Updation in Route Mapping Using Videography Technology

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Abstract - *Visualization works from a human perspective because we respond to and process visual data better than any other type of data, that's why we taught about route mapping using videography technology. The technical validation of videography navigate on, a new service that makes use of the map platform, and the basis for building multiple services in a high-accuracy positioning society. The capacity to give real-time video information, which may be utilized to improve navigation accuracy, is one of the main benefits of videography navigation. Videography navigation may be a pillar of positioning technology in the future with more research and testing.*

*Key Words: **Video graphic Technology, Informatory Landmarks, Navigation, Route mapping ETC..***

1. INTRODUCTION

Google Maps does not show us photographs of the sites that will be along the road to our destination since it only shows a visual representation of the major location that a traveler wishes to reach. Google Maps simply provides the turn distances. For example, if we are travelling while there lies a turn afterward, Google Maps will inform us that the turn is 300 meters away or something similar. However, if someone misses a turn sometimes, Google Maps will reroute us and show us a longer path. This issue won't impact our maps since we give them photographs of landmarks, allowing the user or passenger to readily acknowledge the image included in the route and take the turn. Additionally, our project will conserve time and gasoline, because it enables travelers to get there more quickly. The visualization works from a human standpoint because we react to and absorb visual information more quickly than any other sort of data. Visual images will play a significant role in the future, That's why we considered using videography technology with route mapping.

Maps is now one of the primary ways to go to the target location due to the improvement in the quality of videos and the increasing number of its users. This enables the integration of Google Maps with videography technologies.

This research says that businesses that have started applying digital maps have seen an increase in staff productivity, improved visual communication, and a more than 50% reduction in the cost of logistics and resource planning. Online markets, delivery services, farming, property management, engineering either media, power and utilities, insurance, and architecture are just a few of the numerous sectors that have benefited from this technology - O.S. Asaolu et al (2018)[1]. This study says that the availability of online mapping tools like Maps by Google and Street View has increased. Although there are numerous practical applications for these technologies in daily life, law enforcement organizations have voiced worry that they may be used by criminals to their advantage and potentially change established patterns and habits of criminal behavior. Despite not being designed with scientific inquiry in mind, Maps by Google and Street View provide intriguing opportunities for study- Christophe Vandeviver et al (2014)[2]. Web map services are a new type of map service that was made possible by the use of GIS, computer, and internet technologies. This article uses the Google Maps Application Programming Interface (API) and XML to create a network release mechanism for regional land use data and applies Web map services to the distribution of land use information. The application programming interface for Google Maps based on its three map modes was introduced by Google. Chenzji et al (2010)[3].

1.1 OBJECTIVES

[1] To rectify the problems faced by travelers while travelling on routes.

[2] To collect data of main spots from the site selected of "*Nagpur*".

[3] To merge and upload the data collected in website or application.

[4] To save traveler time and wastage of fuel by providing shortest routes using video graphic technology.

1.2 SCOPE OF THE WORK

So our scope of the project is to make a website where user can enter the specified location where he or she wants to travel and then our maps will locate the place or destination and then our map will provide the shortest route of the destination with the visual images or videos of the important landmarks which can be easily viewable by traveler.

The study is to make a website where each and every Visual photos or videos of every landmarks is present not entire the city but across the state. This is our future scope. We also want that traveler can easily reach the destination and also faster. Our project main scope is to reduce the time and wastage of petroleum using videography technology i.e. providing visual images or photos of landmarks that are easily viewable by any person.

2. EXPERIMENTAL PROGRAM

After Mumbai, Pune and Nagpur is the third-largest city in Maharashtra, with an estimated population of over 2.5 million.

When it comes to traffic, Nagpur is renowned for having an effective rail, road, and air transportation infrastructure. The city has excellent transit links to different regions of India. Additionally, Nagpur has an international airport that links the city to other nations.
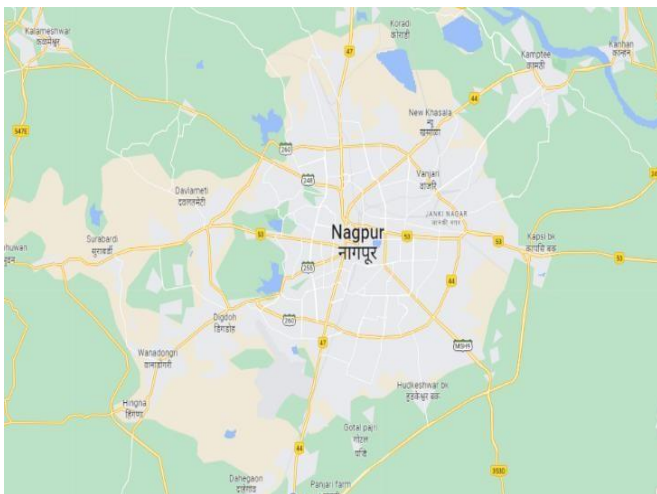

Fig -1: Map of Nagpur city

2.1 SELECTION OF AREA FOR ROUTE MAPPING

First we will have to select a area on which we can map the route. When selecting a route map, one of the first and most important steps is to select an area on which to map the route. This area should be chosen based on a variety of factors, including the availability of data and resources and geography of area. Data resource such as landmarks, roads anything within the routes.

ROUTES THAT WE SELECTED

❖ **Junction** Anjuman College Nagpur

[1]   Anjuman to Nagpur Airport (Sonegaon, Nagpur).

[2]   Anjuman to Itwari Market (Itwari Nagpur).

[3]   Anjuman to Futala University (Near Futala lake).

[4]   Anjuman to Koradi Temple (Koradi road).

[5]   Anjuman to Automotive metro station (Automotive square).

2.2 SELECTION OF LAND MARKS FOR ROUTE MAPPING

The selection of landmarks for route mapping is an essential step in creating an accurate and useful route mapping video. It involves defining the project's objectives, identifying the target audience, visualizable photos and the desired outcome of the project, identifying the landmarks that are relevant to the project, determining their visibility, and recognizability and planning the logistics of capturing photos and videos of them.

This includes scouting the locations to determine the best angles and lighting conditions for capturing high-quality footage, and coordinating with local authorities or property owners to ensure that the capture process goes smoothly and without interruption. The selection of landmarks for route mapping is an essential step in creating an accurate and useful route mapping video.

By considering factors such as the visibility and recognizability of landmarks, their location, and their relevance to the audience, the resulting map provides valuable information that is easy to understand and follow.

2.3 CAPTURING PHOTOS AND VIDEOS FOR EASY NAVIGATIONFOR ROUTE MAPPING

Capturing photos and videos of landmarks and key points along the route is essential for creating a visual guide for navigation and accurate mapping. GPS- enabled cameras are expensive, so alternative methods such as manually tagging each photo and video with location data are also available.

Fig -2: Selection of Land Marks and Capturing Photos.

It is important to focus on capturing key landmarks and points of interest alongthe route, as well as signs and other markers along the route. By using GPS-enabled cameras or manually tagging each photo and video with location data, we can create a visual guide for navigation, accurate mapping, and sharing the route with others.

2.4 MERGING PHOTOS & VIDEO FOR MAPPING

Merging photos and videos can be a powerful way to create a comprehensive visual record for mapping in a project. To merge photos and videos, we need to use specialized software that allows us to combine different media types. Once we have merged our photos and videos, we can export the final product as a video file.

Video is an excellent tool for visualizing maps and providing a more immersive experience for viewers. It can capture a wide range of actions, from the subtle movements of nature to the fast-paced action of sports, giving viewers a more immersive and realistic experience. Videos are an effective and engaging medium for visualizing information, offering a unique way of conveying information that can captivate and engage audiences.

2.5 ADDING IMAGES, VIDEO & ROUTE DATA TO DATABASE

The most important details in this text are the steps needed to add images and videos to a database. This can be achieved by creating a table in the database that includes the necessary fields for storing image and video data, such as file name, file type, file size, and file location. Additionally, a server-side scripting language such as JavaScript is used to upload the multimedia files to the database.

Additionally, route data is stored in the database to create interactive and informative maps for the project. Finally, a video player library such as Video.js or Play can be used to play videos on the website. By adding images, video, and route data to the database, the project can greatly enhance the functionality and appeal of the project, creating a rich and engaging multimedia experience for the user.

3. METHODOLOGY OF EXPERIMENT

On our website, there is a page where visitors may choose their starting place and final destination for a journey. The page uses the responsive Bootstrap 4.3.1 framework and has a dark mode design. Two dropdown choices on the form let you choose the beginning and ending points, respectively. After the form is submitted, a script is run to process the data and carry out an additional action not mentioned in the present code.

3.1 DESIGN

The website has a slick, contemporary layout with a dark color palette. The form's max-width and min-width are both 500px, and it includes a border with a 1px thickness and the color #555555. The form-group labels are styled with a margin-bottom of 5px and a display of block. The padding for the select elements is 12 px and 20 px, and their width is 100%. The select element's background image is an ion icons-provided down arrow icon. The form's background-size and appearance are set to 20px by 20px, and the submit button is 100% wide with a background color of #00bfff and a font color of #f5f5f5. The text-align has been set to centre, and the padding is 12px 20px. There is a transitional effect applied to the background-color property, and the text decoration is nonexistent. The labels for the starting point and destination select elements are styled with a font awesome icon of a map marker.

3.2 WORKING

For demo purpose your website is available locally and not global so as of now people can only access this website if they have it in their computers locally. After the website is tested and approved the website will be making globally so everyone can access and use our project. After the user loads our project in their browser like chrome, brave, internet explorer, etc. If your net speed is slow then the website will show a loading screen till the project is not fully loaded into the browser after the website is fully loaded. You will see the name of the project at the center along with a form and a map just next to the form. The form will consist of two inputs one for the starting point and the other for destination or end point. The starting pointinput will be disabled because we have taken our college as the center so the starting point will always be the starting point. When click on destination point input multiple

option will appear, they are the location that the user can go to.

After the user clicks a destination and presses go button. The control will go to the JavaScript function which is assigned with the form. The function will retriever the information like the starting point and the end point and then provides this information to the Google maps. The Google maps will provide destination or end point information. After this the map which was showing our college at the start will now show the route to the destination or end point. The form will also get changed, now it will have two new fields one for the time required to go to that station and the over will show the distance between our college that is the starting point and the destination selected by the user. After sometime a video will be played which will show the route from the starting point and destination orend point. After the video is played the user will be redirected to the Google maps app for route. Now as the user knows the route that was played in the video, he or she will follow that route and the Google map will adjust the route according.
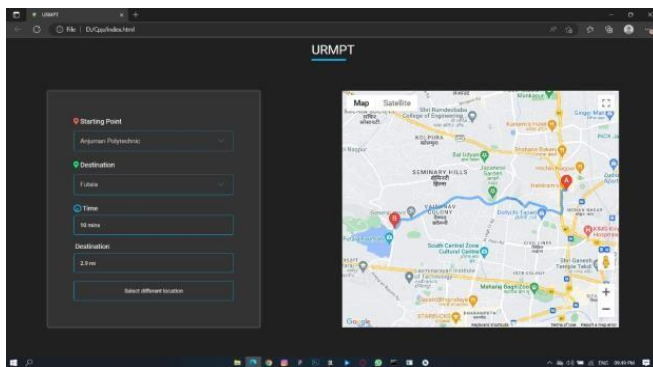

Fig -3: Website UI

4. TESTS CONDUCTED

1. Checked that the starting point field is disabled because user cannot change the starting point.

2. Checked whether the end point or destination point field can be clicked by the user.

3. Checked whether the entire destinations are included in the end point or destination field.

4. Checked whether the go button is clickable that is the user can click the button.

5. Checked that after the user selected the end point or destination and clicks the go button then the map is updated according.

6. Checked that two new fields are visible to the user that are time and distance after go button is clicked.

7. Checked that the time and distance field are not changeable and they show time and distance.

8. Checked that the map can be zoomed in and zoomed out by the user. Checked that the video is played.

9. Checked that after the video is played the user is redirected to the Google maps app.

10. Checked that the correct video is played.

5. RESULTS AND DISCUSSION

1. The starting point field is disabled and the user cannot change the starting point.

2. The user can click on the destination field and change it.

3. The entire required destinations are included in the end point or destination field.

4. The go button can be clicked by the user and its calls the JavaScript function properly.

5. The map takes some time to update but it properly updates according to the destination specified by the user.

6. Two new fields gets displayed as the user clicks on the go button.

7. The user cannot change the time and destination field.

8. The map gets zoomed in after user clicks plus button and the map gets zoomed out after user clicks minus button.

9. The video is played automatically after go button isplaced

10. After the video is finished the user is redirected to Google maps app.

11. Correct video is played when user presses go button.

5.1 ADVANTAGES

5.1.1　Wealth of Information

1. Our project provides the layout of roads, the locations of cities and towns, state boundaries,

geographical features, restaurant reviews and satellite images with video graphic Technology.

5.1.2 We reach our destination faster

1. Our project gives you directions for trips by car, bike, or public transportation in shortest distance, shortest in period of time.

2. Our project shows the shortest root for your destination so that the user can reach his destination as early as possible.

5.1.3 Explore Places with videos

1. Our project shows the video of the landmark while travelling

2. It makes easy for the user for understanding the routes and to reach his destination.

5.1.4 Easy Navigation

1. Our project makes it easy to navigate and find your way to the destination with turn -by-turn direction.

5.1.5 Visual Representation

1. Maps provide a visual representation of geographic information, making it easy to understand and analyze complex data, including patterns, relationships, and trends.

2. It shows the proper routes and present in easy way to user so it become easy for the user to travel in unknown place city, state.

5.2 LIMITATIONS

5.2.1 Dependence on internet connection

1. It requires an internet connection to function properly, which can be a problem in areas with poor connectivity or when traveling to other countries where roaming charges may apply.

5.2.2. Limited accessibility

1. As our project is in developing phase so it can be access in limited areas. There is limitation in the features, we can use only limited features because it is in developing phase.

6. CONCLUSIONS

In conclusion, our project is a highly useful. It allows users to easily search for locations, get directions, view satellite imagery, and even explore new places through features such as Street View. it is available on various devices including desktop computers, Smartphone's, and tablets. It is a updating of Google maps so that it can show an accurate direction of the location mentioned by the user, and makes easy for the user to travel in unknown city, state through videography technology Overall, our project has revolutionized the way we navigate and explore the world around us.

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