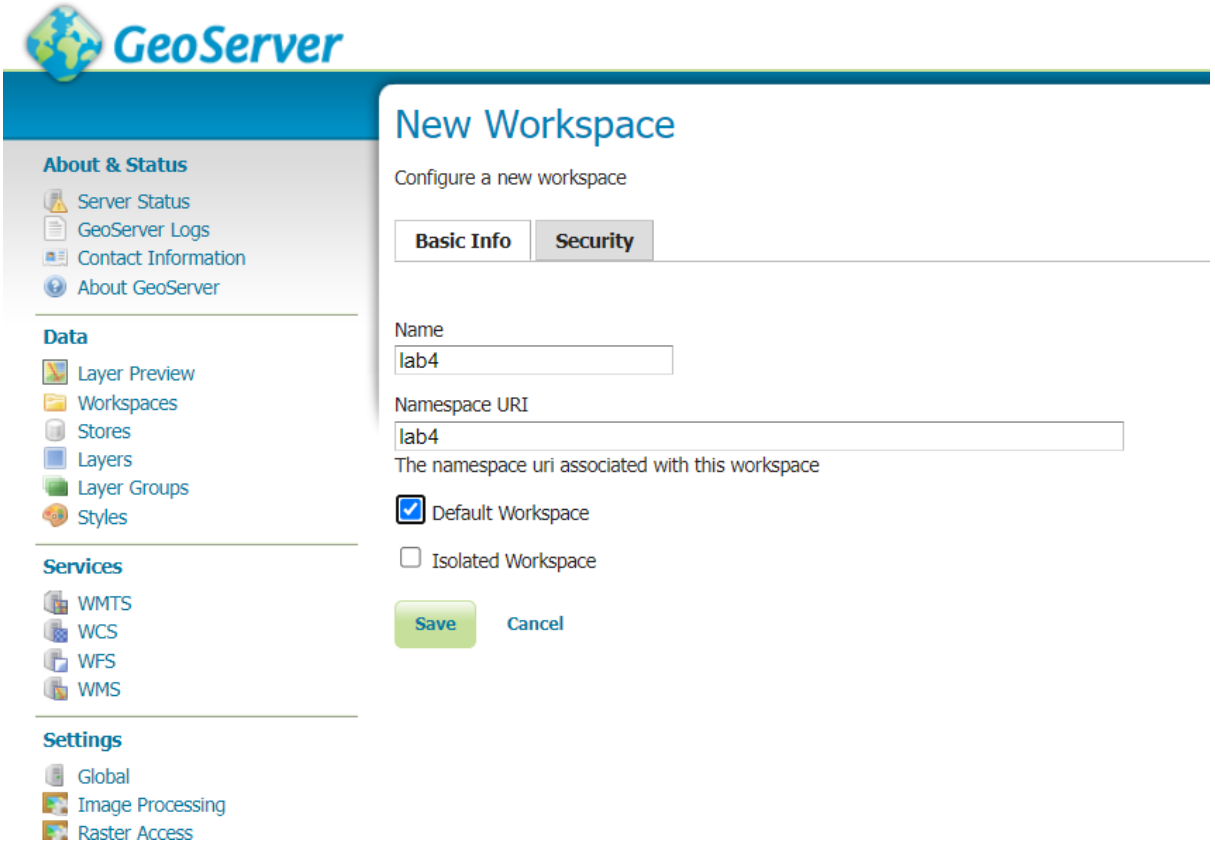
Geoserver Lab

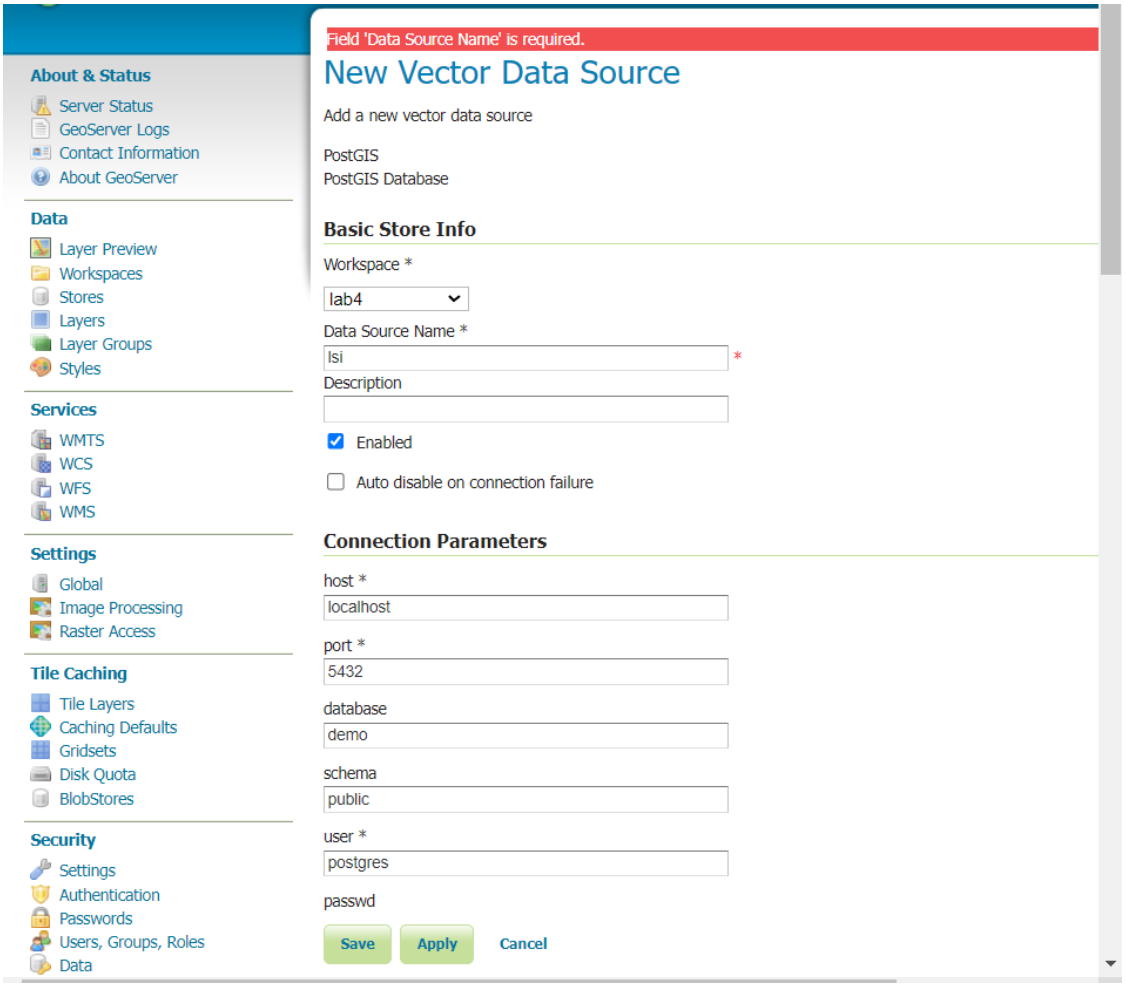
2021101107

WORKSPACE CREATION

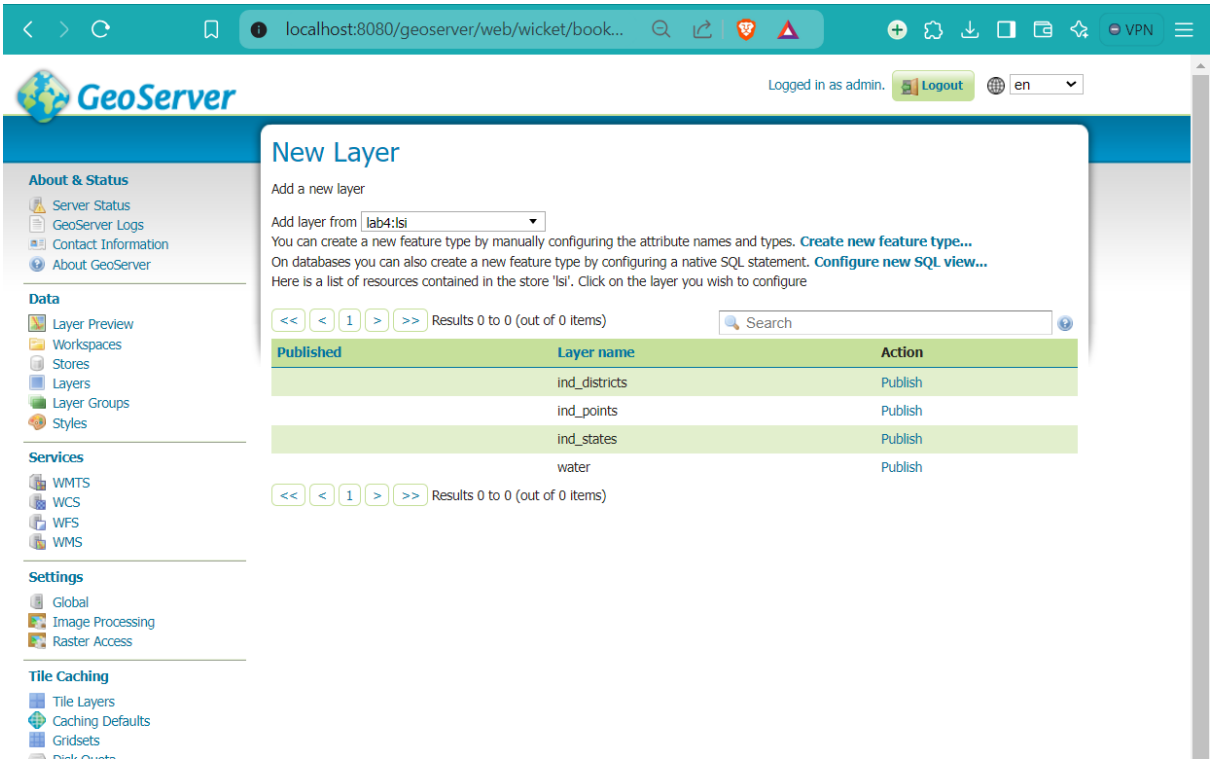
We have created a new workspace called- lab 4 in the geoserver and set it to ‘default workspace’.



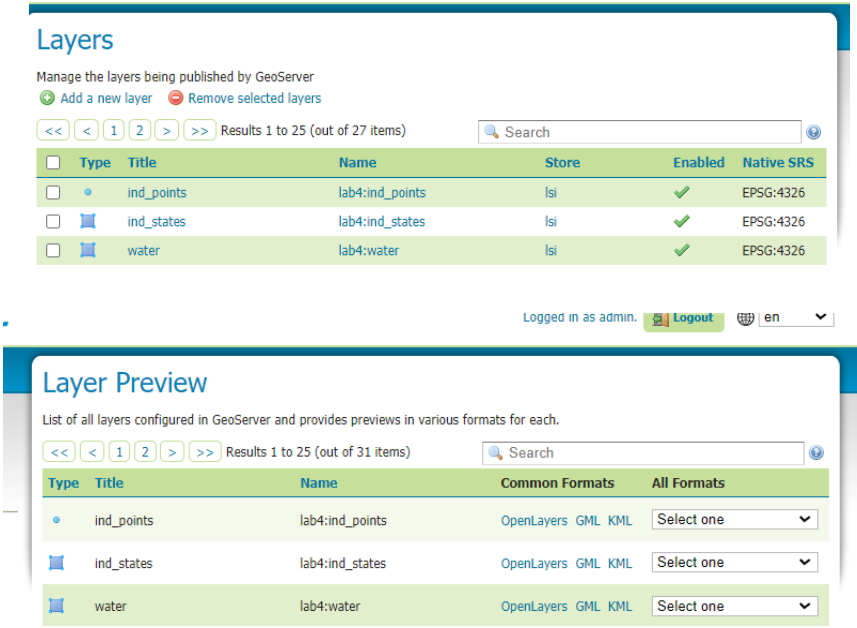
Next we are going to ‘store’→ create new store→ add the above details and the credentials of postGIS to establish connection between geoserver and our last lab’s database ‘demo’.



After creating a the store→ go to layers→ add new layer→ choose the store from dropdown menu→ choose “lab4:lsi”→ we get all the layers.

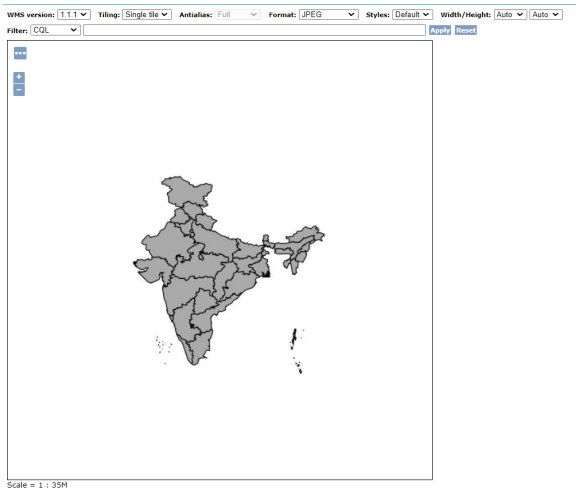


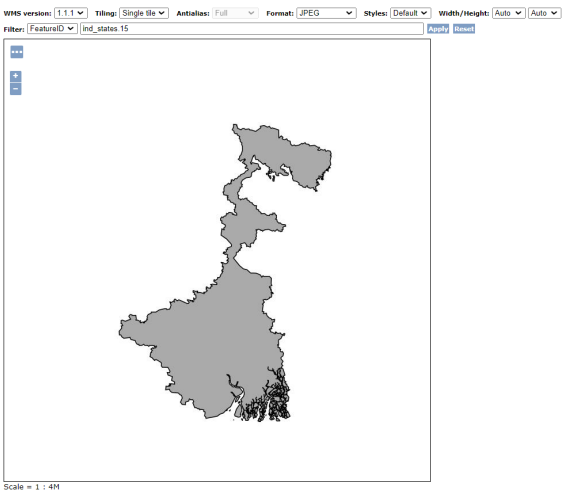
Now we are publishing the layer called ‘ind_states’→ click publish→ scroll down to bounding boxes→ click on ‘compute from data’ and ‘compute from native bounds’ and save→ layer published. (have done for all three layers similarly)



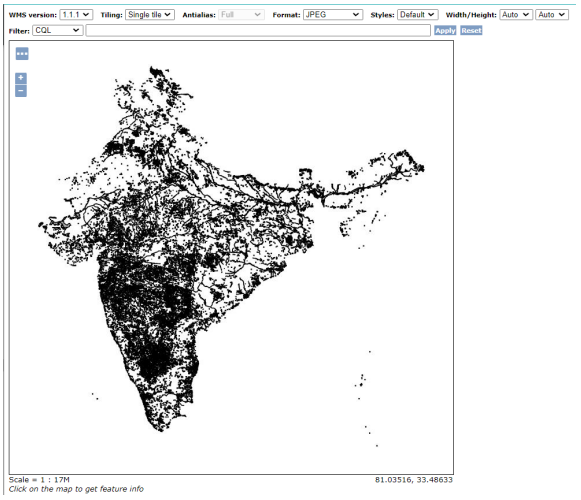
Go to layers preview and see the layers.

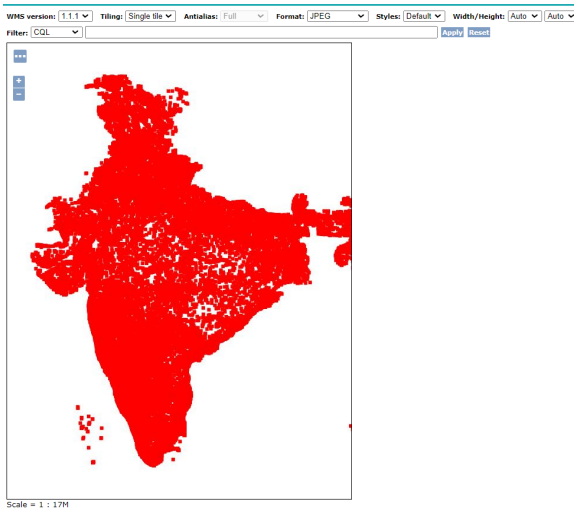
Now go to layers preview→ openLayers for ind_states.





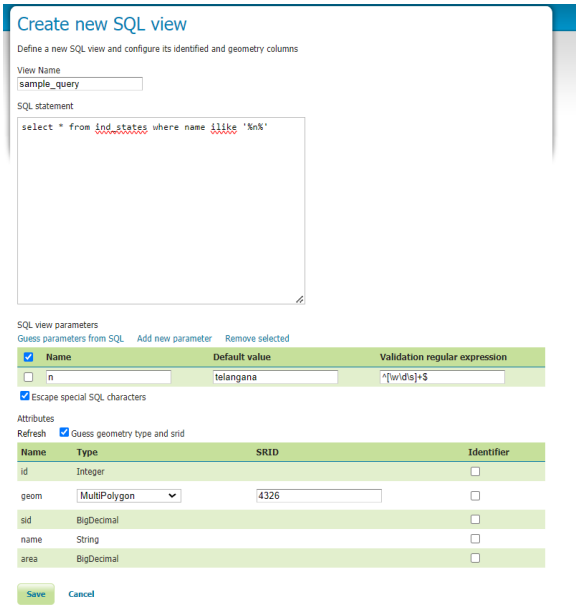
Layer preview for water (left) and ind_points (right) layer:

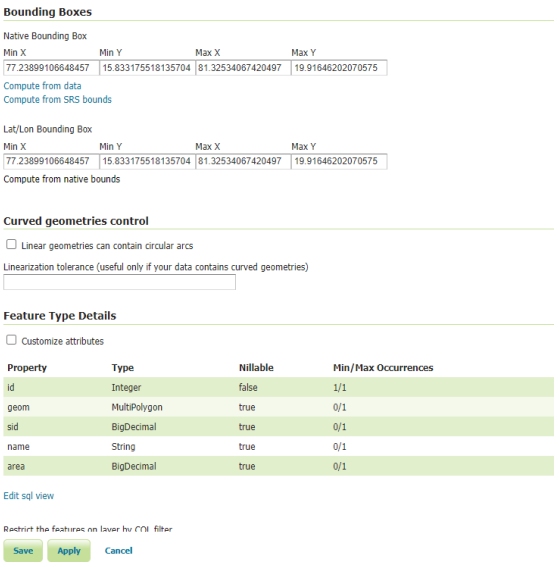




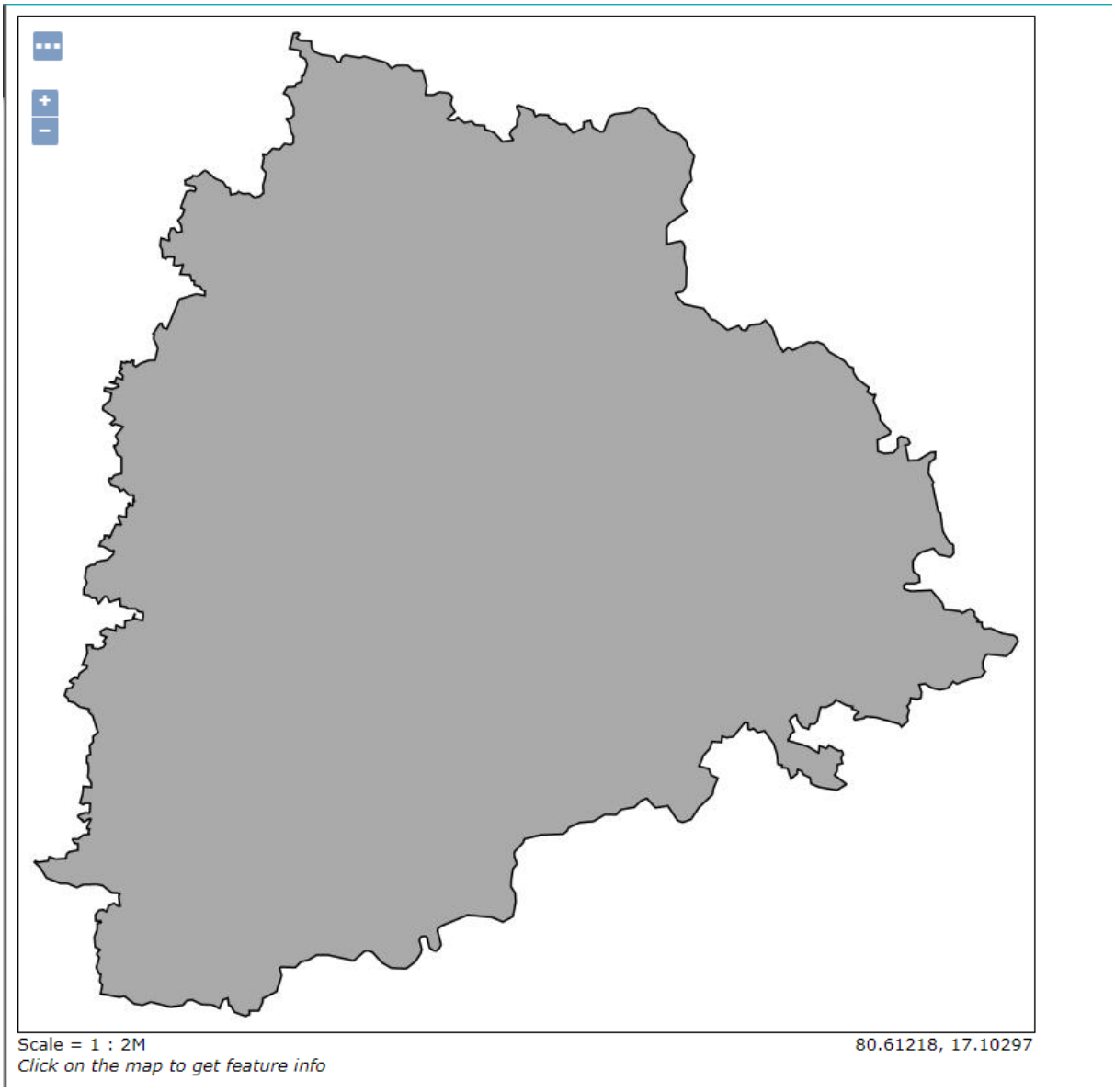
PARAMETER BASED LAYER

Created a new SQL view→ on the edit layer page→ scroll down to bounding boxes→ click on ‘compute from data’ and ‘compute from native bounds’ and save.

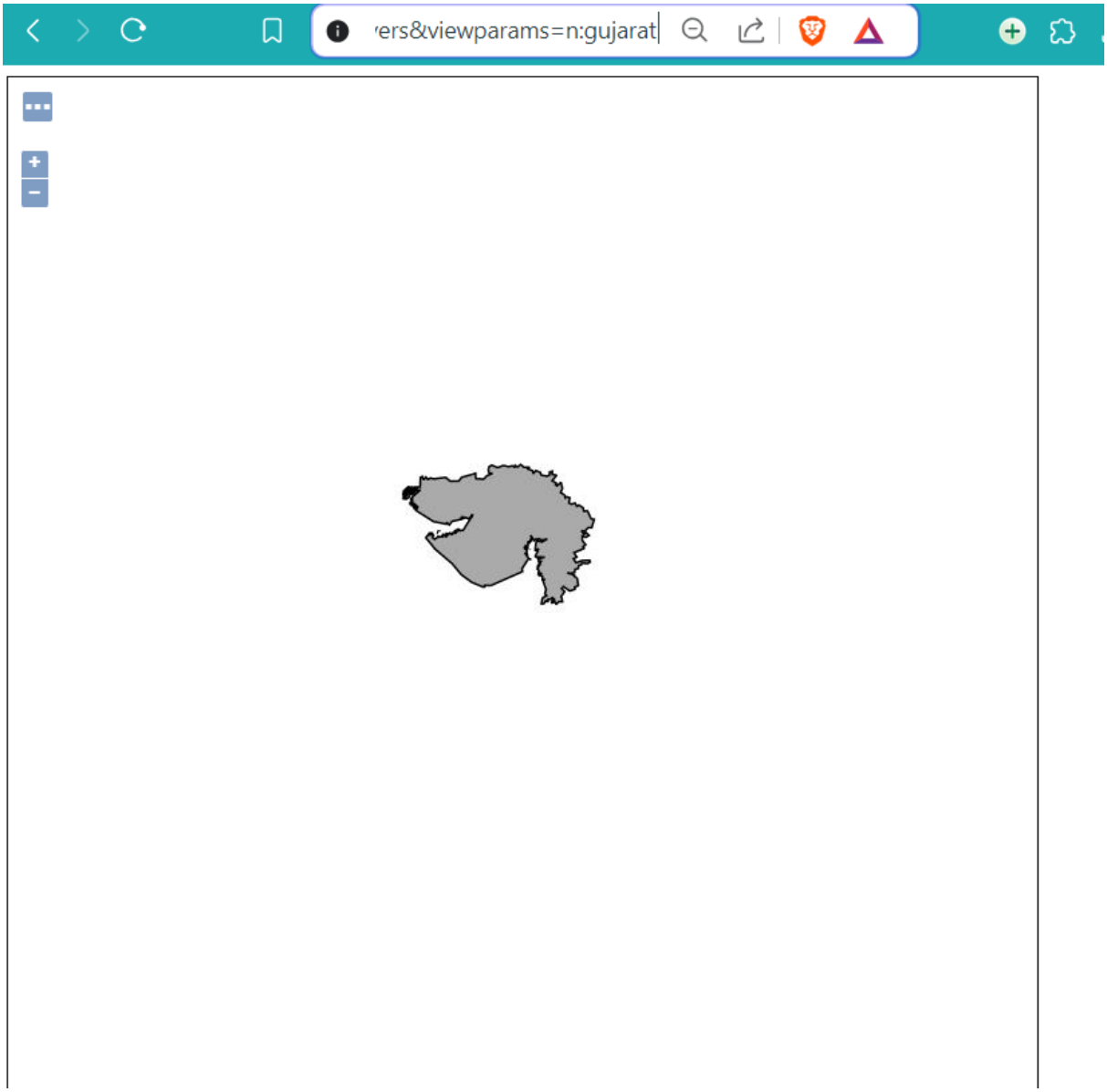




Go to layers preview→lsi:sample_query→ openLayers→ get the output

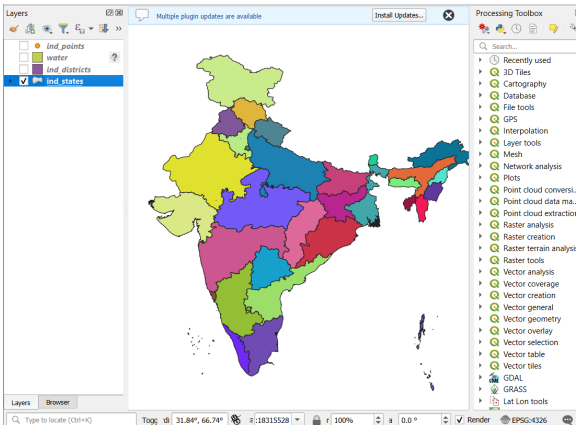


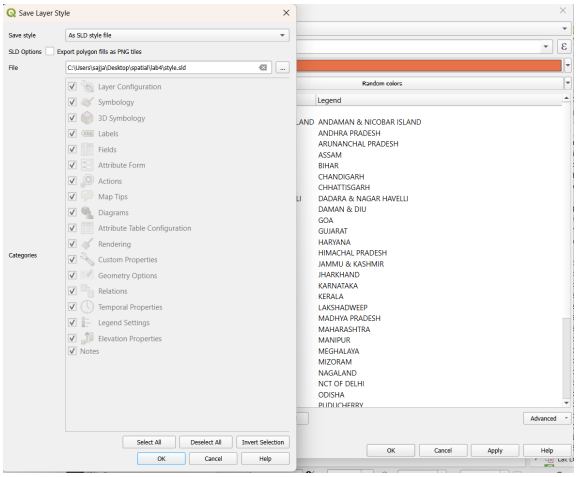
Now if we want to change the state we will add ‘&viewparams=n:gujarat’ at the end of our link;



STYLING

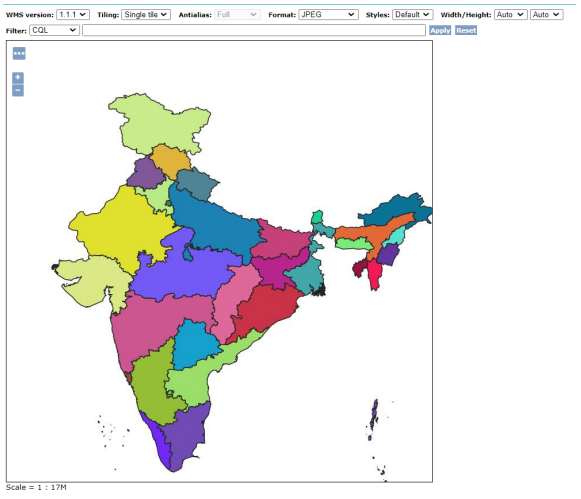
Go to symbology→categorised→classify on the basis of name→ save style file (.sld)

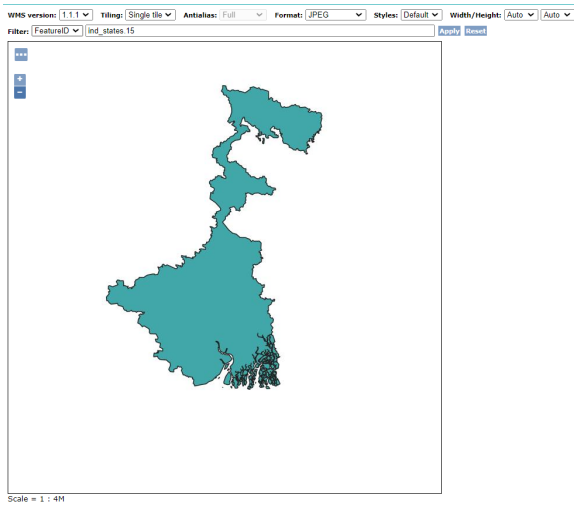




Now go back to geoserver→styles→ fill in details like below and copy the xml code and apply→ now scroll up→ go to publishing and choose ind_states→ default→ apply.

We can also see the preview of all states.

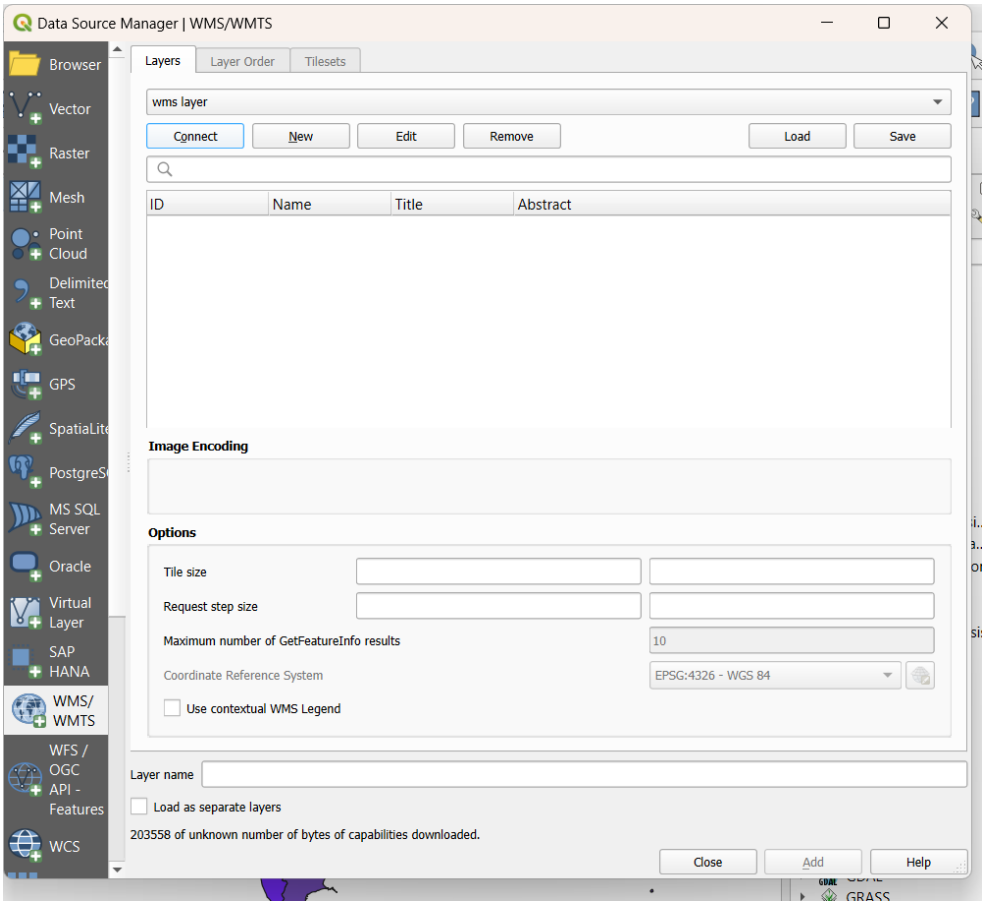




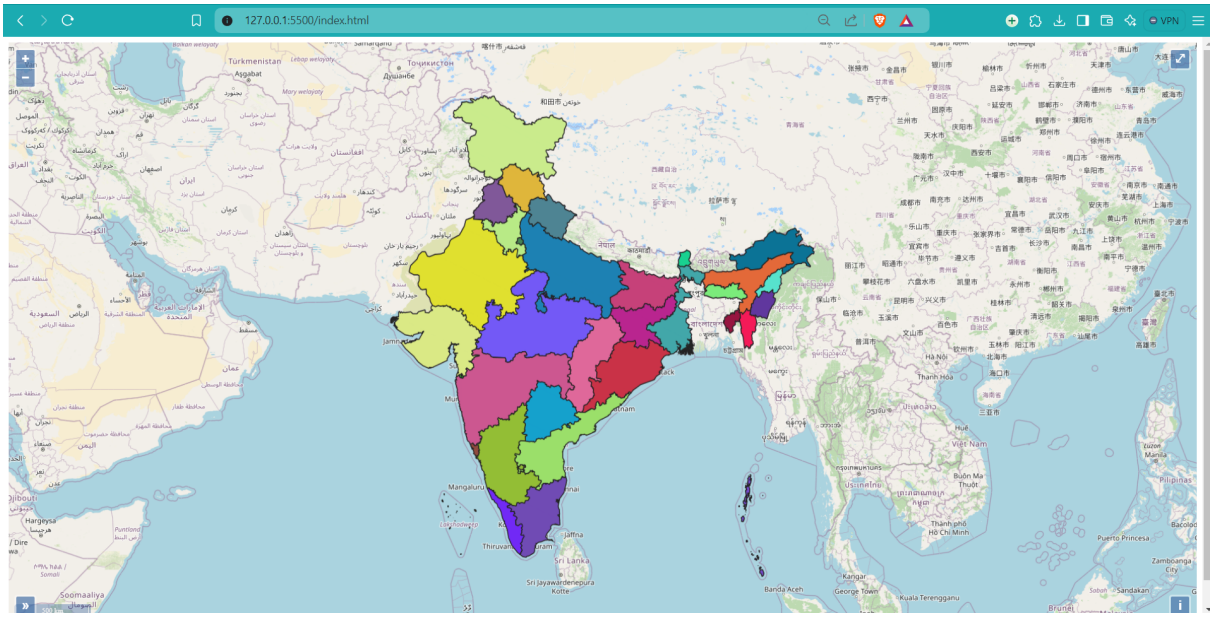
ADDING MAP AS WMS

Opened http://localhost:8080/geoserver/lab4/wms/

Go to QGIS→add wms LAYER→ Add details with the url and save and click connect.



After modifying the html code, we get our ind_states layer overlayed on osm along with the styling:



```
<!DOCTYPE html>
<html>
  <head>
    <title>Final</title>
    <link
      rel="stylesheet"
      href="https://openlayers.org/en/v4.6.5/css/ol.css"
      type="text/css"
    />
    <script src="https://openlayers.org/en/v4.6.5/build/ol.js
    <style>
      #map {
        height: 100vh;
        width: 100%;
      }
      .query {
        position: absolute;
        top: 10px;
        left: 10px;
        background: white;
        padding: 10px;
        border-radius: 5px;
        z-index: 100;
      }
    </style>
  </head>
  <body>
    <div id="map" class="map"></div>
    <!-- Dropdown menu for selecting a state -->
    <div class="query">
      <form>
        <select id="tr_name">
          <option value="Andhra Pradesh">Andhra Pradesh</opti
          <option value="Arunachal Pradesh">Arunachal Pradesh
          <option value="Assam">Assam</option>
          <option value="Bihar">Bihar</option>
          <option value="Chhattisgarh">Chhattisgarh</option>
          <option value="Goa">Goa</option>
```

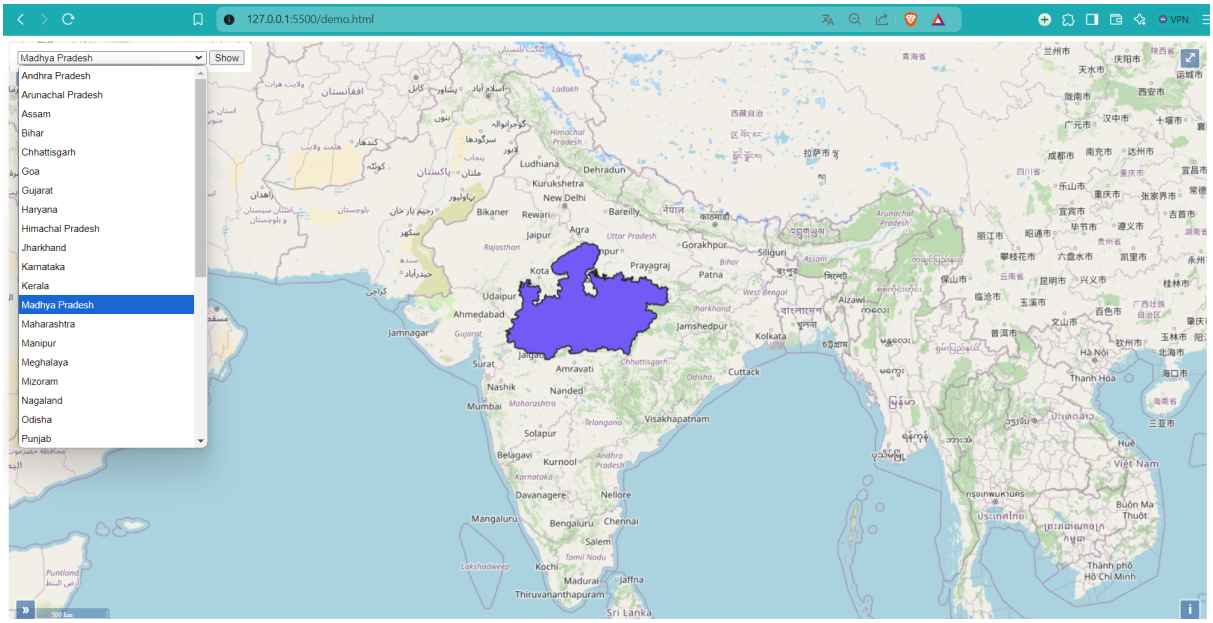
```
          <option value="Gujarat">Gujarat</option>
          <option value="Haryana">Haryana</option>
          <option value="Himachal Pradesh">Himachal Pradesh</
          <option value="Jharkhand">Jharkhand</option>
          <option value="Karnataka">Karnataka</option>
          <option value="Kerala">Kerala</option>
          <option value="Madhya Pradesh">Madhya Pradesh</opti
          <option value="Maharashtra">Maharashtra</option>
          <option value="Manipur">Manipur</option>
          <option value="Meghalaya">Meghalaya</option>
          <option value="Mizoram">Mizoram</option>
          <option value="Nagaland">Nagaland</option>
          <option value="Odisha">Odisha</option>
          <option value="Punjab">Punjab</option>
          <option value="Rajasthan">Rajasthan</option>
          <option value="Sikkim">Sikkim</option>
          <option value="Tamil Nadu">Tamil Nadu</option>
          <option value="Telangana">Telangana</option>
          <option value="Tripura">Tripura</option>
          <option value="Uttar Pradesh">Uttar Pradesh</option
          <option value="Uttarakhand">Uttarakhand</option>
          <option value="West Bengal">West Bengal</option>
          <option value="Chandigarh">Chandigarh</option>
          <option value="Delhi">Delhi</option>
          <option value="Jammu & Kashmir">Jammu & Kashmir</op
        </select>
        <button type="button" onclick="callQuery()">Show</but
      </form>
    </div>
    <script>
      // Initialize the map
      var map = new ol.Map({
        target: "map",
        layers: [
          new ol.layer.Tile({
            source: new ol.source.OSM(),
            title: "OSM",
          }),
```

```
    ],
    view: new ol.View({
      center: ol.proj.transform(
        [76.9639, 10.9905],
        "EPSG:4326",
        "EPSG:900913"
      ),
      zoom: 5,
    }),
    controls: ol.control
      .defaults({
        attributionOptions: {
          collapsible: true,
        },
      })
      .extend([
        new ol.control.ScaleLine(),
        new ol.control.FullScreen(),
        new ol.control.OverviewMap(),
      ]),
  });

  // Define the WMS layer for displaying states
  var wms = new ol.layer.Tile({
    source: new ol.source.TileWMS({
      url: "http://localhost:8080/geoserver/lab4/wms",
      params: {
        LAYERS: "lab4:sample_query",
        STYLES: "lab4:style",
        FORMAT: "image/png",
        TILED: true,
      },
      serverType: "geoserver",
      projection: "EPSG:4326",
    }),
    title: "States",
    visible: true,
  });
```

```
      // Add the WMS layer to the map
      map.addLayer(wms);

      // Function to update the WMS layer based on selected s
      function callQuery() {
        var stateName = document.getElementById("tr_name").va
        // Pass the state name as a parameter to the SQL view
        wms.getSource().updateParams({
          viewparams: "n:" + stateName,
          STYLES: "lab4:style",
        });
      }
    </script>
  </body>
</html>
```

FINAL OUTPUT

We get the web output and i have an option choose from any of the states→ click on show and then that state will be highlighted-




Jharkhand
Show