Assignment - 4

1. Explain the concept of resampling in time series data. How does it help in analyzing seasonal patterns?
2. What are spatial joins? How do they differ from regular joins in databases?
3. Describe the difference between upsampling and downsampling in time series resampling. When would each be used?
4. Explain how rolling windows can be used to calculate a moving average. Why is this useful in data analysis?
5. Describe a scenario where geocoding would be applied. What are the benefits of using geocoded data?
6. Discuss the concept of feature extraction in audio processing. Why is it important for analysis?
7. Describe the challenges faced when merging different datasets in GIS. How can these challenges be overcome?
8. Explain the importance of data quality when integrating external datasets into GIS. What steps can be taken to ensure quality?
9. What are some common preprocessing techniques for handling image data in machine learning? Provide at least two examples.
10. What is the purpose of integrating external datasets with GIS? Give an example.

Assignment – 5

1. Describe the key features of Jupyter notebooks that support documentation.
2. Explain the basic workflow of using Git for a new project.
3. Discuss the importance of documentation in data wrangling and how it impacts project outcomes.
4. Explain how to use GitHub issues to manage tasks in a data wrangling project.
5. Discuss how reproducibility affects results and collaboration.
6. Compare the benefits of using a workflow management tool versus manual scripting for data wrangling.
7. Discuss the essential components of a well-organized data wrangling project.
8. Explain the role of metadata in managing data wrangling projects. Why is it important?
9. What strategies can be employed to ensure effective Collaboration in a data wrangling project?
10. What is the purpose of using code comments in data wrangling?