Administrative shape files

# Village shape files:

The village level shape files have been obtained as mentioned in the [**link**](https://docs.google.com/document/d/1UTvkyrAl3OotxgSw5YWa-GSMaTgrzHnn/edit?usp=sharing&ouid=107895431119829899953&rtpof=true&sd=true). The data can be found at the [**link**](https://drive.google.com/drive/folders/15Ci6ZUpVd-nWu3thurJllTcHjnnL-f3G?usp=drive_link).

# LGD village-panchayat mapping

For generating the **panchayat shape files**, we had to obtain the **village to panchayat mapping**, so that we can **merge the polygons** of the villages to get the panchayat shape files. This data was obtained from the **Local Government Directory data**[[**link**](https://lgdirectory.gov.in/rptConsolidateVillageGramPanchayat.do)]. After cleaning and preprocessing the data, we have prepared the dataset[[**link**](https://csciitd-my.sharepoint.com/:x:/g/personal/mcs212129_iitd_ac_in/EfmQ-Z6hfHJCtlaBeoMXhAABqfZjrmNilk6yby3yzTMCig?e=QmWrRZ)] which stores the mapping of the village to the respective panchayats.

| **S. No.** | **Column** | **Data type** | **Description** |
| --- | --- | --- | --- |
| 1 | **Village\_2011\_ID** | Integer | Census code of the village as per 2011 census. |
| 2 | **Village\_Name** | String | Name of the village |
| 3 | **Panchayat\_ID** | Integer | Unique panchayat ID assigned to each panchayat in LGD data |
| 4 | **Gram\_panchayat\_name** | String | Name of Gram Panchayat |
| 5 | **Subdistrict\_2022\_Name** | Integer | Name of the subdistrict |
| 6 | **Subdistrict\_2011\_ID** | String | 2011 census code of the subdistrict |
| 7 | **District\_2022\_Name** | Integer | Name of the district |
| 8 | **District\_2011\_ID** | String | 2011 census code of the district |
| 9 | **State\_2022\_Name** | String | Name of the state |
| 10 | **State\_2011\_ID** | Integer | 2011 census code of the state |

# Panchayat shape files

The panchayat shape files for **15 states** can be found at the [**link**](https://csciitd-my.sharepoint.com/:f:/g/personal/mcs212129_iitd_ac_in/EnhzfKljezhCuNnBnzXw3OQBiQEkd3TVaz9TvxtZnTEdSg?e=ICSdwx).

We have generated the shape files of the panchayat using the village shape files and village to panchayat mapping by aggregating at the panchayat level as explained above with the help of the Local Government Directory data. The shape files of villages were obtained from the **NASA Sedac[**[Link](https://sedac.ciesin.columbia.edu/data/set/india-india-village-level-geospatial-socio-econ-1991-2001/data-download)**][**[Documentation](https://sedac.ciesin.columbia.edu/downloads/docs/india/india-india-village-level-geospatial-socio-econ-1991-2001-documentation.pdf)**]**. The panchayat shape files have been generated by performing **unary union** over the constituent villages’ shape files using the **Shapely** library in Python.

The **village shape files** obtained from NASA **don't cover the urban wards**. Due to which, there are certain holes in the panchayat shape files generated through aggregation.

# Block shape files

The block shape files for **15 states** can be found at the [**link**](https://drive.google.com/drive/folders/15J_jPhIO0zG_kzF7JR2Mta1tzE_mPSnu?usp=share_link). We have generated the shape files of the block using the village shape files and village panchayat mapping by aggregating at the block level. The village to block mapping was also obtained from the same LGD village-panchayat mapping which also had the block names. Due to the same reason as panchayat shapefiles, that the **NASA Sedac** village shape files don't cover urban wards, we have certain holes in the block shape files.

# Getting the data at the district level

All the administrative shape files are currently uploaded at the state level, i.e. one shape file for each state containing all the polygons of the concerned administration whether it is village, panchayat or block. To get the shape file for a particular district, the scripts are to be executed. The scripts can be found [here](https://drive.google.com/drive/folders/1zPkloi_AF04uNjfMwZxOLgcAuNMkzWxV?usp=share_link).

## Installing the required packages

pip install -r requirements.txt

[Link to file](https://drive.google.com/file/d/1xXGf_0Dd8bQoMiV1o4oQ3b_EkywYip1q/view?usp=share_link)

## Getting village shape files at district level:

### Getting shapefiles with metadata

**python generate\_district\_level\_village\_shapefiles\_with\_metadata.py <state name abbreviation> <district name>**

[Link to script](https://drive.google.com/file/d/12Psonb3VkTH8UAYuc8UW8-4LjgLLj45H/view?usp=share_link)

You have to pass the abbreviations of the state names as given in the below mapping

State name to abbreviations mapping:

Andhra Pradesh: AP

Bihar: BR

Chhattisgarh: CG

Gujarat: GJ

Haryana: HR

Jharkhand: JH

Karnataka: KA

Maharashtra: MH

Madhya Pradesh: MP

Orissa: OR

Punjab: PB

Rajasthan: RJ

Tamil Nadu: TN

Uttar Pradesh: UP

E.g.: python generate\_district\_level\_village\_shapefiles\_with\_metadata.ipynb BR jamui

Here, BR stands for Bihar.

In the script, you have to change the directory paths(output\_dir and input\_dir) as per your directory structure for saving/fetching files. The input\_dir must contain the csv files for each state which can be found [here](https://drive.google.com/drive/folders/1Oizcuc1fiMT2tcJ_QhxeDMfCNuXVZkUO?usp=share_link).

### Getting shapefiles without metadata

**python generate\_district\_level\_village\_shapefiles\_without\_metadata.py <state name abbreviation> <district\_name>**

[Link to script](https://drive.google.com/file/d/1KtJvjdBiw37JiTxAVL57D3bVac_WVERG/view?usp=share_link)

The abbreviations are the same as for the above. In the script, you have to change the directory paths (input\_dir and output\_dir) as per your directory structure. The input\_dir must contain the csv files for each state which can be found [here](https://drive.google.com/drive/folders/1c4mg5ZvoESpt20GwlWlkrDmJ8XRPLsYW?usp=share_link).

## Getting the panchayat shapefiles at district level

**python generate\_district\_level\_panchayat\_shapefiles.py <state name> <district name>**

[Link to script](https://drive.google.com/file/d/1EzvheLuXNp9SzuUISLxE3umHaidvPcHD/view?usp=share_link)

Note that here, you have to pass the state names only, not the abbreviations. Same as above, you need to change the input\_dir and output\_dir variables as per your directory structure. The input\_dir must contain csv files for each state which can be found [here](https://drive.google.com/drive/folders/1TXlGS9T3FVrmCh2BIyP-0Hs1l-iolOPT?usp=share_link).

## Getting the block shapefiles at district level

**python generate\_district\_level\_block\_shapefiles.py <state name> <district name>**

[Link to script](https://drive.google.com/file/d/185SWTYtoeN2VEOtGpKiq_vvItnbDwGji/view?usp=share_link)

Here also, you have to pass the state names only, and not the abbreviations. You need to change the input\_dir and output\_dir variables as per your directory structure. The input\_dir must contain csv files for each state which can be found [here](https://drive.google.com/drive/folders/1Ln317yKx4tzgDYEaMR_kdWgRlzlPKybv?usp=share_link).