Practical 1B

Aim: Calculating line length and statistics for vector layer

Steps:-

1)Layer->Add Layer->Add Vector Layer->Choose Dataset->IND_adm->IND_adm0.shp

2)Add IND_rrd->IND_rails.shp

3)IND_Rails->Right Click->Open Attribute Table->Field Calculator->Write output field name (tracklen)-> In expression select geometry

4)$length/1000->Change to decimal->Ok

5)Vector->Analysis Tools->Basic statistics for fields

6)Input Layer=IND_rails -> Field to calculate statistics on=tracklen ->Statistics=Location where html file is to be saved

7)Open HTML file->Sum will be displayed (6049.32)

Practical 2A

Aim: Exploring and managing raster layer by setting styles and doing analyses

Steps:-

1)Layer->Add Layer->Raster Layer->Location of file(glds00ag60.asc) ->add->Coordinate reference systems->WGS84

2)Right click on glds00ag60 layer->Properties->Band Rendering>Render type->Singleband pseudocolor->MIN=0,MAX=240

3)Value->Multiple of 60

4)Layer->Add Layer->Add Raster Layer->Select Dataset->90ag60 layer

5)Raster->Raster Calculator->output layer location>Formula(glds00ag60 – 90ag60)->Ok

6)Right click on prac2a layer->Symbology->SingleBound pseudocolour->Interpolation-Discrete->MIN=-20000,MAX=6000

Practical 2B

Aim: Raster Mosaicking and Clipping

STEPS:

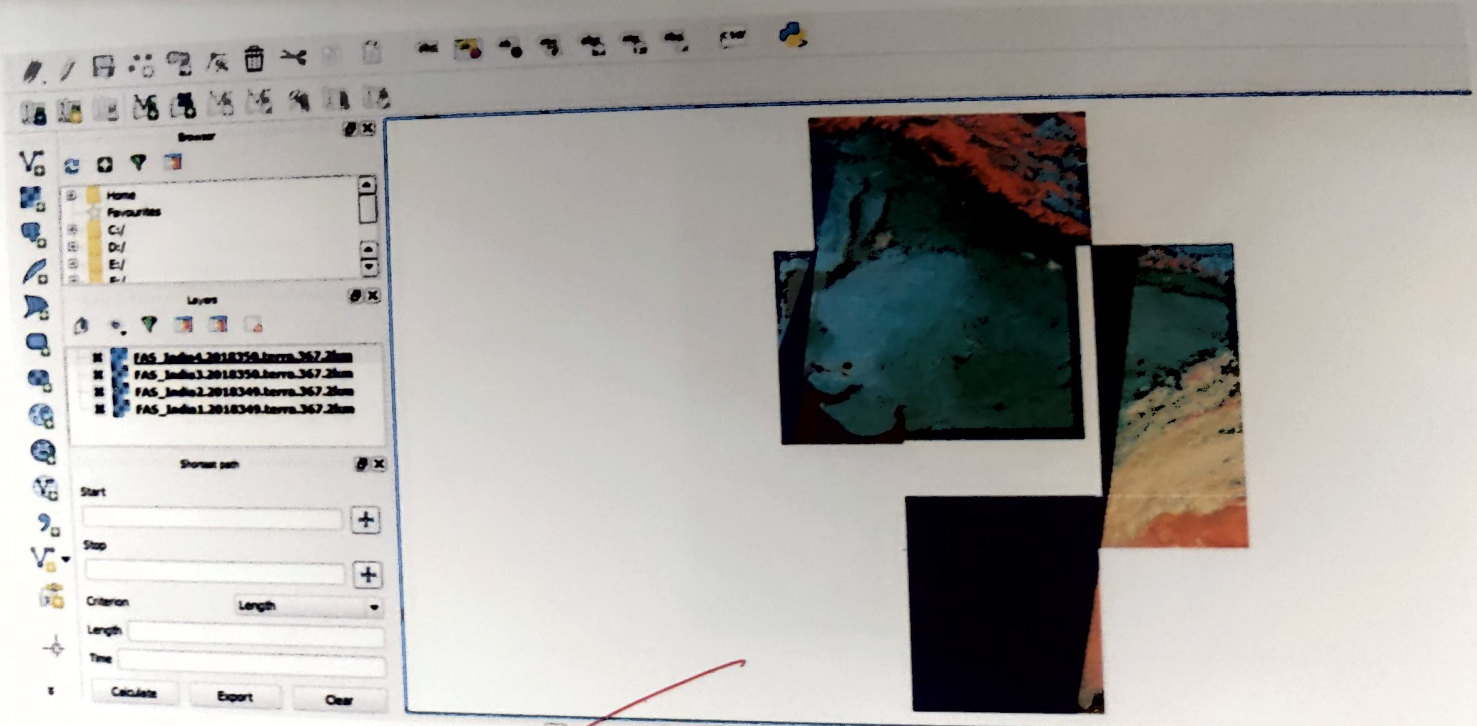
1)Layer->Add Layer->Add Raster Layer->File which contains Inda(tif file)

2)Raster->Miscellaneous Merge->C:/India->Output File->Load File

3)Layer->Add vector layer->Select Indian Map(shp file)

4)Raster->Extraction->Clipper->Input File()->Mask Layer(Ind_adm0)->Output(location to save)

5)Save



Practical 3A

Aim: Making your own Map

Steps:

1)Open Project-Old map practical 1

2)Project->New Print Layout->Give name

3)Add Item->Add Map->Draw a place to add the map

4)Item properties->Lock layer, lock style for layers

5)Select a part on map -> Go to overviews -> Map Frame=Map1

6)Add Item -> Add Legend

7)Add Item -> Add Picture -> Search Directory

8)Add Item -> Add Label

9)Add Item -> Add Scale Bar

10)Save as img file->layout->image export->save

Practical 3B

Aim: Importing spreadsheets/csv files

Steps:

1)Layer->Add Layer->Add Delimited text layer(supports csv)

2)Practical 3/B/Excel file

3)Custom Delimiters->Select Tab , Colon, Space

4)Geometry Definition->X Field Longitude->Y Field Latitude

5)Geometry CRS->EPSG:4326-WGS84

Practical 3B C

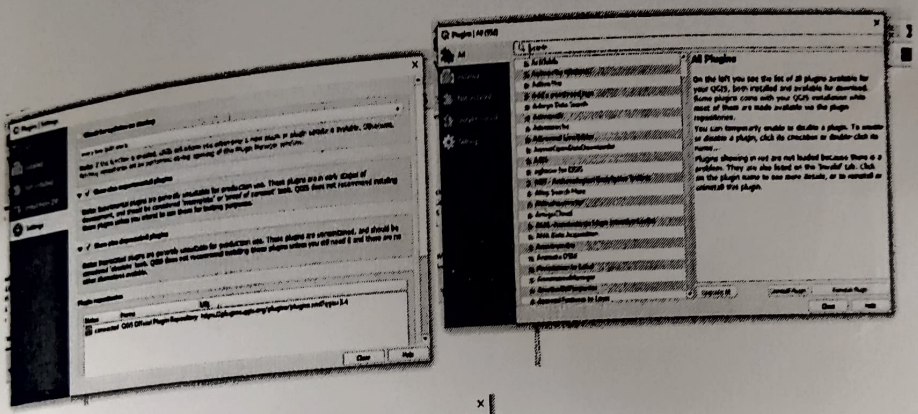
Aim: Using and Installing Plugins

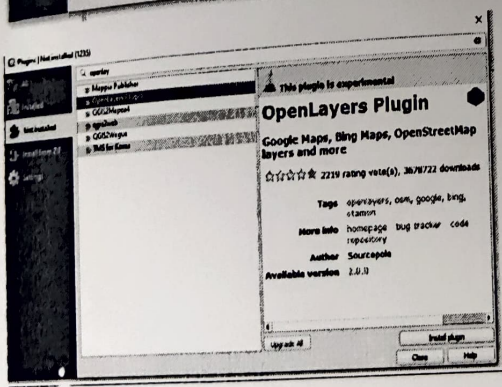
Steps:

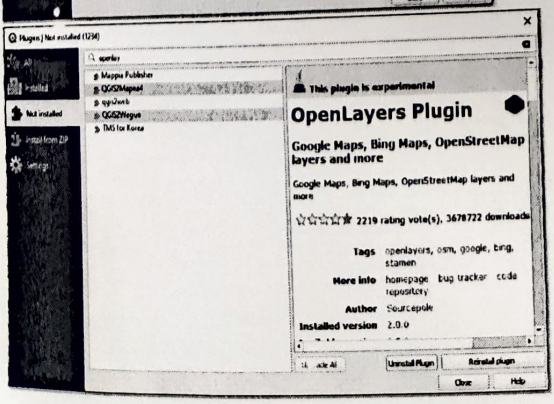
1)Menu->Plugins->Manage and Installing Plugins

2)Settings->Show experimental and deprecated

3)Install OpenLayers plugin->Double click->Install plugin







Practical 3D

Aim: Using Open Street Map

Steps:

1)Install OSMPlace Search Plugin

2)Web->Open Layer Plugin->Open Street Map

3)Enter place in search bar(left side)

Practical 4A

Aim: Working with attributes

Steps:

1)Extract->Std soft->Practical 4->A->Zip file extract

2)Layer->Add Layer->Add Vector Layer->Practical 4 A->ne_10m_populated_places_simple.SHP File

3)Right Click->Open attribute table->Select pop_max->Toggle on layer

4)Click on select feature using an expression -> Write the statement: pop_max>10000 and pop_max>600000 and sov0name='India' -> Click on select feature -> Changes are applied

Practical 4B

Aim: Working with terrain data and hill shade analysis

Steps:

1)Add layer->Raster Layer->MEA300.tif

2)Coordinates=86.92,27.98->Scale=1:1000000->Enter

3)Raster->Extraction->Clip Raster by extent->Select input layer->use canvasExtent->Save to file(Select both)->Run

4)Deselect Original Layer

5)Raster->Extraction->Select counter->Clipped Layer->Interval=100.00-> Elevation(by default)->Save File->Run

6)Deselct Original Layer->Properties(Layer)->Single Label->Elevation->Apply

7)Symbology->Line->Simple Line

8)Layer->Open attribute table->Highest Elevation Point->Zoom map for selected feature on map

9)Plugins->Install Plugin->Georeference Gval

10)Raster analysis->Hill Shading->Select Input Layer->Save File->Run->Close

Practical 5

Aim: Working with projections & WMS(Web Map Service data)

Steps:

1)Layer->Add Layer->Add vector Layer->Prac5->A->unzip->shp for all countries

2)Layer->Save as->Format=ESRI Shapefile->Save->Select CRS

3)Filter=102008->OK

4)Layer->Add Layer->Add Raster Layer->Miniscale.....tif->Add

5)On left side->Right Click on (Miniscale)->Set CRS->Set Layer CRS->Great Britan(27700)

6) On left side->Right Click on (Prac5Shapefile)->Set CRS->Set Layer CRS->North America(102008)

Practical 6A

Aim: Georeferencing topological sheets & scanned maps

Steps:

1)Layer->Add Layer->Add vector Layer->Prac 6->Ind_adm.shp->Zoom Mumbai region

2)Go to Plugins->Manage and Install Plugins->Georeference GDAL->tick

3)Go to Raster->Georeference->File->Open Raster->D/file...../Prac6/A/Bombay.jpg->Open

4)Settings->Transform Settings->Thin Plate Spline->Nearest Neighbour->Target SRS=Projection(404)/WGS84->Select O/P file->[tick]Load in QGIS when done->OK

5)Edit->Add Points->Click somewhere->From map canvas->Select in map->OK(Add 4 Points)

6)Check transform settings(to confirm)

7)File->Start Georeferencing

8)Layer->Properties->Transparency->Reduce->Apply->OK

Practical 6B

Aim: Georeferencing Aerial Image using Open Street Map

Steps:

1)Add Open Street Map

2)Place Gateway Of India

3)Go to Raster->Georeference->File->Open Raster>D/file...../Prac6/A/Bombay.jpg->Open

4)Settings->Transform Settings->Thin Plate Spline->Nearest Neighbour->Target SRS=Projection=Pseudo Mercator(EPSG3857)->Select O/P file->[tick]Load in QGIS when done->OK

5)Edit->Add Points->Click somewhere->From map canvas>Select in map->OK(Add 4 Points)

6)Check transform settings(to confirm)

7)File->Start Georeferencing

8)Layer->Properties->Transparency->Reduce->Apply->OK

Practical 6C

Aim: Digitizing map data

Steps:

1)Layer->Add Layer->Add Raster Layer->Prac 06/C/map.tif

2)Right Click->Select Properties->Pyramid->Select all resolutions->Build Pyramid->Apply->Ok

3)Settings->Options->Digitizing->Default Snap Mode="Vertex & Segment"->OK

4)Layer->Add Layer->Add SpatialLite Layer->test23.sqlite->Close

5)New Layer->Layer name= digitized->Geometry Type=Line->Field=name->OK

6)Zoom a part->Add a line->pkuid,name=abc

7)Properties->Apply

8)Add point as well as polygon similarly.

Practical 7A

Aim: Table Joins

Steps:

1)Layer->Vector Layer->Prac7->t1_2013_06.tract.shp->Add Close

2)Add Delimitted Text Layer->ca_tracts_pop.csv->deselect csv(tab,colon,space)

3)Check semi-colon and comma->No Geometry Type->Add->Close

4)Right Click on tl201306 tract->properties->joins->join field->GEO.ID2, Target field=GEOID->ok

5)Symbology->Graduated->ca_tract_pop_D001(column),Mode->Classify->Apply->Ok

Practical 7B

Aim: Spatial Joins

Steps:

1)Layer->Vector Layer->nybb.shp->Add

2)Layer->Vector Layer->OEM_NursingHome.zip->Extract->shp->Add vector->Data management tools

3)Join Attributes by location->nybb->intersects->fields to add->select all

4)Ok->Run->Close

5)Info (i) icon->Select an area

Practical 7C

Aim: Point in Polygon Analysis

Steps:

1)Layer->Vector Layer->7->C->countries.shp

2) Layer->Vector Layer->7->C->populated places.shp

3)Vector->Analysis Tools->Count points in polygon:->

Polygon:country, Point:population

4)Count:->Save as file->Run

5)Click on info (i) and click on India

6)Check numpoints:212

Practical 7D

Aim:Populating spatial queries

Steps:

1)Add layer->Vector->7D->populated_places.shp

2) Add layer->Vector->7D->river_lake.shp

3)Project->Properties->CRS->filter:54032->CRS:world_azimuthal_equidistant->Apply DR

4)Vector->Geoprocessing tools->Buffer->I/P layer:river_lake->Distance:0.02->Buffer:path to save->Run and close

5)Buffer layer->RightClick->Properties->Labels:Single labels->abc name

6) Buffer layer->RightClick->Properties->Symbology:colour

7)Vector->Research Tools->Select by location

->Selected:buffered->compare:population_simple

8)Run and close

9)Zoom and close