Report 5

Describe progress/work done during the week chosen.

Was working on urban planning but after discussion with professor Sanjay, decided to switch to something related to platform for farmers to get relevant knowledge for their betterment. I thought about making a website which hosts GIS layer with relevant information for farmers.

Plans for next week

Start learning required tools and technologies to create GIS layers as I have never done this before.

Report 6

I started looking online for different tech stack to use for achieving this goal. I finalised to use apache tomcat server, geoserver, openlayers mapping api, postgresql database with postgis extension.

Start working on setting up server so that mapping facility can be hosted locally.

Report 7

I setup apache tomcat and geoserver on localhost. For that I installed required files for both of them, also installed required dependencies and wrote required code to get them up and running.

Installed jquery, openlayers, layerswitcher and bootstrap for use next week for basic functionality.

Report 8

start implementing basic mapping service in openlayers

Learnt how to use openlayers libraries using their documentation. Implemented base layer open street map using the openlayers library.

Will start looking for basic data related to india to test if I am able to render it on my website.

Report 9

Found india state and district shapefiles. Then I uploaded them on geoserver. Then I computed the bounds for those layers which are based on specified lat long coordinate system.

Will work on mid term presentation next week

Report 10

Prepared presentation and report for mid semester presentation of BTEP.

Will add database to the website to store all data for rending on the website.

Report 11

postgresql + postgis

Setup postgreSQL database. Now to support spatial data with georeferencing, I installed postgis extension. Now connected it to geoserver to fetch data from database to server.

Create additional informative data from trusted sources.

Report 12

create shapefiles in qgis and uploading to postgis

Found few government websites where I found relevant data such as soil data, apmc data, cold storage data. Some was already in shapefile format, some was in csv. Converted csv data to shpfile and uploaded to database. Then added layers to geoserver and rendered on frontend.

Work on adding features to use the available data.

Report 13

add features like get feature info,

Now that some data is available started working on basic features like click on point data to get all attributes, search functionality. Measure functionality.

Next week I will work on making the available data visually appealing.

Report 14

I have now made data more readable, added colors to separate data from each other. For this I have used the geostyler extension which can be integrated into geoserver and customisation can be done live.

I will start working on some suggestion system based on ML next week.

Report 15

I have found soil data with information such as Phosphorous, nitrogen, pottasium content, weather condition such as humidity, rainfall, temperature, Ph. It was made available by government itself. I have started testing different ML models on this data to predict which is the best crop to grow.

Next I will compare and finalise which is the best model to use for this system.

Report 16

After doing exploratory analysis of available data and trying out multiple different models,

I have finalised that light gradient boost is the best model to use with accuracy more than 99.5%.

Next I will integrate this ML model into my website for use.

Report 17

This week I have integrated the ML model into my website. So now one can enter the specifics of soil and get suggestion of which is the best crop to grow in these conditions. I have done this by setting up a python server with pickle file for ML model.

Next week I will prepare for presentation of end term. I will write report, create presentation, poster etc.