EXPLORING GEOINFORMATICS USING GOOGLE EARTH AND QGIS

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1 Introduction

Google Earth is a computer program that renders a 3D representation of Earth based primarily on satellite imagery. The program maps the Earth by superimposing satellite images, aerial photography, and GIS data onto a 3D globe, allowing users to see cities and landscapes from various angles.

Google Earth provides a series of other tools through the desktop application. Additional globes for the Moon and Mars are available, as well as a tool for viewing the night sky.

QGIS functions as geographic information system (GIS) software, allowing users to analyze and edit spatial information, in addition to composing and exporting graphical maps. QGIS supports both raster and vector layers; vector data is stored as either point, line, or polygon features. Multiple formats of raster images are supported, and the software can georeference images QGIS supports shapefiles, coverages, personal geodatabases, dxf, MapInfo, PostGIS, and other formats. Web services, including Web Map Service and Web Feature Service, are also supported to allow use of data from external sources.

2 Methodology:

In this assignment,we will be focussing on the google earth and its use in daily life.

We will interpret image and will tell us about all the features and will know reasons of anamoly.

we will also try to import and overlay the imported kmz file into QGIS and various maps besides google earth.

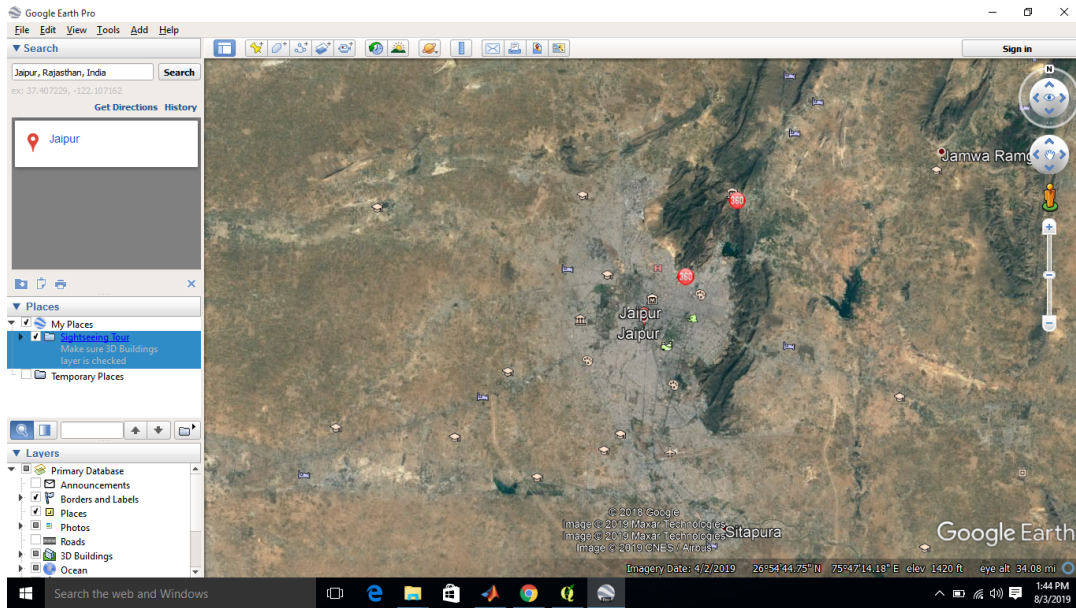## 2.1 Google Earth

2.1.1 A CAPITAL OF RAJASTHAN

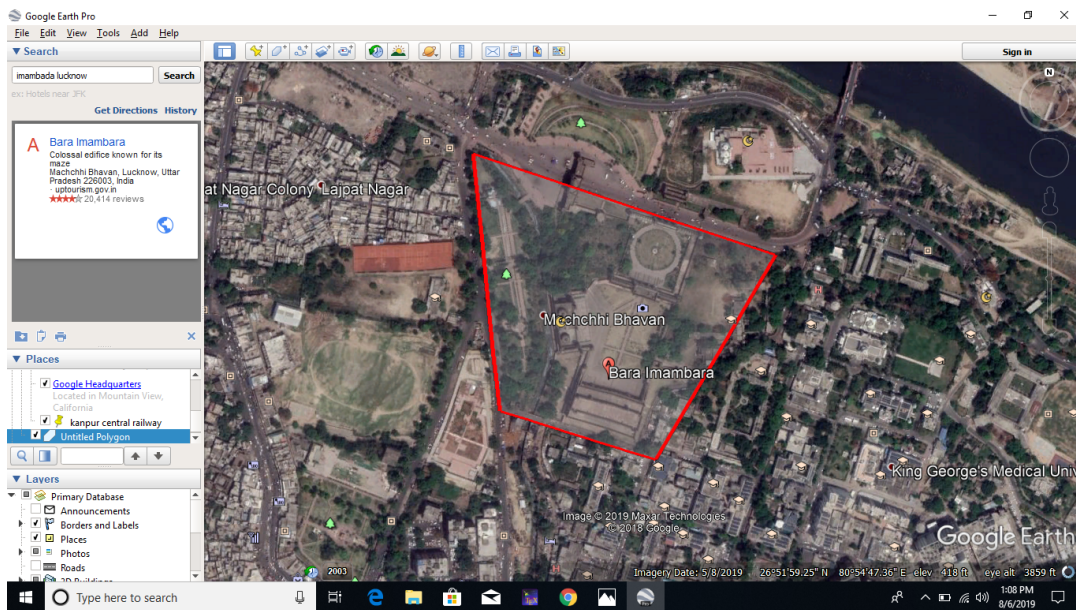Figure 1: image

2.1.2 Historical place

Figure 2: image

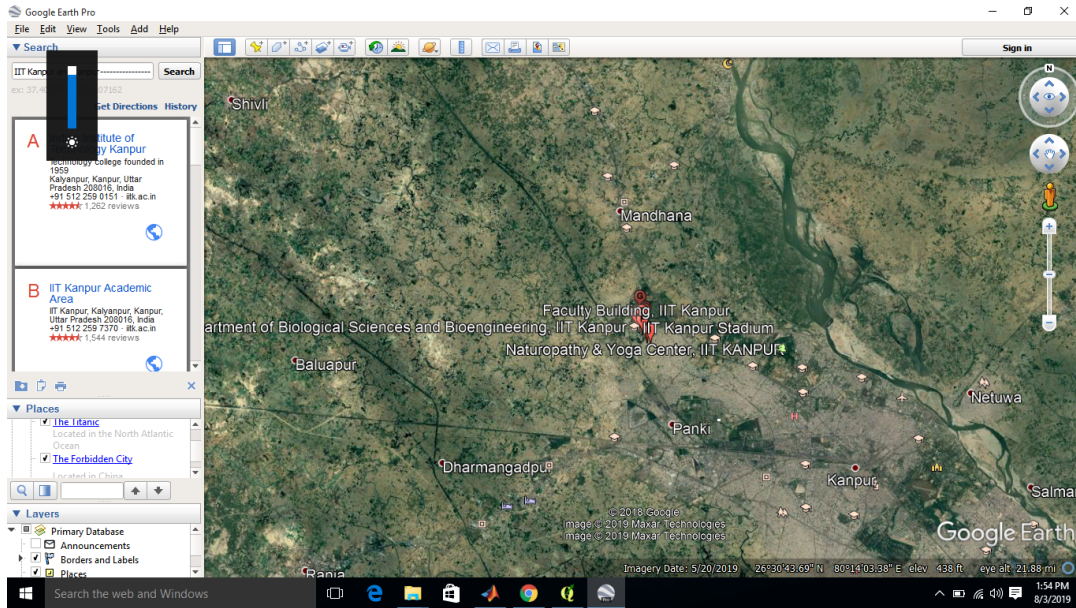### 2.1.3   KANPUR WITH IITKANPUR

Figure 3: image

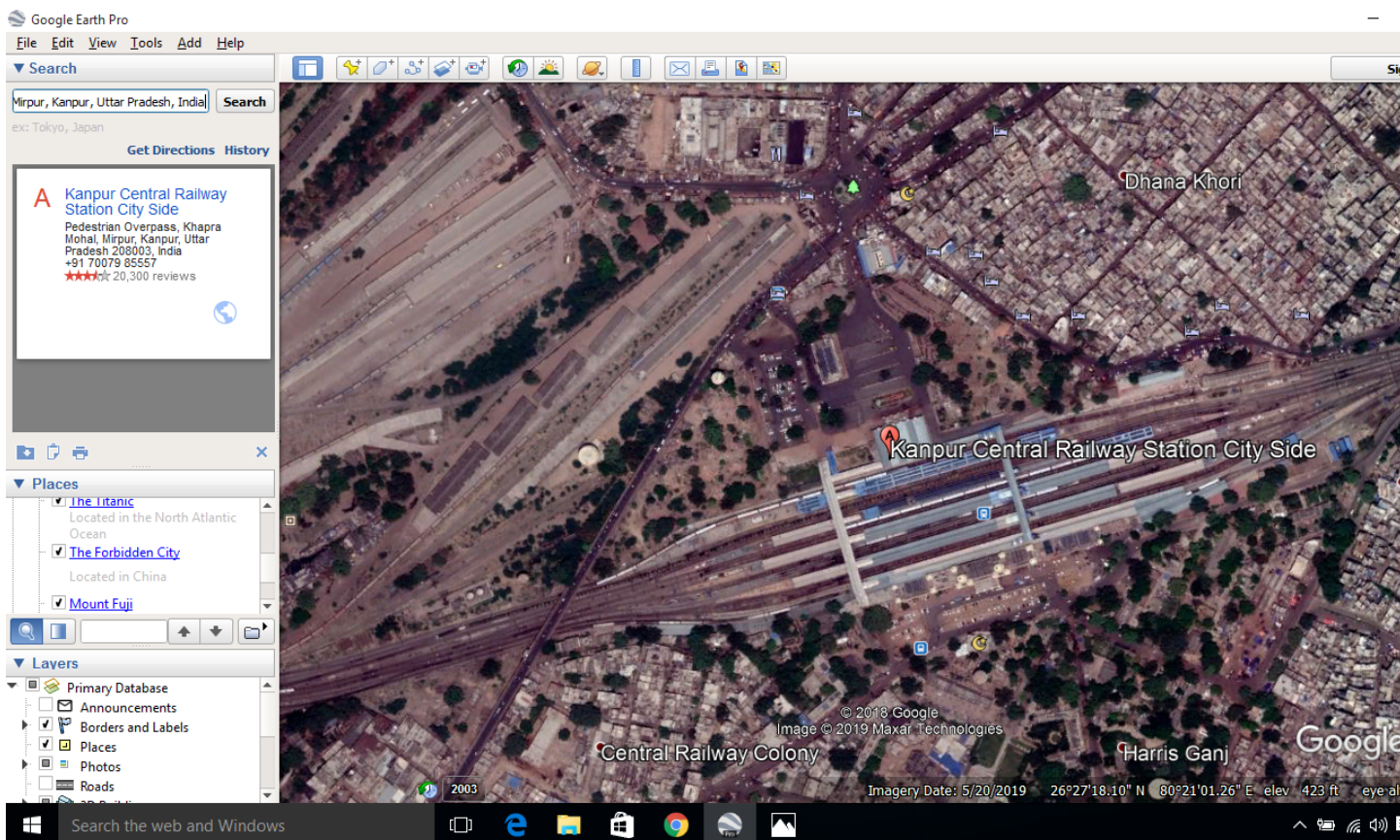### 2.1.4   KANPUR CENTRAL RAILWAY STATION

Figure 4: image
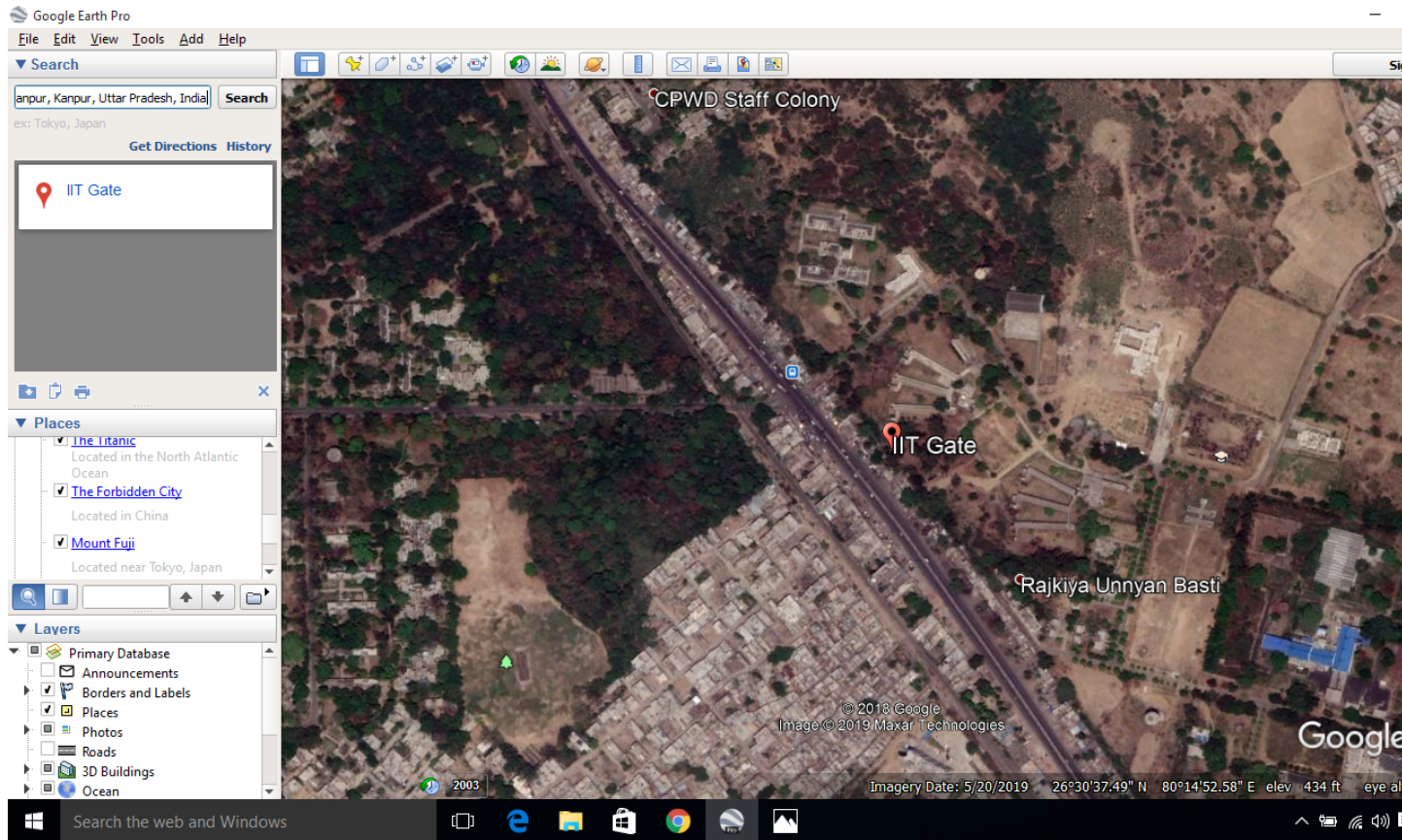
2.1.5   IIT KANPUR GATE

Figure 5: image
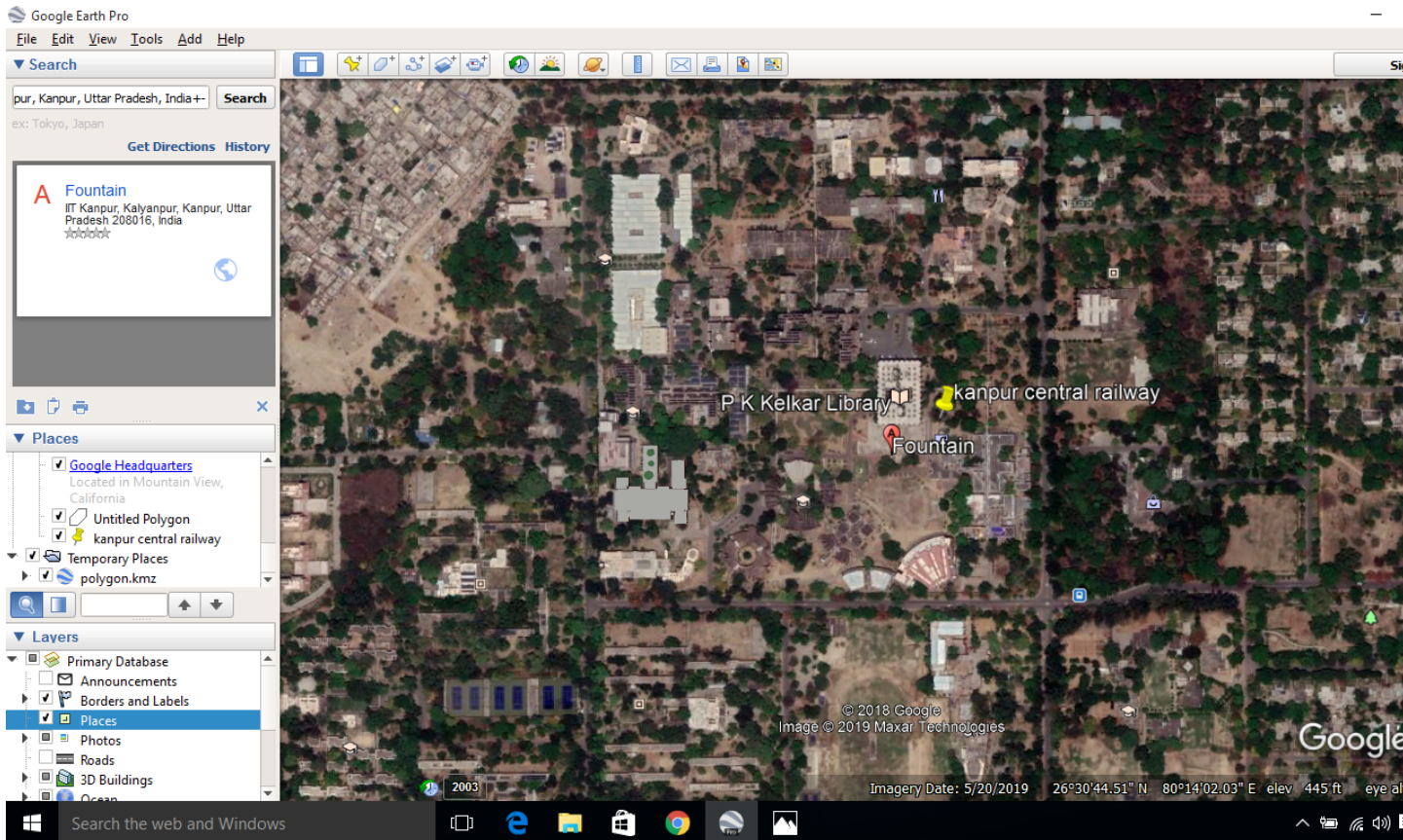
2.1.6   IITKANPUR LIBRARY

Figure 6: image

2.1.7   ANOMALIES

Images may be taken from different satellites
Images may be taken at different time interval
NON SELECTIVE SCATTERING might be the possible reason.

2.1.8   POSSIBLE REASON OF COLOUR CHANGE IN IMAGES

change of colour of images around boundaries may be because of following given reasons
capturing of image from different satellites.
capturing of image during different duration.
nonselective scattering can also be one of the possible reason

2.1.9   INTERPRETATION OF IMAGES

In AOI 2: we can see a barren land with few closely grown trees or vegetation,it may be a rural area.
In AOI 3:we can see a round place with tress all around the boundary of that round place,and just in the middle
we can observe some black colour image which may resemble a chimney or it may also be some abandoned
building structure.
In AOI 4: we can see some ellipsoidal area and just in the middle of that area, we can see some kiln chimney
because of its black colour and shape,we are able to guess that it is a chimney .
In AOI 6: possibility of dry water body

2.1.10   ANOMALY AND INTERPRETATION OF FEATURE AT AOI 7

It is seen as a road network but it is a railway which is mentioned on the railway track by zooming out the image.

2.1.11   APPLICATIONS OF GOOGLE EARTH

To locate and remove landmines
Relief workers use the tool for crisis response after earthquake.
worldwildlife fund and many other organisations are using the google earth to protect the biodiversity.
with the help of weather layer ,we can follow weather patterns all the world and will get to know about the weather even before the meteorologists give it to us.
we can create location tracking log of our position over time.

2.1.12   INNOVATIVE APPLICATION OF GOOGLE EARTH

Through TELEMEDICINE ,we can reach remote areas and can cure patients which are living in inaccessible areas where doctors cannot reach.

2.1.13   OTHER IMAGE SERVERS SIMILAR TO GOOGLE EARTH

GOOGLE MAPS
OpenStreetMaps
2GIS
Google Street View
NASA World Wind
Marble
MapQuest

2.1.14   Difference between "kml" and "kmz" file

KML file text based files composed of tags similar to XML
KMZ are KML (keyhole markup language) files that have been zipped up along with their related files, such as image overlays. This means that you can share image overlays and custom icons without having to publish the files on an external web server or mail them as an attachment.

KML and KMZ are two file extensions used for different instances of a Geospatial information file, known as Keyhole Markup Language.

KML is a tag based XML language that is used to store attributes of a map or a model. Each KML file is composed of a collection of graphic elements, images, and settings.

KMZ is a compressed version of the KML file.

2.1.15   SPECIALITY OF "KMZ" FORMAT

KMZ files contains placemarks featuring a custom name; the latitudinal and longitudinal coordinates for the location, and 3D model data. KMZ files can be opened by Google Earth, or unzipped with a compression utility, such as WinZip on Windows, MacZip for Macintosh users, and Zip and UnZip for UNIX systems.

2.2   QGIS
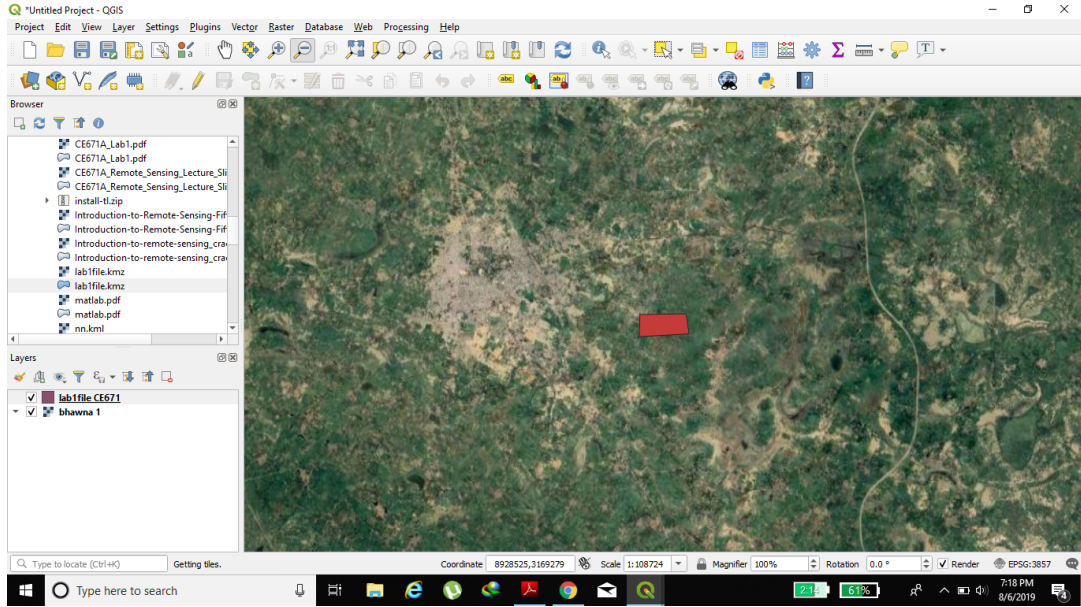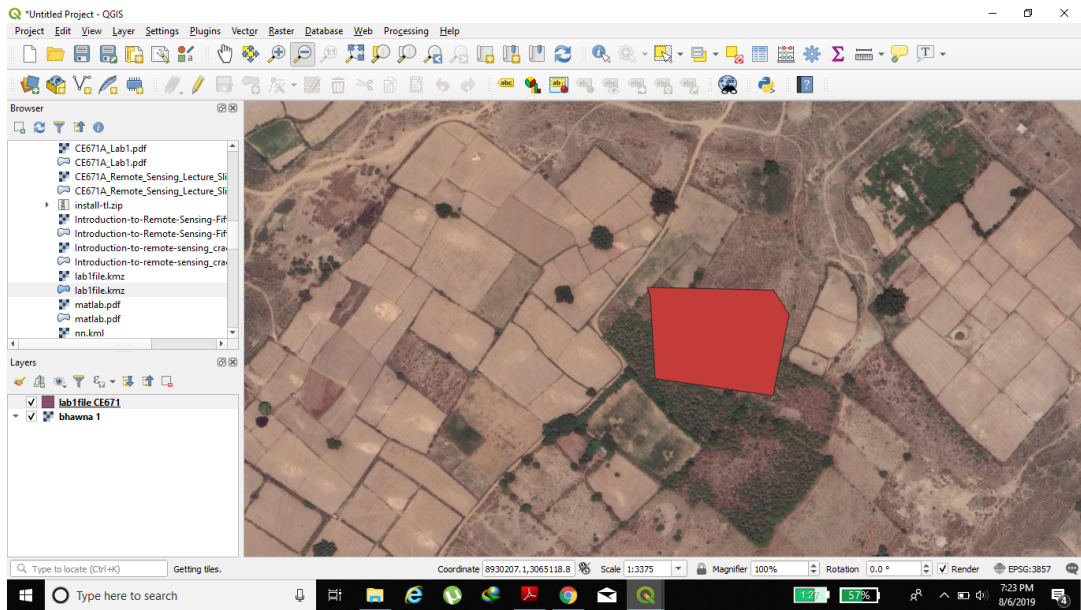
2.2.1   SNAPSHOTS OF THE TASK GIVEN
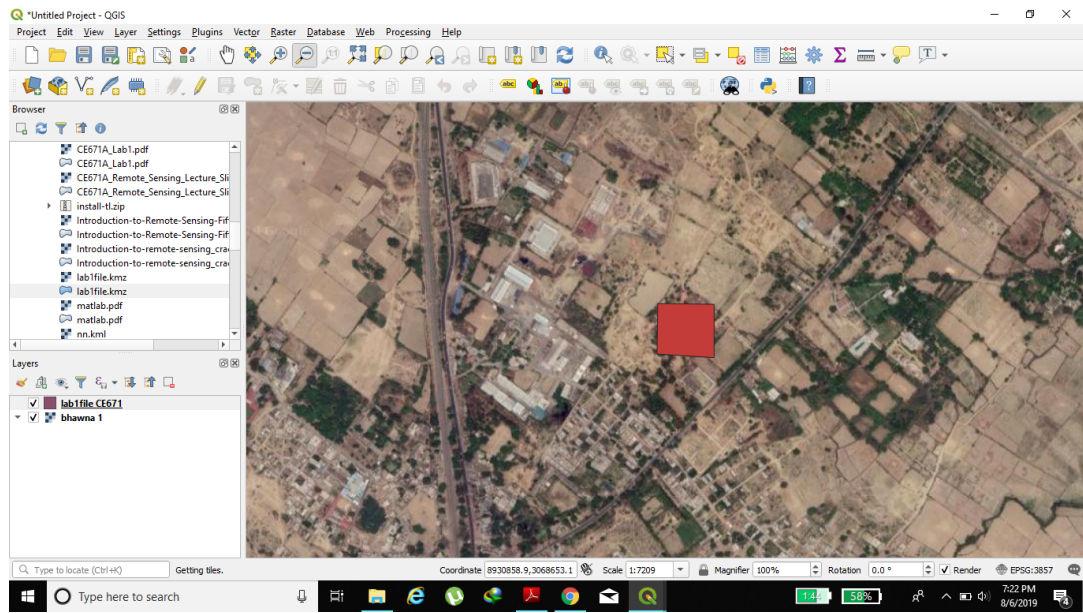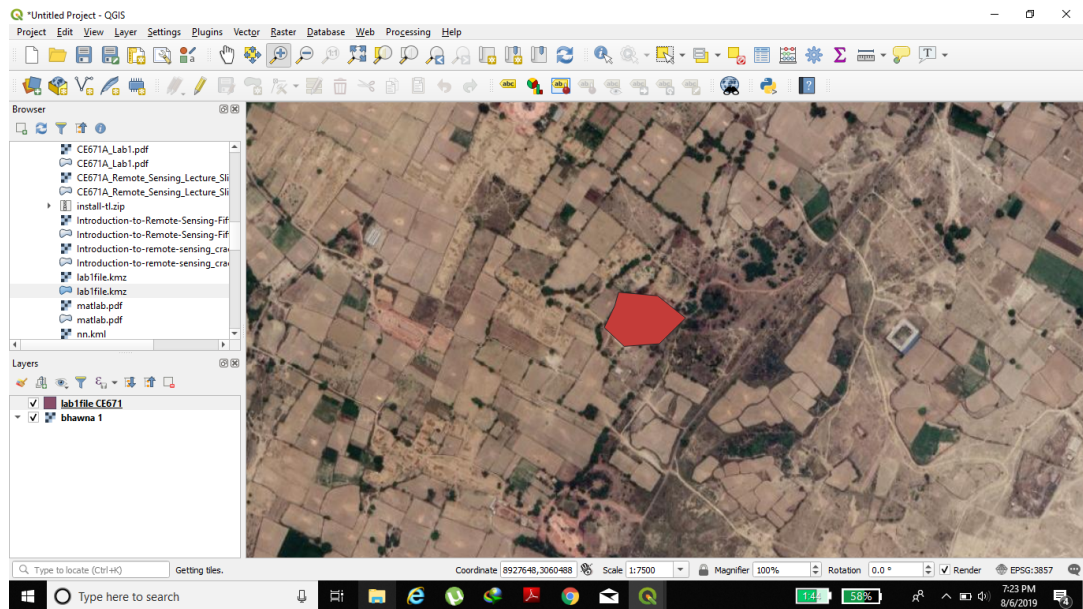

Figure 7: AOI 1
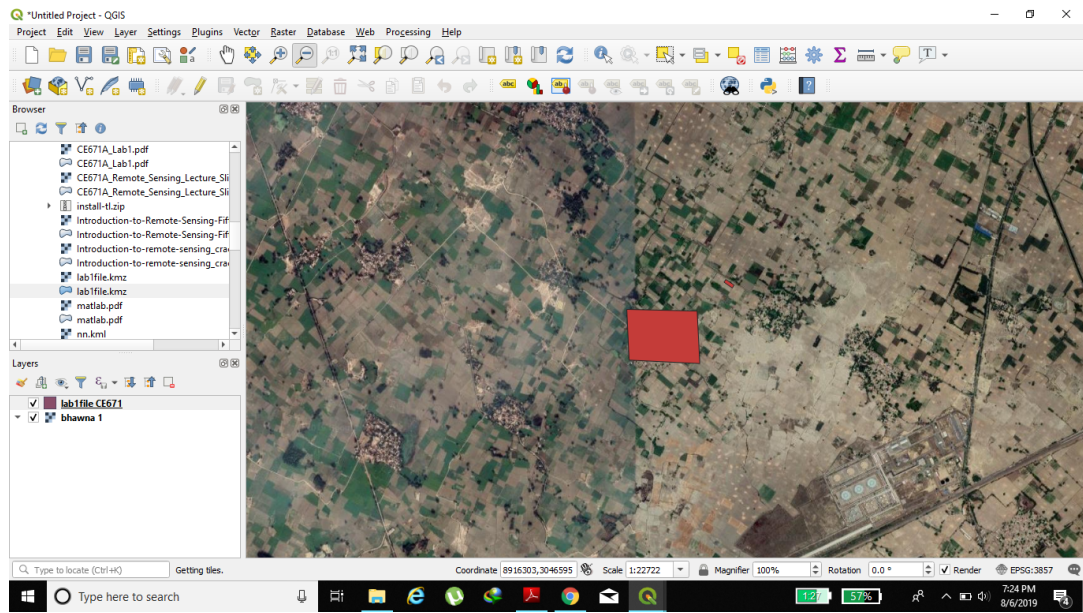

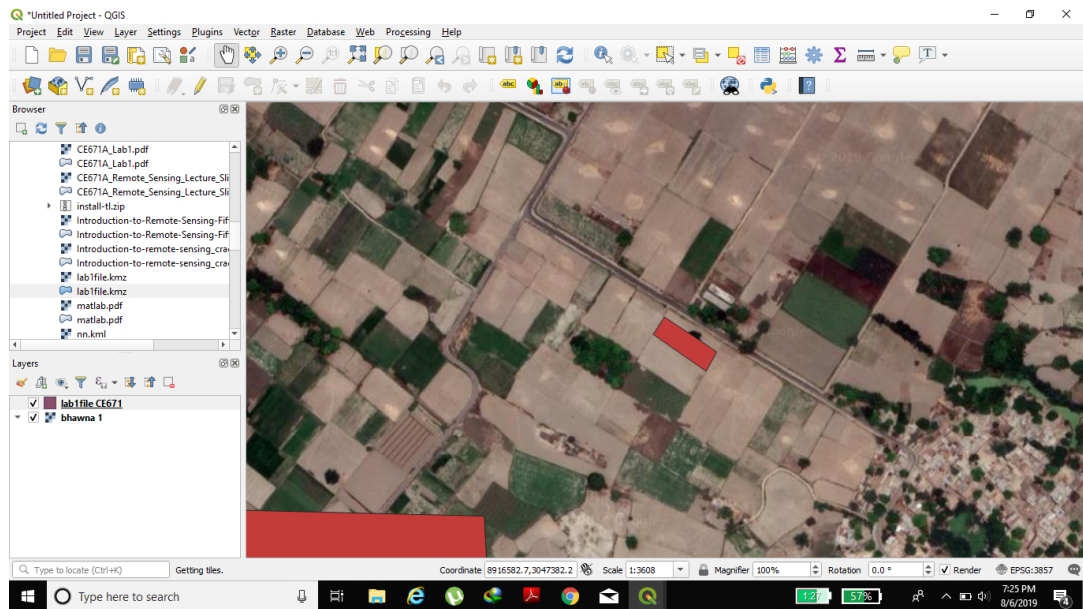Figure 8: AOI 2
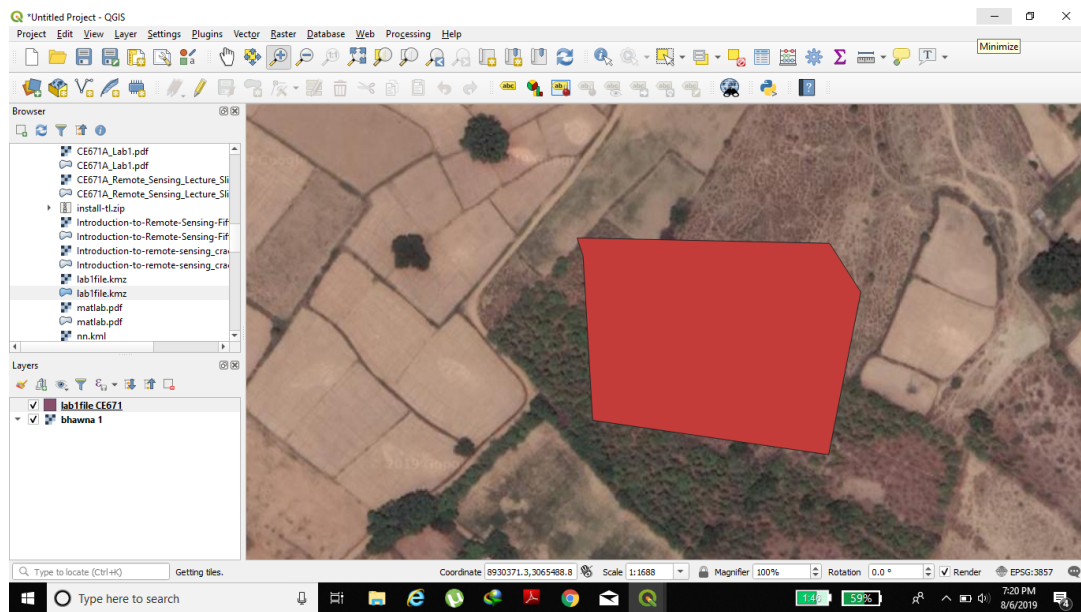
Figure 9: AOI 3

Figure 10: AOI 4
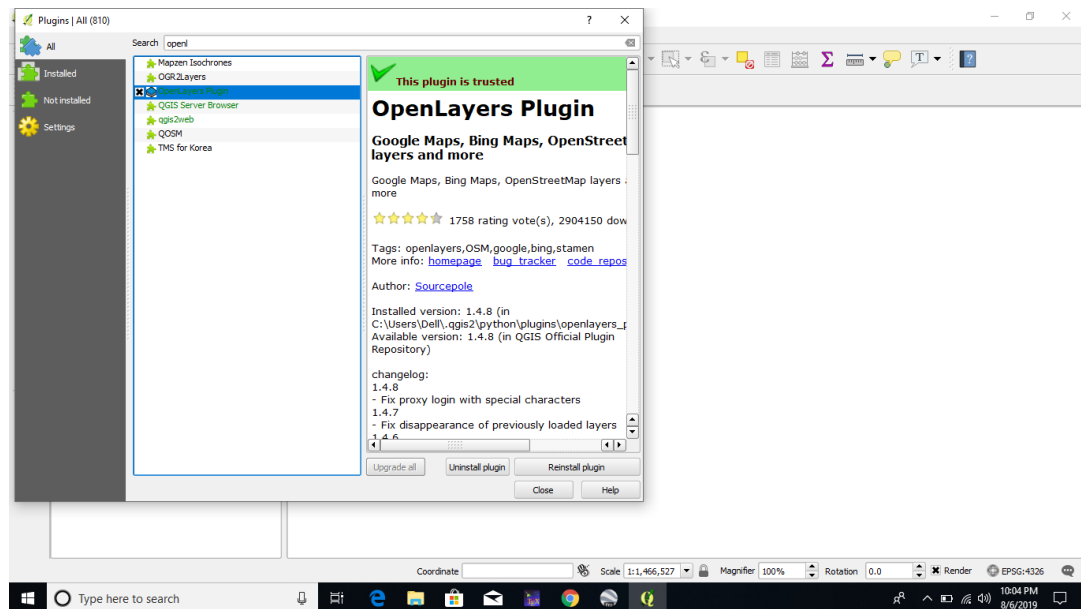
Figure 11: AOI 5

Figure 12: AOI 6

Figure 13: AOI 7

Figure 14: OpenLayers Plugin

3   DISCUSSIONS

In this assignment we have learn
Google Earth and its use n daily life
effect of spatial resolution of satellite data
image interpretation
we have interpreted different features of image by visual interpretation
we have also learned QGIS software ,installing of open layers plugin,importing kmz fle into qgis and overlaying
the imported kmz file on different maps

4   CONCLUSIONS

By interpreting images ,we come to know about different features on the ground, spatial resolution of images,we
have learnt about kml and kmz file.With the help of google earth, we can locate any point by determining its

longitude,latitude and elevation ,we can access any remote or inaccessible area without being in physical contact with the object.

5   REFERENCES

Wikipedia
Internet