Mapping of Tourism Place in Puducherry Using Gis

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ABSTRACT

On considering the tourism characteristic in India, we have come to a conclusion to create a map which consists of tourism places within the region. Whereas we had selected the Puducherry territory due to it is French collaboration and also its infrastructure which capture the tourist attraction. The tourist on that place is more as compare to other district and the specification for the outsiders had been more favourable to get repetition for the place. In which most of the tourist chosen the Puducherry as there recreation place on their vacation because they had made the Puducherry as their second home town. Most of the tourist have coming from the France due to the collaboration condition. To make the tourism map first we need the latitude and also the longitude co-ordinates of the confidential tourism places on Puducherry. And using the co-ordinates we create the map with the help of the ARCGIS software.We created the map which consist of the tourism places in the Puducherry to give an over view of the place and also helps them in navigation, prioritizing, planning, budgeting, and etc. We are using ARCGIS software to create the map in the user friendly manner so that the user would not feel uncomfortable to use the application.

KEYWORDS: ARCMAP, ARCSCENE, ARCGIS PRO, GOOGLE SKETCHUP and ARCGIS ONLINE.

INTRODUCTION

Mapping is the creation of map, a graphic symbolic representation of the significant features of a part of the earth. Two types of mapping areavailable cartography andweb mapping. A GIS-graphical information system is a system designed to capture, store, manipulate, analyse, manage, and present all type of data. We can map the spatial location of real-world features and visualize the spatial relationships among them. Example:below we see a map of agricultural districts (in green) layered over soil types. We can see visual patterns in the data by determining what soil types are best suited for agricultural districts.

Geographic Information (land information and spatial information) is a Information that can be associated with a place name,street address,section/township,a zipcode,or coordinates of lattitude and longitude.A multitude of government unctions required geo graphic Informattion;atleast 70% of all information used by local goverments is geo graphically referenced. For example, property records and assessment, plannind and zonning, pemit tracking, natural resourse management, infrastructure and transportation management, economic development planning, and health and public safty. All of these appplications consider the location of certain features on the landscape in relation to other features. For instant, in assessment, location of soil types related to property parcels is consier, where as in planning and zoning, the location of animals confinement facilities related residdencial areas might be relavent. A geographic information system(GIS) allows the user to examin and visualize these relationships.

AIM OF THE PROJECT:

To prepare the map for tourism places in puducherry using ARCGIS software.

SCOPE OF THE PROJECT:

- To help in navigation process give an detail of the location.
- To give a correct route of main station to tourist location and also help the tourist to find the finest location to visit.

- To give the full features of the tourist places and 3D view.To give an easy access to tourist through mobile API.

OBJECTIVE OF THE PROJECT:

- To prepare a list of tourism places.
- Share the location via whatsapp to the here map solution.
- Collecting of latitude & longitude points and creating the map shape file about puducherry updating the points for ARCGIS software.
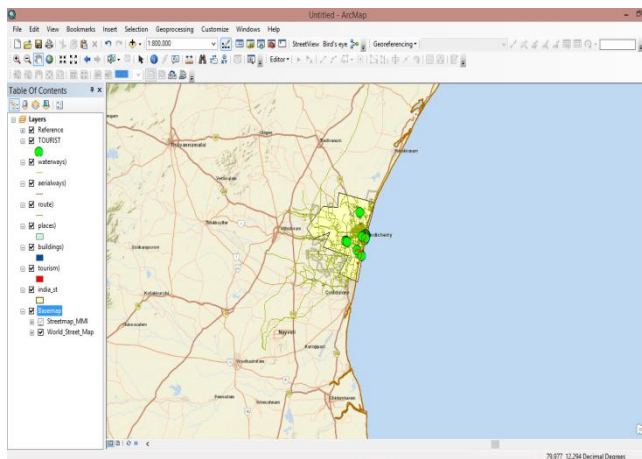- Prepared map will be change into the API format.
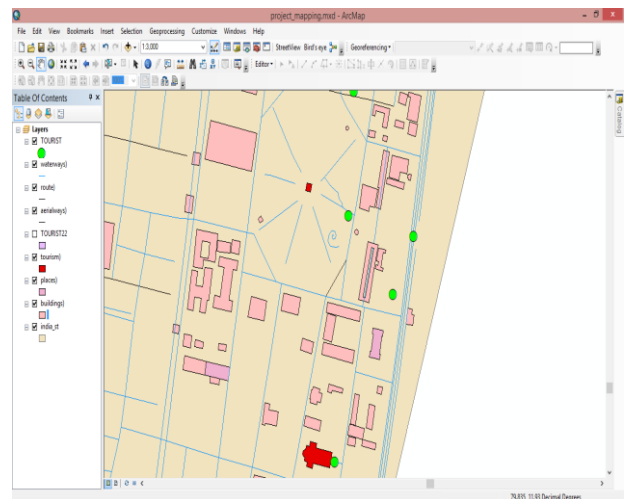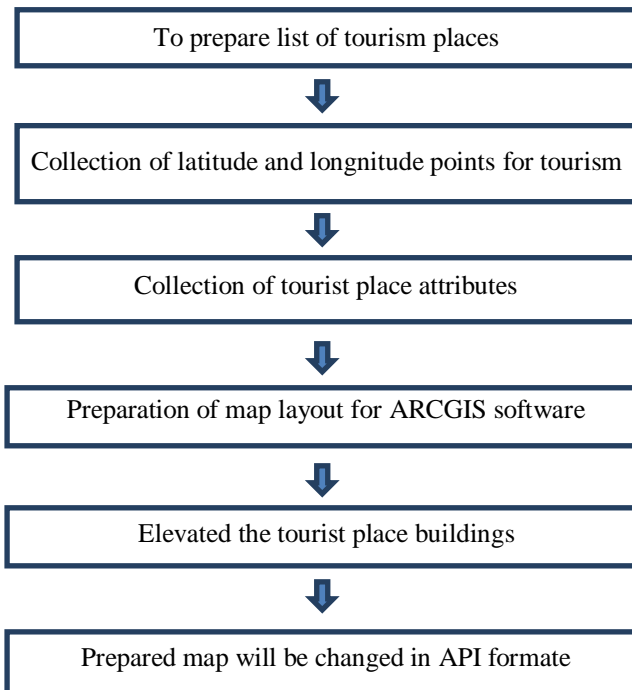

Fig. 1:Sample of map

METHODOLOGY

Fig. 2: Basic 2D map layout

ARCGIS SOFTWARE

- **ARCMAP**
- **ARCSCENE**
- **ARCGIS PRO**
- **ARCGIS ONLINE**

Fig. 3: Types of ARCGIS software's

OTHER SOFTWARE USED

- **GOOGLE EARTH**
- **GOOGLE SKETCHUP**

Fig.4: Google earth picture

* **VECTOR DATA** - Vector data consists of points, lines, paths and polygons. Once you import vector data into the Google Earth application, you can change its appearance or content in the same way you would when editing place marks andfolders.
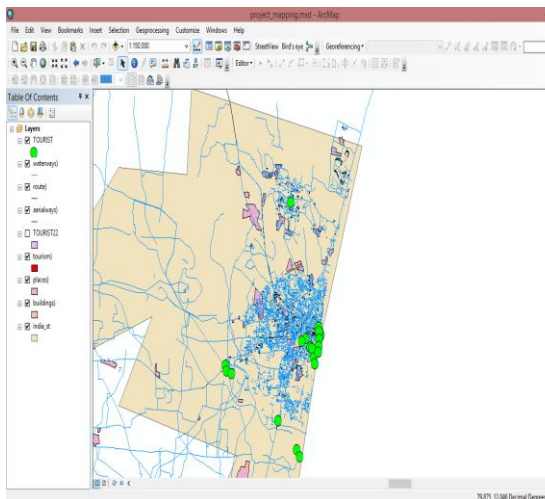

Fig.5: Vector data

* **RASTER DATA**- You can import imagery data such as aerial maps or topographical maps and have the imagery projected properly over the base imagery in the 3D viewer. For this to work, the imagery file itself must be in the proper format. Imagery of this type is referred to as GIS imagery.

Fig. 6: Raster data

3.4.6 Steps involved in creating a map layout (2D):

STEP 1: Using the ARCMAP we are creating the base map for Puducherry.

STEP 2: Use the edit option on the ARCMAP and digitalize the map layout.

STEP 3: The building structures had been referred as polygons, Roads as polyline and Points as landmark on the layout of map.

STEP 4: Add the specification of each structures in the attribute table for each structures.
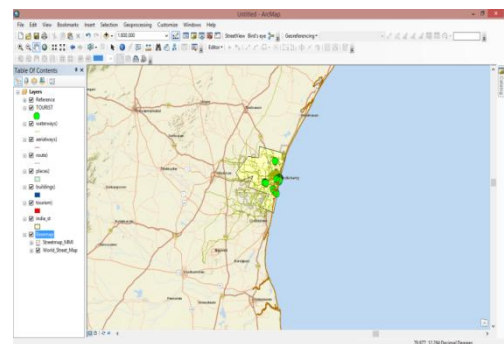

Fig. 6: 2D map layout

3.4.7 Steps involved in creating a map layout (3D):

STEP 1: Upload the map layout created by the ARCMAP to the ARCSCENE.

STEP 2: Elevate the height of the building structure by using the extrusion option.

STEP 3: Special structures had been created by means of using GOOGLE SKETCHUP software.

STEP 4: Using the ARCSCENE the building structures had converted into 3 dimensional structures.
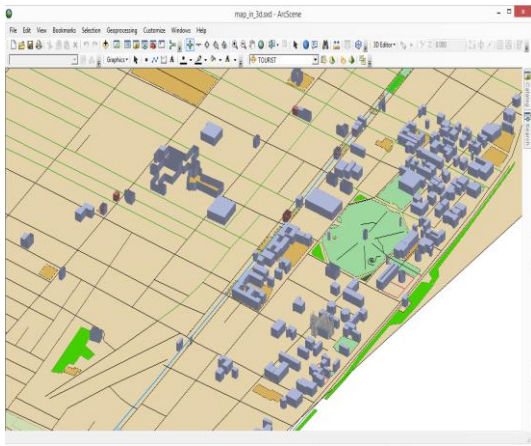

Fig. 7: 3D map layout

APPLICATIONOF PROGRAM INTERFACE:

An application program interface (API) is a set of routines, protocols, and tools for building software applications. Basically, an API specifies how software components should interact. Additionality, APIs used when programming graphical user interface (GUI) components. A good API makes it easier to develop a program by providing all the building blocks. A programmer then puts the blocks together.

HTML CODE:

```
<html>

<head>

<meta name="viewport" content="initial-scale=1.0,
width=device-width" />

<script
src="https://jayadharshan.maps.arcgis.com/home/organ
ization.html"

 type="text/javascript" charset="utf-8">

</script>

<script src="
https://jayadharshan.maps.arcgis.com/home/organizati
on.html"
```

```
type="text/javascript" charset="utf-8">
</script>
</head>
<body>
<div style="width: 640px; height: 480px"
id="mapContainer"></div>
<script>
   // Initialize the platform object:
   var platform = new arc.service.Platform({
   'app_id': '{WSvVGQOjkUdCPHKYTpq9}',
   'app_code': '{ zrB_WfQxHXU-oC73-xYnwg }'
   });

   // Obtain the default map types from the platform
object
   var maptypes = platform.createDefaultLayers();

 // Instantiate (and display) a map object:
   var map = new arc.Map(
   document.getElementById('mapContainer'),
   maptypes.normal.map,
   {
    zoom: 10,
    center: { lng: 13.4, lat: 52.51 }
   });
</script>
</body>
</html>
```

PURPOSE OF API:

- Map with Driving Route from A to B
- Map with Pedestrian Route from A to B
- Map with Route from A to B using Public Transport
- Search for a Location based on an Address
- Search for a Location given a Structured Address
- Search for the Address of a Known Location
- Search for a Landmarks.

MAP WITH ROUTE A TO B:

```
// Instantiate a map and platform object:

var platform = new arc.service.Platform({

 'app_id': '{WSvVGQOjkUdCPHKYTpq9}',

 'app_code': '{zrB_WfQxHXU-oC73-xYnwg }'
```

```
});

// Retrieve the target element for the map:

var targetElement =
document.getElementById('mapContainer');

// Get the default map types from the platform object:

var defaultLayers = platform.createDefaultLayers();

// Instantiate the map:

var map = new
arc.Map(document.getElementById('mapContainer'),

  defaultLayers.normal.map,

  {

  zoom: 10,

  center: { lat: 11.9214, lng: 79.61111 }

  });

// Create the parameters for the routing request:

var routingParameters = {

  // The routing mode:

  'mode': 'fastest;car',

  // The start point of the route:

  'waypoint0': 'geo!11.9214, 79.61111',

  // The end point of the route:

  'waypoint1': 'geo!11.93694, 79.83463',

  // To retrieve the shape of the route we choose the route

  // representation mode 'display'

  'representation': 'display'

};

// Define a callback function to process the routing response:

var onResult = function(result) {

  var route,
```

```
  routeShape,

  startPoint,

  endPoint,

  linestring;

  if(result.response.route) {

  // Pick the first route from the response:

  route = result.response.route[0];

  // Pick the route's shape:

  routeShape = route.shape;


  // Create a linestring to use as a point source for the route line

  linestring = new arc.geo.LineString();

// Push all the points in the shape into the linestring:

  routeShape.forEach(function(point) {

    var parts = point.split(',');

    linestring.pushLatLngAlt(parts[0], parts[1]);

  });

  // Retrieve the mapped positions of the requested waypoints:

  startPoint = route.waypoint[0].mappedPosition;

  endPoint = route.waypoint[1].mappedPosition;

// Create a polyline to display the route:

  var routeLine = new arc.map.Polyline(linestring, {

    style: { strokeColor: 'blue', lineWidth: 10 }

  });

  // Create a marker for the start point:

  var startMarker = new arc.map.Marker({

  lat: startPoint.latitude,

  lng: startPoint.longitude
```

```
  });

// Create a marker for the end point:

  var endMarker = new arc.map.Marker({

    lat: endPoint.latitude,

    lng: endPoint.longitude

  });



  // Add the route polyline and the two markers to the
map:

  map.addObjects([routeLine, startMarker,
endMarker]);

  // Set the map's viewport to make the whole route
visible:

  map.setViewBounds(routeLine.getBounds());

  }

};

// Get an instance of the routing service:

var router = platform.getRoutingService();

// Call calculateRoute() with the routing parameters,

// the callback and an error callback function (called if
a// communication error occurs):

router.calculateRoute(routingParameters, onResult,

  function(error) {

    alert(error.message);

  });
```

SEARCH FOR A LANDMARK:

```
/**
 * Calculates and displays the location of the 'Gandhi
statue'
 * using a landmark geocoding search
 *
 *
```

```
 * A full list of available request parameters can be
found in the Geocoder API documentation.
 * see: http://developer.arcgis online.com/rest-
apis/documentation/geocoder/topics/resource-
search.html
 *
 * @param  {arc.service.Platform} platform
 */
functionlandmarkGeocode(platform){
var geocoder = platform.getGeocodingService(),
   landmarkGeocodingParameters ={
     searchtext:'mahatma Gandhi statue',
     jsonattributes :1
};

  geocoder.search(
    landmarkGeocodingParameters,
    onSuccess,
    onError
);
}

/**
 * This function will be called once the Geocoder
REST API provides a response
 * @param {Object} result        A JSONP object
representing the  location(s) found.
 *
 * see: http://developer.arcgis online.com/rest-
apis/documentation/geocoder/topics/resource-type-
response-geocode.html
 */
functiononSuccess(result){
var locations = result.response.view[0].result;
/*
 * The styling of the geocoding response on the map is
entirely under the developer's control.
 * A representitive styling can be found the full JS +
HTML code of this example
 * in the functions below:
 */
addLocationsToMap(locations);
addLocationsToPanel(locations);
// ... etc.
}

/**
 * This function will be called if a communication error
occurs during the JSON-P request
 * @param  {Object} error  The error message
received.
```

```
*/
functiononError(error){
alert('Ooops!');
}
```


Fig 8.API MAP VIEW

Fig 9. ARC SCENE VIEW

RESULT AND DISCUSSION

We have created two dimensional map and three dimensional maps which represents the tourism places for Puducherry and this maps are converted to the API format. The created API is navigating the routes for different locations. And also help the tourist to find the finest location to visit.To give the full features of the tourist places and 3D view.

The API will be created to using the javascripted codings and that codings are loaded to ARCGIS PRO software. And that API will be correctly run.

The major objectives of the map creation of the tourisum places of puducherry had been rectified by using ARCGIS.

- The list of tourism plces in the puducherry had been taken.
- The lttitude and longitude of the tourism places had been collected.
- Shape file of the places have created by using the ARCGIS appilication.
- The map is created by using the ARCGIS.
- In which the API was created in the user friendly way.
- The navigation by using this API will satisfy the user.
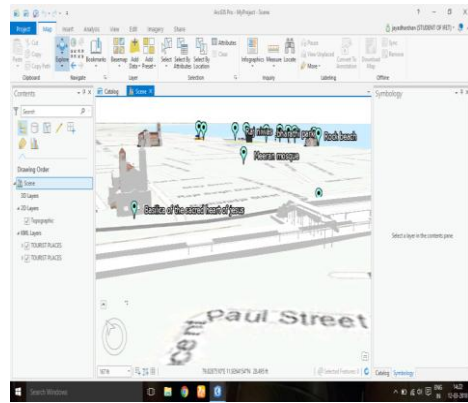- Time had been saved by using this appilication.

CONCLUSION:

During the entire duration of our project. we have collected all the details about our project data and work has been processed as per we predicted. We were using the software's like ARCMAP, ARCSCENE, GOOGLE EARTH, GOOGLE SKETCHUP and ARCGIS PRO. The map is created and converted to API format. The API is helpful in Navigation, Reduction in theft, Reduce taking wrong turn, Time saving etc..

- This API had been created in order to serve the user in a user friendly way
- Whereas the API helps in navigating the route of the tourism places in the Puducherry.
- In which the nearest tourism place had been preferred by this map.
- It will helpful for user to finding routes and seeing three dimensional views of the tourism places.

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