***Team name: Geo-techie***

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**Problem statement:** To identify hospital facilities in Lucknow district, identification of settlement areas is having more than 1000 population with no hospital and identification of hospitals serving more population during any pandemic.

**Materials and methods:**

***Dataset used:***

Settlement layer: Bhuvan 50k LULC map

Administrative boundaries: By Bhuvan, ISRO

Hospital point data: Open Street map (OSM)

Population data: Census 2011

***Methodology:***

All steps have been carried out in QGIS software

1. Extraction of settlement layer form LULC 50K map

2. Extraction of hospital point from OSM

3. Calculation of population for each settlement polygon with help Census data using field calculator in QGIS.

4. Overlay hospital point data over settlement layer.

5. Identification of settlement areas where population is >1000 but with no facility using distance to nearest point.

6. Identification of settlement areas lying < 10km distance from main city

7. Identification of hospitals serving step 6 population during any pandemic and holding more pressure.

***Application:***

1. Useful to identify gap areas lacking hospitals.
2. Useful to identify settlement areas where population is travelling more distance to reach hospitals.
3. Extremely useful to identify hospitals holding more pressure in advance of any pandemic so to serve population without lack of any facility during such time.