ISO 9001:2015 Certified

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Web GIS Using OpenLayers Certificate Course

Course Overview

OpenLayers is a powerful open-source JavaScript library that enables developers to create interactive and customizable maps in web applications. It provides a wide range of features and capabilities for working with geospatial data and map visualization. Here's an overview of some key aspects of OpenLayers.

some key features and capabilities of OpenLayers:

- Map Display and Interaction: OpenLayers allows you to display maps and interact with them through zooming, panning, rotating, and other navigation controls. You can easily add overlays, markers, and vector layers to the map.
- Extensive Map Sources: The library supports various map sources, including popular ones like OpenStreetMap, Bing Maps, Google Maps, and many others. You can choose from a variety of base maps or create your own custom layers.
- Geospatial Data Support: OpenLayers can handle different geospatial data formats such as GeoJSON, KML, GPX, WKT, and many others. You can overlay and style these data layers on top of the base maps to visualize and analyze spatial information.
- Customization and Styling: OpenLayers provides a flexible API that allows you to customize various aspects of the map, including controls, interactions, layers, and styling. You can control the appearance of features, apply custom styles, and define interactions based on user actions.
- Projections and Coordinate Systems: OpenLayers supports various projections and coordinate systems, enabling you to work with data from different sources that use different spatial reference systems. It includes support for transforming coordinates between different projections.
- Integration with Other Libraries: OpenLayers can be easily integrated with other JavaScript libraries and frameworks like jQuery, React, and Angular. This flexibility allows developers to combine OpenLayers with their preferred tools and workflows.

Overall, OpenLayers is a versatile and widely-used library for creating web-based maps and geospatial applications. Its extensive features, flexibility, and open-source nature make it a popular choice among developers working with geospatial data and mapping.

Pre-Requisites

- HTML, CSS, and JavaScript: Familiarity with HTML, CSS, and JavaScript is essential for working with OpenLayers. You should have a good understanding of these web technologies to build the necessary web pages, style elements, and add interactivity.
- Web Development Concepts: It is beneficial to have a solid grasp of fundamental web development concepts like DOM manipulation, event handling, and asynchronous programming. OpenLayers leverages these concepts to interact with the map and handle user interactions.
- Geographic Information Systems (GIS) Basics: While not mandatory, having some knowledge of GIS concepts such as spatial data formats, coordinate systems, and map projections will be helpful when working with geospatial data in OpenLayers.
- Web Server: To run your OpenLayers application locally during development, you'll need a web server. You can use tools like Apache, Nginx, or even the built-in web server in your IDE. Alternatively, you can deploy your application to a remote web server for production.

well these prerequisites are beneficial, they are not mandatory. You can start learning WebGIS/OpenLayers and acquire the necessary skills and knowledge along the way.

Benefits of Learning Web GIS

Learning OpenLayers can provide several benefits for developers interested in web mapping and geospatial applications. Here are some key benefits of learning OpenLayers:

- Open-Source and Free: OpenLayers is an open-source library released under the BSD 2-Clause License. This means it is free to use, modify, and distribute. By learning OpenLayers, you gain access to a powerful mapping tool without any licensing costs.
- Cross-Platform Compatibility: OpenLayers is built using standard web technologies like HTML, CSS, and JavaScript. It is compatible with major web browsers, including Chrome, Firefox, Safari, and Edge, ensuring that your maps work across different platforms and devices.
- Rich Set of Features: OpenLayers offers a wide range of features and functionalities for creating interactive maps. It provides tools for map navigation, layer management, styling, spatial analysis, and more. With OpenLayers, you can create maps with various layers, overlays, markers, and custom styles.
- Extensibility and Customization: OpenLayers provides a flexible and extensible API that allows developers to customize and extend the library's functionality. You can add custom controls, interactions, and behaviors to meet the specific requirements of your mapping application.
- Support for Different Map Sources: OpenLayers supports multiple map sources, including popular providers like OpenStreetMap, Bing Maps, Google Maps, and many others. This flexibility allows you to choose the map source that best suits your application and easily switch between different providers if needed.
- Geospatial Data Handling: OpenLayers supports various geospatial data formats such as GeoJSON, KML, GPX, WKT, and more. It provides capabilities for overlaying and styling these data layers on top of the base maps. You can visualize and interact with geospatial data, perform spatial queries, and incorporate data-driven features in your maps.
- Industry Relevance: OpenLayers is widely used in the web mapping industry and has been adopted by numerous organizations and projects. By learning OpenLayers, you gain a valuable skill set that aligns with industry standards and increases your employability in geospatial-related roles.

By learning OpenLayers, you can unlock the potential to create dynamic, interactive maps and geospatial applications, opening up opportunities to work on exciting projects in fields like environmental monitoring, urban planning, logistics, and more.

Related Job Roles

- GIS Developer
- Web GIS Developer
- Front-End Developer
- Geospatial Software Engineer
- GIS Project Manager

It's worth noting that proficiency in OpenLayers is often combined with broader knowledge of GIS principles, geospatial data formats, spatial databases, and other related technologies to excel in these job roles.

Available Training Options

- Online/Offline
- Weekdays Batches
- Weekend Batches
- Course - Duration: 60 Days
- Mode of Training - Online - Live Online Classes
- Daily 1Hr (Need to have a laptop or Computer with Good Internet)

Dedicated Trainer, Practical sessions. One-on-One Live Training Session with Hands-on Practical Training. For fees details and discounts whatsapp on Phno: +91 8050123030

Topics we cover:

1. HTML 5
2. CSS
3. JavaScript
4. OpenLayers
5. Geoserver

Introduction to HTML

HTML is the standard markup language for Web pages,which helps you to create your own website.

- Understanding about Browser
- Domain
- Host
- HTML Structure

TAG'S in HTML

- heading
- font
- formatting
- paragraph

List in HTML

- ol and it's type
- ul and it's type

Table and it's properties

- table
- tr
- th
- td

Input Elements

- checkbox
- color
- date
- email
- file
- hidden
- image
- month
- number
- password
- radio
- reset
- search
- submit
- text

CSS - Introduction

- CSS - Syntax
- CSS - Colors
- CSS - Backgrounds
- CSS - Fonts
- CSS - Text
- CSS - Images
- CSS - Links
- CSS - Tables
- CSS - Borders
- CSS - Margins
- CSS - Lists
- CSS - Padding
- CSS - Positioning
- CSS - Layers
- CSS - Pseudo Classes
- CSS - Pseudo Elements
- CSS - Text Effects
- CSS - Rounded Corner
- CSS - Border Images
- CSS - Multi Background
- CSS - Color
- CSS - Gradients
- CSS - Shadow
- CSS - Text
- CSS - Box Sizing

Introduction to JavaScript

- What is Javascript
- JavaScript history
- Relation between JavaScript and ECMAScript
- Versions of JavaScript

JavaScript Core

- Syntax, Variables, Values, Data Types
- Syntax review
- Keywords
- Variable declaration
- Variable scope
- Block scope.
- Data Types
- Primitive values
- Reference values
- Expressions and Operators
- Expressions (arithmetic, relational, logical, assignment and others),

Control structures

- Flow control and conditionals
- Loops and iteration

Functions

- Defining functions
- Calling functions
- Functions as values
- Arguments and parameters
- Function scope
- Closures
- Arrow functions

Arrays

- Creating and populating Arrays
- Array methods
- Working with Arrays

JavaScript BOM

- Window Object
- History Object
- Navigator Object
- Screen Object

JavaScript DOM

- getElementById
- getElementsByClassName
- getElementsByName
- getElementsByTagName
- innerHTML property
- innerText property

JavaScript OOPs

- JS Class
- JS Object
- JS Prototype
- JS constructor Method
- JS static Method
- JS Encapsulation
- JS Inheritance
- JS Polymorphism
- JS Abstraction

Introduction to GeoServer

- Setting up GeoServer on Windows Environment
- Working with Vector Spatial Data
- About Workspaces
- Create Workspace
- About Stores
- Import Vector Data to Store
- Publish Vector Data to Geoserver
- Web Map Service (WMS)
- Serving Cascading WMS
- Web Feature Service (WFS)
- Differences WMS and WFS
- Layer Preview in GeoServer
- Connect and Work with QGIS

Layer Styling

- Styling Point Features
- Styling Line Features
- Styling Polygon Features
- GeoServer Basic Vector Styling
- Exporting SLD from QGIS

OpenLayers

- Introduction to OpenLayers
- Installation of OpenLayers
- Creation of Web project with OpenLayers environment
- Creation of basic Web Mapping Application
- Accessing layers from Geoserver using WMS
- Creating new features on map
- Applying filters through Openlayers
- Adding layer switcher
- Adding scale-bar and mouse position
- Adding feature-info popup
- Adding home and full screen control
- Adding length and area measurement controls
- Custom ZoomIn and ZoomOut controls
- Attribute query functionality
- Spatial query (buffer) functionality
- Spatial query (intersecting and completely within) functionality
- Displaying users live location
- Editing functionality (add, modify, delete features)
- Live attribute search (just like Google)
- Cluster map in WebGIS

Student Review

Arvind Raju
From : Oman

I've taken up the Advance Python & Arcpy classes from this institute with trainer Mrs.Roselynn is very knowledgeable and teaches the course topics with great detail. Everything was easy to understand and I was always helped with doubts until it was completely rectified. I would definitely recommend this Institute to anyone wanting to learn Python or any of the other courses they offer.

Ullash Ghosh
From : Kolkatta

Excellent teaching of Advance Python programming by experienced trainer. Flexible timings. It was an awesome experience.

Jahir Hussain
From : Qatar

Its Helped me to identify clear,be able next steps towards resolving my own workplace conflict and issues.

Ayeesha H
From :Bangalore

Great knowledge given by the mentor, Best training institution. Mam has explained all the topics very clearly.

Student Review

Vishnu vg
From Kerala

My trainer, has a very good command over all the topics. She has explained each topic very clearly. We got a good understanding of all the concepts as she used to write programs daily for the real time scenarios. She make us practice during the classes. Overall I could say, you will be gaining good hands-on and understanding by end of the course

Eshawar Rao
From Hubli Dharwad

Excellent Faculty, Excellent Knowledge about subject, madam gives Attention towards every individual student, Madam is having enough Patience in clearing all individual doubts, Overall Excellent training centre to learn and to grow.

Siddhi Kanekar
From Pune

Best training institution. Mam has explained all the topics very clearly.
Thank you so much mam for being part of your institution.

Aghil Dev
From Orisa

I happy to be a student of rose mam, as she was always present to help. My classes were good and helped me in understanding the concept. Thanks rose mam

Gaurav Chauhan

Position: GIS Analyst
Company:
Carifer Technologies Private Limited
Chennai
Salary: 13 LPA

Harisha

Position: GIS Analyst
Company:
GVS Technosoft Pvt. Ltd
Salary: 10 LPA

Ankit Hemnani

Position: Software Engineer .Net
Company:
Celtic System Pvt.Ltd
Salary: 7.5 LPA

Harish Vijayakumar

Position: Project-Assosiate
Company:
Cognizant Technology Solutions India
Private Limited
Salary: 12 LPA

Ezeal Tech Team

KIRAN B

Qualification: MBA
Position: Business Head
Experience: 18 Years

His extensive experience in Operations Management, Client Acquisition, HR & Recruitment, and working with startups, he has demonstrated a track record of success across multiple industries and geographies. Starting from an executive level, he progressed to management positions, where he implemented process improvements to enhance efficiency, increase revenue, and drive growth. His vast network of colleges and training centers has significantly contributed to the development of robust recruitment and training pipelines. Moreover, he has successfully engaged with diverse clients.

NIKHIL S D

Qualification: BE Civil
Position: CAD Trainer (Civil)
Experience: 10 Years

Programing Skills: C,C++
2D And 3D Skills: AutoCad, 3D Max, Staad pro, Solid Works, Revit, Google Sketchup and ArcGIS CityEngine

Highly experienced CAD Civil Trainer with a demonstrated track record of success in delivering comprehensive training and instruction, specifically tailored for civil engineering applications. Committed to empowering learners with the necessary skills and knowledge to excel in their civil design and drafting projects.

RAMESH J

Qualification: BE Mech
Position: CAD CAM Trainer (Mech)
Experience: 6 Years

Programing Skills: C,C++,Python
2D And 3D Skills: AutoCad, Catia, Pro-e, Solid Edge, MatLab, Ansys, Solid Works,

Results-oriented CAD Mech Trainer with a decade of experience delivering exceptional training and instruction in 2D and 3D modeling software for mechanical engineering applications. Committed to equipping learners with the skills and knowledge needed to excel in mechanical design, simulation, and manufacturing.

ROSELEN S B

Qualification: MCA
Position: Programmer And Corporate Trainer
Experience: 12 Years

Programing Skills: Java, Python, AI, Machine Learning, Php, SQL, Full Stack
GIS Skill: Arcpy, ArcGIS JS API, ArcGIS Python API, PostGIS, Web AppBuilder, WebGIS

Highly experienced programming mentor with a strong background in various programming languages With over 12 years of training experience, has successfully mentored more than 3000 students, dedicated to helping aspiring programmers and professionals acquire the necessary skills and knowledge to excel in their programming careers.

KAVITA H

Qualification: MSc.IT
Position: Programing Trainer
Experience: 10 Years

Programing Skills: C, C++, Java, MSSQL, MYSQL Server, C# and good knowledge in Servlets, JSP, EJB Worked on J2EE 1.4 Application Server

Kavita is a seasoned programming mentor and trainer with a decade of experience specializing in Java Servlets and MySQL. She has a strong passion for teaching and guiding individuals in mastering these technologies. kavita's in-depth knowledge and practical experience in Java Servlets and MySQL make her an ideal mentor for aspiring programmers looking to excel in web development

ANKIT H

Qualification: MSc.Geoinformatics
Position: GIS Trainer
Experience: 6 Years

GIS Skills: Arc GIS, Arc GIS Pro, QGIS, IGIS, Fusion X, Auto CAD, MS Office, Google Earth, Bhuvan Portal, Geo-Server, Arcgis online, Microstation

Programing Skills: HTML, CSS, Java script, ArcGIS API for Java script, .Net, Python

Ankit is a highly skilled GIS trainer Has experience in ArcGIS, QGIS, PostGIS, remote sensing, and network analysis. His expertise lies in the field of spatial data analysis and geospatial technologies. He is passionate about sharing his knowledge and helping individuals develop proficiency in GIS applications for various industries.

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