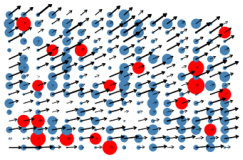
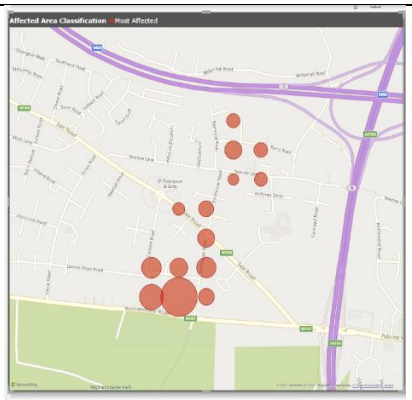
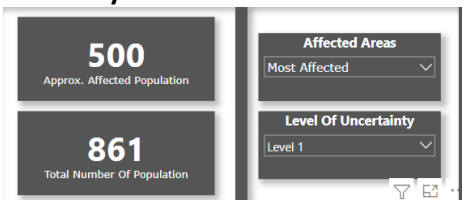


Report sheet: Data Visualization

Name: Avi Gupta **Student ID:** 200644019

Please fill this in within the boxes to describe how you completed the task, references can be added after the table. This should in total be no more than three pages long.

Part One Task	Description of how your submission achieved this.
Fit to task: does the visualization allow the identification of areas most and least in need of aid.	Yes, As per the given data the affected areas were divided into 4 categories: **Insignificant->** This classification includes those areas that can be avoided by the commander but if they have excess supplies they can consider those areas. **Least Affected->** Here, the category contains those areas where the number of affected cells is low. This category is highlighted by blue and can be seen as the blue bubbles on the map. **Moderately Affected->** It contains those areas that have a moderate number of infected cases. It can be seen as the orange bubble on the map. **Most Affected->** This category contains all those areas where the simulation predicted the highest number of infected cells. The areas in this are marked by red bubbles on the map. Along with the affected area selection, the commander may also need to select the level of uncertainty. Here the uncertainty describes the fluctuations in the data predicted by the simulations. It is divided into 3 levels. **Level 1->** where the data fluctuation is low. **Level 2->** Where data fluctuation increased. **Level 3->** Where the data fluctuation is at its highest. With the combination of affected areas and level of uncertainty, the commander will be able to locate those areas which need the aid most and also those regions which can be taken into consideration.
Use of visual channels	For this project, I have used 4 visual channels: **Bubble Map:** This channel will show the location of the infected cells in the form of bubbles. The size of the bubble is dependent on the number of cases in a particular affected area. **Slicers:** This visual will help the commander to choose from the affected area category and level of uncertainty. This will be explained in the interaction part of the report. **Cards:** This visual shows the total population of the area along with the data of approximately affected cells in that area. **Area Chart:** This visual shows the approximate number of influenced populations by the location.
Gestalt design principles	**Similarity:**

	 This principle was achieved when the color was also decided according to the affected area classification. **Red** for most affected, **Orange** for moderately affected, **Blue** for least affected, and **Grey** for insignificant. **Proximity:**  This principle was achieved when the same category of the visual can be seen separately. As there are two slicers and cards but they can be easily identified as separately as shown in the image above.
Use of color	The color combination that is used was decided by keeping the color blind people in mind. I have used: White, Grey, Red, Cyan, Blue, Orange.
Use of interaction	As for interactions I have used 2 **Slicers** that contain the classification of affected areas and level of uncertainty which will pinpoint the locations of the infected cells on the map & area chart of approx. influenced population by the location which will show the map bubbles according to the area and vice-versa.
Use of language and text	The text that is used in this project is easy to understand with the use of proper grammar and sentence formation.
Technical aspects: performance, reliability, fit on a desktop screen.	The page is divided into 1920x1080 ratio which is considered to be suitable for any devices such as desktop screens, laptops, mobiles, and tablets
Part Two Task	
Fit to task: does the visualization allow the identification of areas most and least in need of aid.	Yes, the areas are again classified into 4 criteria, **Insignificant->** Those that can be avoided, **Least->** With less number of infected cases, **Moderate->** With a medium range of infected cases, and **Most->** With the highest number of cases. Like the previous one, it also has 3 levels of uncertainty which shows the fluctuations in data. Along with this classification, the report also shows a comparison between the data of variation in 4 simulations and 1000 simulations. The project also contains two cards that show

	the approximate population affected in an area and the total number of population.
Effective visual representation of the data variations over multiple runs.	To achieve effectiveness in the visualization, I have used the slicer which will zoom in at the location according to the affected category.
Report Contents	
Logical content structure, range, and quality of reference.	**Logical Content & Range**: Part 1 Task:- Affected Area Classification Criteria According To Mean: Insignificant: 1-6 Least: 6.25-11 Moderate: 11.25-20 Most: 21.5-76.25 Level Of Uncertainty According To Index Of Dispersion: Level 1: 0-0.5 Level 2: 0.507-1.2 Level 3: 1.20-3.17 Part 2 Task:- Affected Area Classification Criteria According To Mean: Insignificant: 1-2.58 Least: 2.60-4.95 Moderate: 5.01-9.90 Most: 10.23-45.7 Level Of Uncertainty According To Index Of Dispersion: Level 1: 0.747-0.876 Level 2: 1.239-2.496 Level 3: 2.508-30.736 **References:** **Gestalt Principles:** https://www.interaction-design.org/literature/topics/gestalt-principles [Accessed On 15/10/2021]. **Use Of Color:** Paul Tol's Notes (sron.nl) [Accessed On 17/10/2021]. **Data Merging:** https://docs.python.org/3/library/glob.html https://pandas.pydata.org/pandas-docs/version/1.3/user_guide/10min.ht [Accessed On 17/10/2021].