**Pataa Analytic Heatmap Using Geoserver, Postgresql**

**Geoserver**: – GeoServer is a Java-based server that allows users to view and edit geospatial data. Using open standards set forth by the Open Geospatial Consortium (OGC), GeoServer allows for great flexibility in map creation and data sharing.

Steps to Upload Data from database and Creating Layer:

* Creating a new workspace: - As a first step of any project we have to create project directory in geoserver we can call it workspace. The next step is to create a workspace for the data. A workspace is a container used to group similar layers together.

1. In a web browser, navigate to https://geo.pataa.com/geoserver.
2. Log into GeoServer.
3. Navigate to Data ‣ Workspaces.
4. Click the Add new workspace button.
5. You will be prompted to enter a workspace **Name** and Namespace URI.
6. Click the Submit button. The workspace will be added to the Workspaces list.

* Creating a store: - Once the workspace is created, we are ready to add a new store. The store tells GeoServer how to connect to the shapefile.

1. Navigate to Data‣Stores.
2. You should see a list of stores, including the type of store and the workspace that the store belongs to.
3. Create a new store by clicking the PostGIS link.
4. Enter the **Basic Store Info** :

* Select the Workspace
* Enter the Data Source Name as per you choice
* Add a brief Description

1. Specify the PostGIS database Connection Parameters. For Ex:

| **Option** | **Value** |
| --- | --- |
| **dbtype** | postgis |
| **host** | localhost |
| **port** | 5432 |
| **database** | nyc |
| **schema** | public |
| **user** | postgres |
| **password** | (Password for the postgres user) |
| **validate connections** | (Checked) |

1. Click Save.

* Creating a layer: - In GeoServer, the term “layer” refers to a raster or vector dataset that represents a collection of geographic features. Vector layers are analogous to “featureTypes” and raster layers are analogous to “coverages”. All layers have a source of data, known as a Store. The layer is associated with the Workspace in which the Store is defined.

1. Navigate to Data ‣ Layers.
2. Click Add a new resource.
3. From the New Layer chooser menu, select any store.
4. On the resulting layer row, select the layer name which you want to publish.
5. The Edit Layer page defines the data and publishing parameters for a layer. Enter a short Title and an Abstract for the layer.
6. Generate the layer’s bounding boxes by clicking the Compute from data and then compute from native bounds links.
7. Click the Publishing tab at the top of the page.
8. We can set the layer’s style here. Under WMS Settings, ensure that the Default Style is set to polygon.
9. Finalize the layer configuration by scrolling to the bottom of the page and clicking Save.

* After creating and publishing the layer we can easily use this layer and integrate it into any web application using rest apis. When we create and publish layer it gives us an url which we can use in any web application as per our needs.