Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur - 441 110
NAAC A++
Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu

Department of Computer Technology

Vision of the Department

To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.

Mission of the Department

To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

Session 2025-2026

Vision: Dream of where you want.	**Mission:** Means to achieve Vision

Program Educational Objectives of the program (PEO): (broad statements that describe the professional and career accomplishments)

PEO1	**Preparation**	**P: Preparation**	**Pep-CL abbreviation pronounce as Pep-si-lL easy to recall**
PEO2	**Core Competence**	**E: Environment (Learning Environment)**	
PEO3	**Breadth**	**P: Professionalism**	
PEO4	**Professionalism**	**C: Core Competence**	
PEO5	**Learning Environment**	**L: Breadth (Learning in diverse areas)**	

Program Outcomes (PO): (statements that describe what a student should be able to do and know by the end of a program)

Keywords of POs:
Engineering knowledge, Problem analysis, Design/development of solutions, Conduct Investigations of Complex Problems, Engineering Tool Usage, The Engineer and The World, Ethics, Individual and Collaborative Team work, Communication, Project Management and Finance, Life-Long Learning

PSO Keywords: Cutting edge technologies, Research

"I am an engineer, and I know how to apply engineering knowledge to investigate, analyse and design solutions to complex problems using tools for entire world following all ethics in a collaborative way with proper management skills throughout my life." *to contribute to the development of cutting-edge technologies and Research*.

Integrity: I will adhere to the Laboratory Code of Conduct and ethics in its entirety.

Name and Signature of Student and Date
(Signature and Date in Handwritten)

Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur - 441 110
NAAC A++
Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu
Department of Computer Technology

Vision of the Department

To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.

Mission of the Department

To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

Session	**2025-26 (ODD)**	**Course Name**	**PE-I - Geo-Intelligence for Smart IoT Devices Lab**
Semester	**5**	**Course Code**	**23IOT1523**
Roll No	**36**	**Name of Student**	**Darshil D. Amalkar**

Practical Number	**05**
Course Outcome	Apply and demonstrate the use of proprietary and open-source GIS tools (e.g., QGIS) for creating, visualizing, and managing spatial datasets.
Aim	Collect real time coordinates (5–10 points) using Google Earth and import into QGIS.
Problem Definition	Collect any real time coordinates (5–10 points) based on theme of your choice using Google Earth and import into QGIS.
Theory (100 words)	**The Theory: What is Google Earth, really?** Think of Google Earth not just as a map, but as a **digital twin of our planet**. It's a dynamic, interactive 3D globe built from a massive patchwork of satellite images, aerial photography, and geographic data. But how does it all work, and what makes it more than just a pretty picture? The core concept is **georeferencing**. Every single pixel you see in Google Earth has a real-world coordinate—a specific latitude and longitude—attached to it. This is what allows you to drop a pin on your house, measure the distance between Mumbai and Delhi, or see the exact location of the Eiffel Tower. But the real magic for data work lies in a special language it uses: **KML**. • **KML (Keyhole Markup Language):** This is the backbone of place-based data in Google Earth. Imagine you want to tell a friend about your favourite cafe. You wouldn't just give them the coordinates; you'd give them a name ("The Daily Grind"), maybe a description ("Best coffee in town!"), and then the location. KML does exactly this, but for computers. It's a simple text file that bundles a point's name, description, coordinates, and even its styling (like the colour of its icon) into one neat package. • **KMZ File:** You'll often see this, too. A KMZ file is simply a zipped (compressed) KML file. It's useful because it can also package custom images or icons along with the location data.

	So, when you create a "Placemark" in Google Earth, you are creating a small KML entry. When you save a collection of these placemarks, you create a KML file—a universal "address book" of locations that other mapping software, like QGIS, can read and understand perfectly. This KML file is the **bridge** that connects the user-friendly world of Google Earth to the powerful analytical world of Geographic Information Systems (GIS).
Procedure and Execution (100 Words)	Implementation Steps: **Part 1: The Pilgrimage - Collecting Coordinates in Google Earth** First, we will embark on a virtual pilgrimage across India to locate and pin each of the twelve sacred sites. 1. **Prepare Your Expedition Folder:** o Open **Google Earth Pro**. o In the "Places" panel on the left, right-click on "My Places". o Go to Add > Folder. o Name this folder **"12 Jyotirlingas of India"**. This step is vital to keep all your sacred points neatly organized and ready for a single export. 2. **Find and Pin Each Jyotirlinga (One by One):** We will now locate each temple. For every temple, repeat the following steps: o Use the **search bar** at the top left to find the temple (e.g., "Somnath Temple, Gujarat"). o Once the map flies to the location, click the **yellow pushpin icon** in the top toolbar to add a placemark. o A dialog box will appear. **Carefully drag the pin** from the centre of the screen to the most accurate position right over the temple's main building. o In the "Name" field of the dialog box, enter the temple's name. It's good practice to number them for clarity. o Click **OK**. Make sure the new placemark appears inside your "12 Jyotirlingas of India" folder. Here is the list to follow: 1. **Somnath** (Gujarat) 2. **Mallikarjuna** (Srisailam, Andhra Pradesh) 3. **Mahakaleshwar** (Ujjain, Madhya Pradesh) 4. **Omkareshwar** (Madhya Pradesh) 5. **Kedarnath** (Uttarakhand) 6. **Bhimashankar** (Maharashtra)

7. **Kashi Vishwanath** (Varanasi, Uttar Pradesh)
8. **Trimbakeshwar** (Nashik, Maharashtra)
9. **Vaidyanath** (Deoghar, Jharkhand)
10. **Nageshwar** (Dwarka, Gujarat)
11. **Ramanathaswamy** (Rameswaram, Tamil Nadu)
12. **Grishneshwar** (Aurangabad, Maharashtra)

3. **Export Your Sacred Data:**
   - Once you have all 12 placemarks saved in your folder, right-click on the **"12 Jyotirlingas of India" folder** itself.
   - Select **"Save Place As..."**.
   - Choose a convenient location on your computer.
   - Set the "Save as type:" to **KML (*.kml)**.
   - Name the file something clear, like Jyotirlingas_of_India.kml, and click **Save**.

Part 2: The Darshan - Visualizing the Jyotirlingas in QGIS

Now, let's bring our collected data into QGIS to visualize the pan-India distribution of these holy sites.

1. **Launch QGIS and Set the Scene:**
   - Open QGIS.
   - To see the map of India for context, go to the "Browser" panel, expand "XYZ Tiles", and double-click **"OpenStreetMap"** to load it as your basemap.
2. **Import Your KML File:**
   - From the main menu, navigate to Layer > Add Layer > **Add Vector Layer...**.
   - The "Data Source Manager" window will appear.
   - Ensure the source type is **File**. Click the **...** button next to "Vector Dataset(s)".
   - Find and select your saved Jyotirlingas_of_India.kml file.
   - Click **Add** and then **Close** the window.
3. **Behold the Result:** The 12 Jyotirlingas will now appear as points on your QGIS map, scattered across the Indian subcontinent. You can immediately see their geographic spread, from the Himalayan heights of Kedarnath to the southern tip at Rameswaram.
   [Image showing the 12 Jyotirlinga points overlaid on the map of India within the QGIS interface]
4. **Check the Sacred Scriptures (Attribute Table):**

Vision of the Department

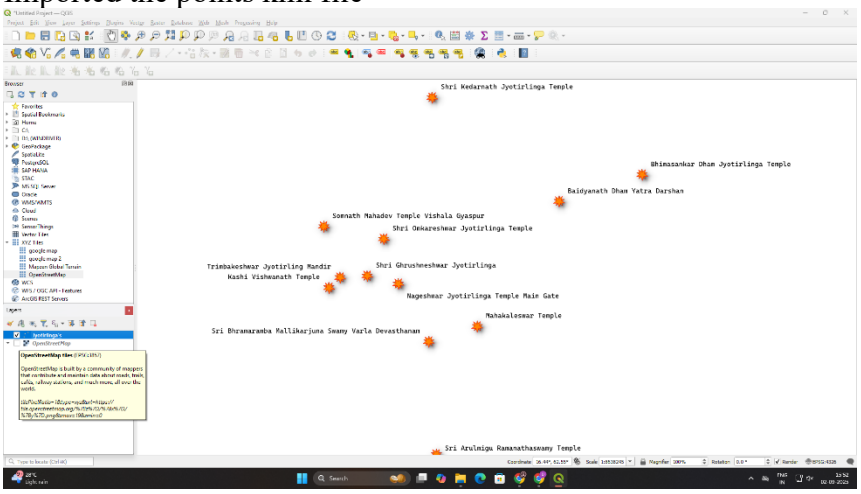
To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.

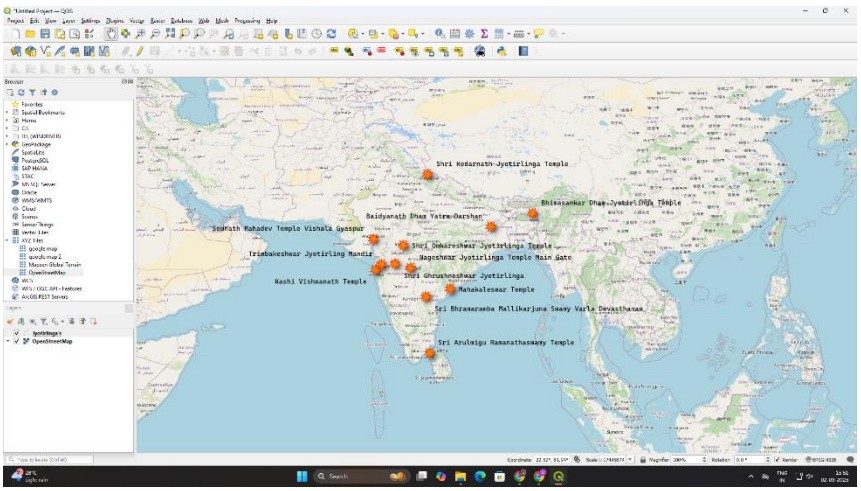
Mission of the Department

To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

- To confirm that all your data came through correctly, find your new Jyotirlingas_of_India layer in the "Layers" panel.
- Right-click on it and select **"Open Attribute Table"**.
- A table will pop up, showing you the names of all 12 Jyotirlingas that you meticulously entered in Google Earth.

Stepwise Screenshots with steps:
Imported the points kml file





Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur - 441 110
NAAC A++
Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu

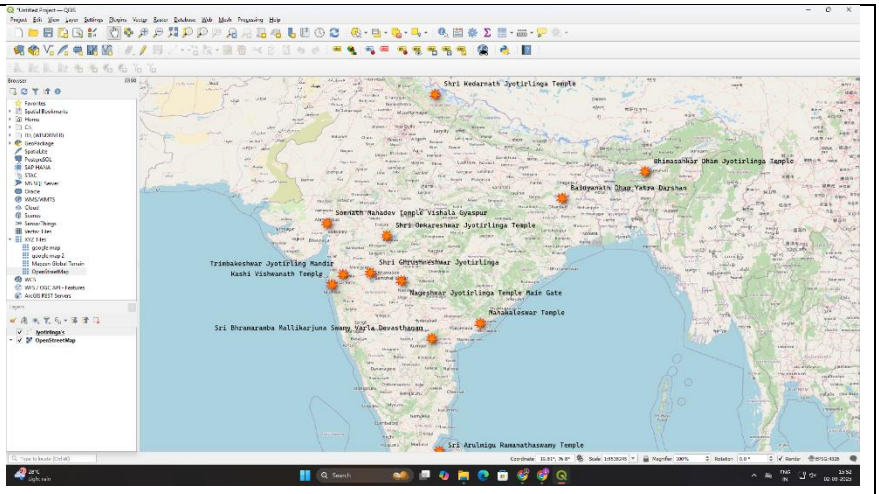
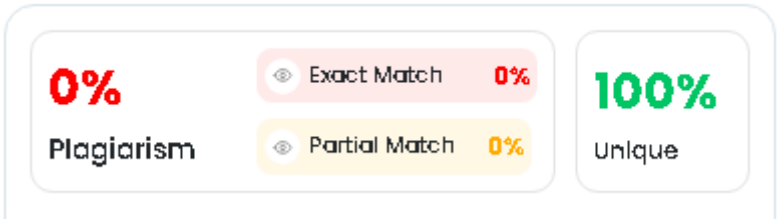
Department of Computer Technology

Vision of the Department

To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.

Mission of the Department

To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

	
Output Analysis	This discussion demonstrated a complete and foundational GIS workflow. We began by using a user-friendly tool, **Google Earth**, for the specific task of visual data collection. Then successfully bridged that data into a professional analysis environment, **QGIS**, using the standard KML format. Finally, we established the crucial difference between our primary data (the Jyotirlingas) and the **basemap (OpenStreetMap)**, which provides the necessary context to make the data meaningful and visually understandable.
Link of student GitHub profile where lab assignment has been uploaded	**https://github.com/Darshil-yup/GIS_Lab**
Conclusion	In conclusion, we successfully demonstrated a core GIS workflow from start to finish. We used Google Earth for simple data collection of the Jyotirlingas, transferred the data to QGIS for analysis, and layered it over an OpenStreetMap basemap. This highlighted the essential role of a basemap in turning raw coordinates into a meaningful and intelligible map.
Plag Report (Similarity index < 12%)	
Date	**02-09-2025**