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BRANCH : COMPUTER ENGINEERING(A1)
SUBJECT : Ubiquitous Computing
EXPERIMENT - 2
Location based messages

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Experiment - 2 :-

Aim - To develop an application for location-based messages

Theory - The term 'ubiquitous' meaning appearing or existing anywhere. Ubiquitous computing is also known as pervasive computing, refers to concept of embedding computing devices and systems into the environment around us, making them invisible and seamlessly integrated into our daily lives. The idea is to create an environment in which devices are able to communicate with one another and with us, without requiring us to consciously interact with them.

Location based ubiquitous computing is a type of pervasive computing that utilizes location-based services (LBS) to provide personalized information and services to users based on their geographical location. Location-based services rely on technologies such as GPS, Wi-fi and bluetooth to determine a user's location and provide them with relevant information. One such application is the ability to show nearby restaurants based on user's current location. In this experiment, we will be developing an application that uses location-based messaging to show nearby restaurants to a user. LBS can be used to send personalized promotions and offers to customers based on their location, preferences and purchase history.

Location-based ~~mapping~~ messaging is a type of messaging system that allows user to send and receive messages based on their physical location. This technology relies on the user's device or app to determine their location using GPS, Wi-fi or cellular data and then users that information to provide location-based services. Location-based mapping is a powerful and useful tools for businesses and app developers to provide personalized and contextually relevant messaging to users based on their physical location. One use case is for social networking or apps which can use location data to suggest nearby matches or connect users with similar interests who are in same area.

Mapping is crucial component of location based services as it allows user to visualize their location and navigate to nearby points of interests. In LBS, maps are often used to display real-time information about the user's surroundings, such as traffic conditions, weather and nearby business or landmarks. It is used in GIS a system designed to capture, store, manipulate, analyze and manage geospatial data. Digital mapping services such as google maps and openstreetmap provide detailed and up-to-date maps and geographic data to developers.

Code :

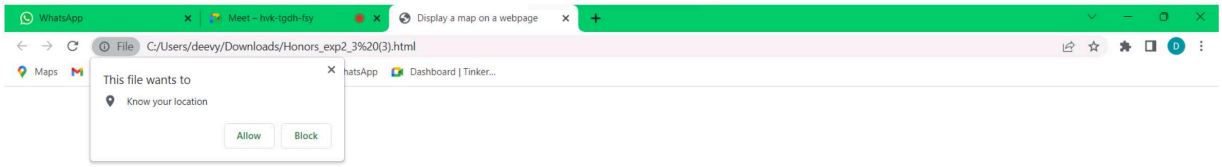
```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8">
<title>Display a map on a webpage</title>
<meta name="viewport"
content="initial-scale=1,maximum-scale=1,user-scalable=no">
<link href="https://api.mapbox.com/mapbox-gl-js/v2.13.0/mapbox-gl.css"
rel="stylesheet">
<script
src="https://api.mapbox.com/mapbox-gl-js/v2.13.0/mapbox-gl.js"></script>
<script
src="http://ajax.googleapis.com/ajax/libs/jquery/1.9.1/jquery.min.js"></scrip
t>
<style>
body { margin: 0; padding: 0; }
#map { position: absolute; top: 0; bottom: 0; width: 100%; }
</style>
</head>
<body>
<div id="map"></div>
<script>
   var lat, lon;
   //var x = document.getElementById("demo");
   function getLocation() {
     if (navigator.geolocation) {
       navigator.geolocation.getCurrentPosition(showPosition);
     } else {
       //x.innerHTML = "Geolocation is not supported by this browser.";
```

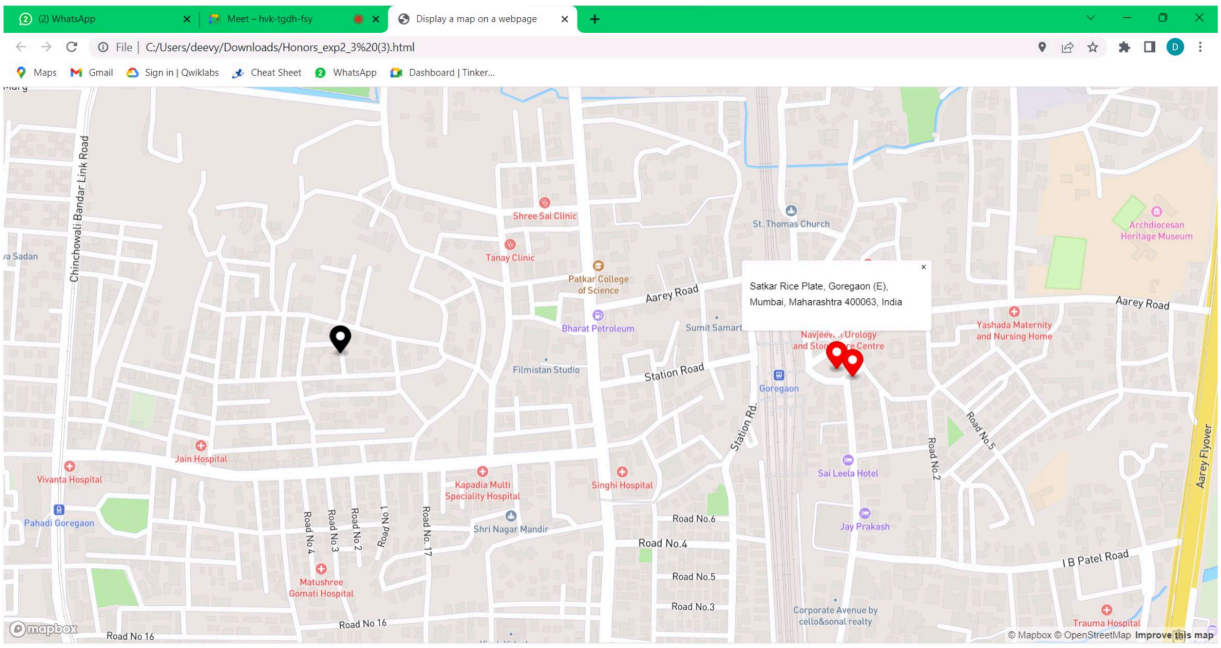
```
    }
   }

   function showPosition(position) {
    lat = position.coords.latitude;
    lon = position.coords.longitude;
    console.log(lat, lon);
    plt(lon,lat);
   }
   </script>
<script>
   getLocation();
   function nearby(lon, lat, map_obj,val){
    let txt = "museum";
     if (val <= 15){
      txt = "amusement";
     }
     else if ((val > 15) && (val <= 45)){
      txt = "theater";
     }
     else if ((val > 45) && (val <= 60)){
      txt = "tour";
     }
     else{
      txt = "restaurant";
     }
     const settings = {
        "async": true,
        "crossDomain": true,
```

```
        "url":
"https://api.mapbox.com/geocoding/v5/mapbox.places/"+txt+".json?type=poi&proximity="+lon+"%2C"+lat+"&access_token=your token",
        "method": "GET",
        "headers": {
          "Accept": "*/*",
          //"User-Agent": "Thunder Client (https://www.thunderclient.com)"
        }
      };
      $.ajax(settings).done(function (response) {
        console.log(response.features);
        response.features.map((item)=>{
          console.log(item.center.reverse());
          var marker = new mapboxgl.Marker({ color: 'red' })
          .setLngLat(item.center.reverse())
          .setPopup(new mapboxgl.Popup().setHTML("<p>"+item.place_name+"</p>"))
          .addTo(map_obj);
        })
      });

  }

  function plt(lon,lat){
 mapboxgl.accessToken = 'your token';
  const map = new mapboxgl.Map({
    container: 'map', // container ID
    // Choose from Mapbox's core styles, or make your own style with Mapbox Studio
    style: 'mapbox://styles/mapbox/streets-v12', // style URL
```

```
        center: [lon, lat], // starting position [lng, lat]
        zoom: 20 // starting zoom

    });
    let foo = prompt('What is your age?');
    let val = parseInt(foo);
    nearby(lon,lat, map, val);
    const marker1 = new mapboxgl.Marker({ color: 'black' })
    .setLngLat([lon, lat])
    .setPopup(new mapboxgl.Popup().setHTML("<p>You are here! </p>"))
    .addTo(map);
}

</script>
</body>
</html>
```

Output :




(2) WhatsApp
Meet – hvk-tgdh-fsy
Display a map on a webpage
File | C:/Users/deevy/Downloads/Honors_exp2_3%20(3).html
Maps
Gmail
Sign in | Qwiklabs
Cheat Sheet
WhatsApp
Dashboard | Tinker...
Chinchowali Bandar Link Road
Shree Sai Clinic
Tanay Clinic
Patkar College of Science
Bharat Petroleum
Sumit Samart
Filmistan Studio
Aarey Road
Station Road
Station Rd.
Satkar Rice Plate, Goregaon (E), Mumbai, Maharashtra 400063, India
St. Thomas Church
Archdiocesan Heritage Museum
Yashada Maternity and Nursing Home
Goregaon
Sai Leela Hotel
Jay Prakash
Jain Hospital
Vivanta Hospital
Pahadi Goregaon
Kapadia Multi Speciality Hospital
Singhi Hospital
Shri Nagar Mandir
Matushree Gomati Hospital
Road No.6
Road No.4
Road No.5
Road No.3
Road No 16
Road No.2
Road No.5
I B Patel Road
Aarey Flyover
Corporate Avenue by cello&sonal realty
Trauma Hospital
mapbox
© Mapbox © OpenStreetMap Improve this map

Conclusion -

Location based mapping and messaging are powerful tools that can help user find nearby points of interest, such as restaurants or shops and communicate with other users in that area. By integrating location data with mapping and messaging functionalities, these systems can enhance the user experience and provide useful information in real-time.