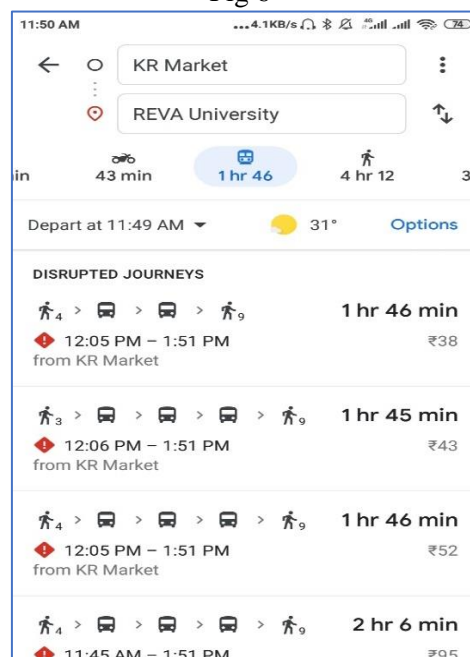
7. Fig 7. Selection of the first option shows how to use the public transport. How much walking distance, which public vehicle available, time of reach and total cost included.
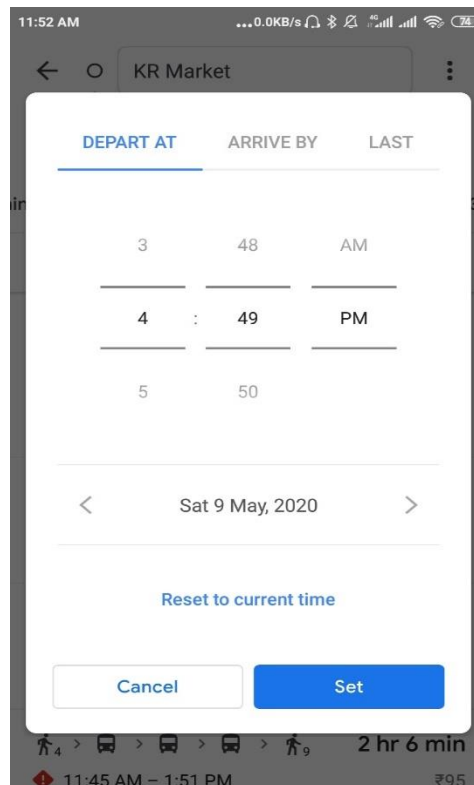
Fig 7

8. Fig 8. To show selecting on depart at we can change the particular time, date.
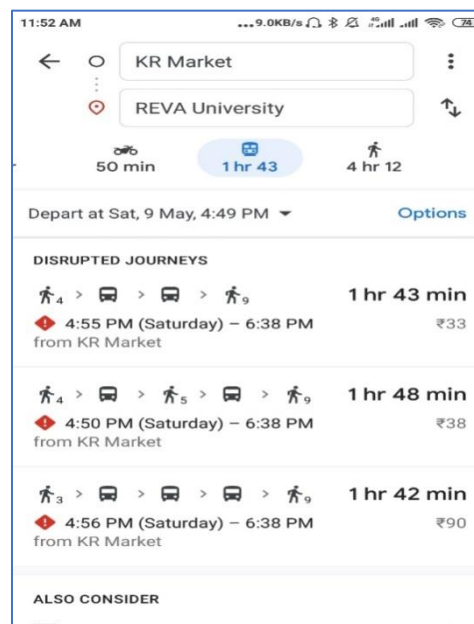
Fig 8

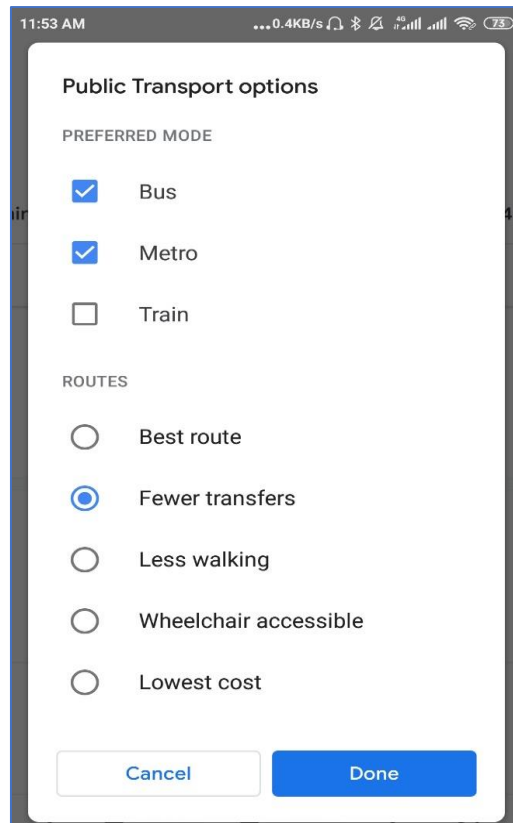9. Fig 9. Enter your desired time and date and click on done button.

Fig 9

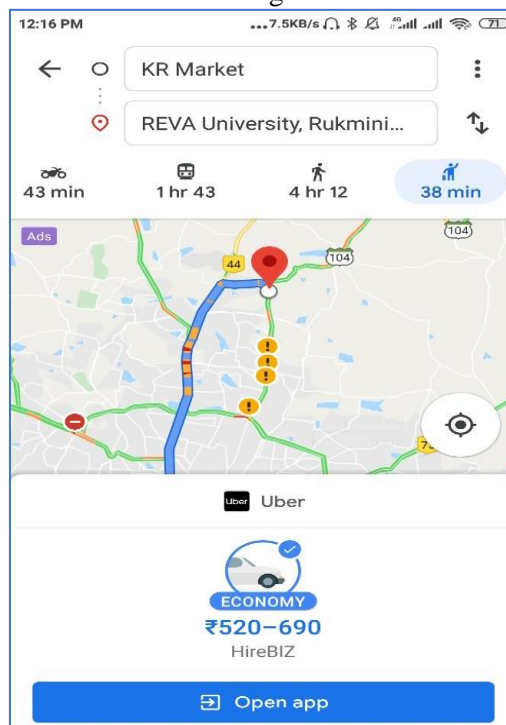10. Fig 10. Shows how that a new list of public transport of options.

Fig 10

11. Fig 11. Show selection of preferred the mode of transportation and route, select the option button.
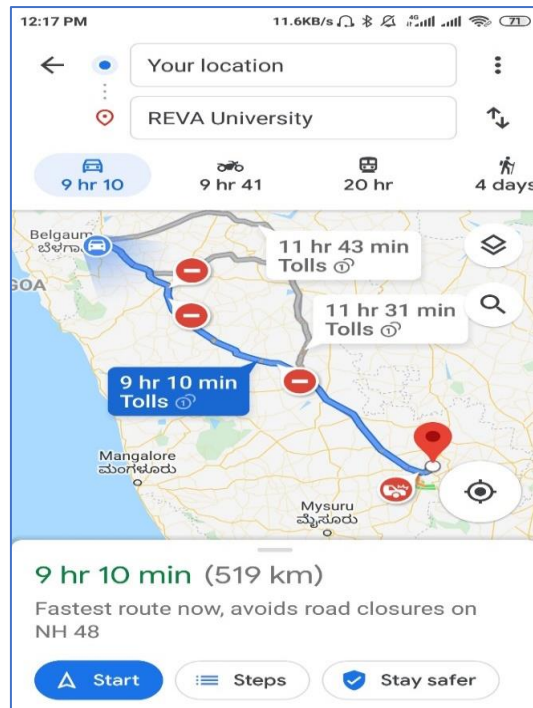
Fig 11

12. Fig 12. Cab of least cost available.
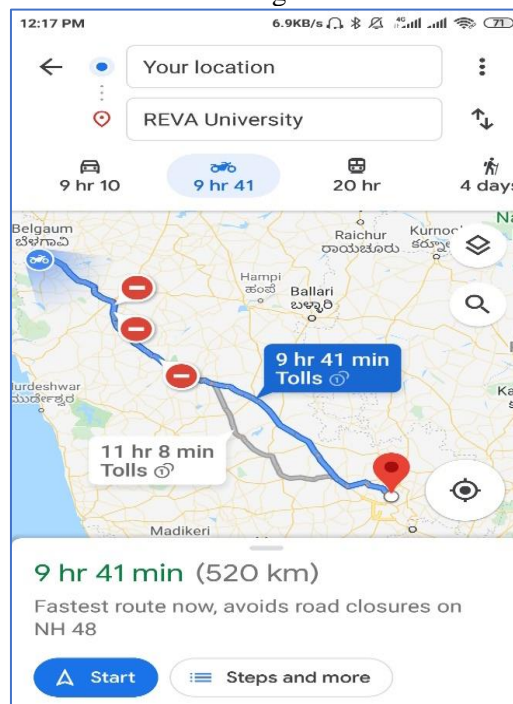
Fig 12

13. Fig 13. Show the example if we are travelling more than 200 km Google map also shows the route. Entire the destination and origin should be your location.
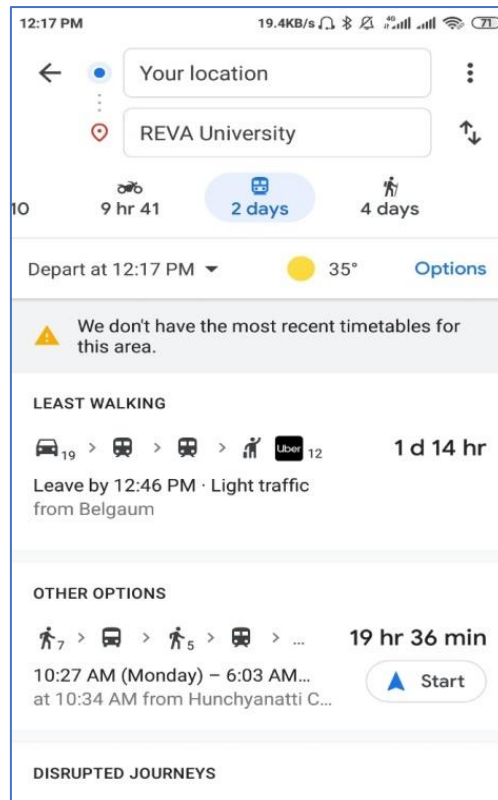
Fig 13

14. Fig 14. Select the bike in that fastest route and time to reach the destination is available
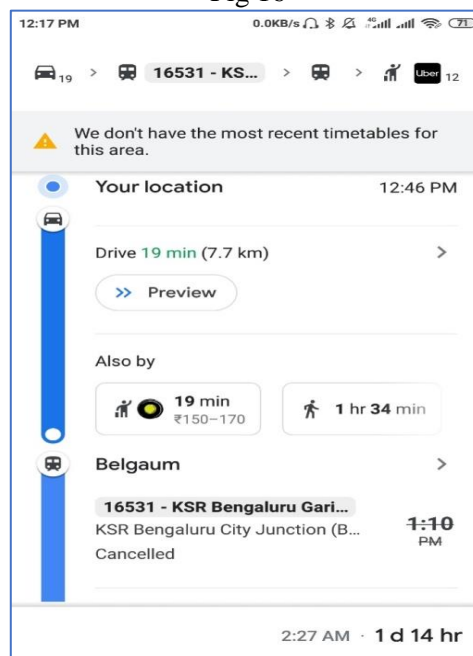
Fig 14

15. Fig 15. Public transport possible ways to reach with travel time including.

Fig 15

16. Fig 16. Shows how to use the public transport. How much walking distance, which public vehicle available with travel time included.

Fig 16

17. After selecting any mode of transportation press the blue **Start** with arrow bottom in the bottom left corner displays fig 17.That stars navigation give navigation root including voice instruction, speed of your vehicle, time expected to reach destination and traffic details.

Fig 17
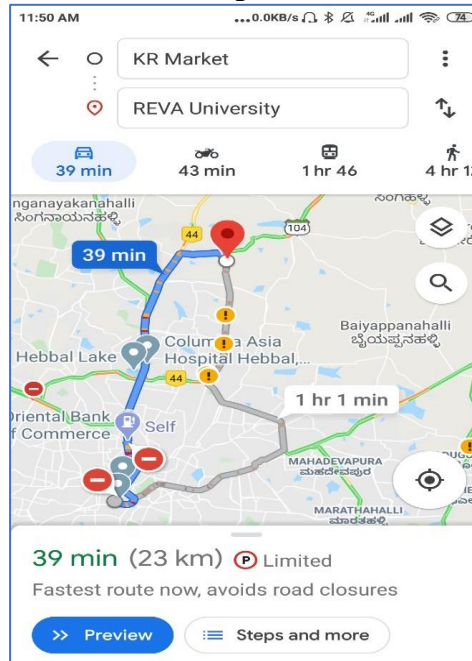
Study the Google map in REVA University and five bus stops in and around Yalahanka.

A Study was conducted to know the use of Google map in daily routine based for travelers. Surveys conducted on Google form and respondents.

1. Sample size is 868 Students and Staff (With Smart phones). Out of 868, 67% (577) are using Google Map.

2. Sample size is 712 publics Staff (With Smart phones) at five bus stop in and around Yalahanka, revealed that only 8% (57) are using Google Map

From the above survey graph shows the number of Google map usage in daily routine. The maximum Students and Staff are agreeing to use of Google map in daily routine but 92% public are not aware of application of Google map.

Conclusion:

Present day more than 50% population carrying smart phones, they can use Google map app for their transportation effectively.

1. This is the best **free** traffic and transport app available by downloading from play store on android phones.

2. This app is designed such that anybody can operate easily.

3. To search the place to reach (any location, Petrol pump, Food shelter etc)

4. Time required reaching that place, selecting mode of transportation and cost of transportation.

5. While navigation speed of vehicle, remain time to reach the place, traffic situation and weather condition.

6. Using map actual location map is visible.

7. Actual satellite image is visible including land use features.

8. There are lot more application are available using Google map app.

9. But still public are not aware of Google map app usage.

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