# Group\_46 Assignment 3.1 Assumptions

1. Node number 1 is the destination node where all water flows towards:
   * Reason for assumption: Node 1 is placed in the Timor Sea which is the largest notable near-by body of water.
   * Rivers in-land are typically at a higher elevation than sea-level and flow toward a lower elevation.
2. The map we have can be represented with a directed tree; all nodes are connected by exactly one path.
   * This is necessary, as if there exist multiple paths between two nodes, the direction of all edges may not be determinable based on the data we have.
   * This assumption holds true for our map.
3. The data is assumed to be formatted in a Comma Separated Value (CSV) as such:
   * **Format:** Node\_Index, x\_coordinate, y\_coordinate, node\_type, adjacent
   * **Example:** 2, 230, 190, "junction", "19\_35\_36"
   * **Where,**
     1. **Node\_Index:** The name or index that is used to represent the site as given in the assignment provided map.
     2. **X\_coordinate:** The x axis coordinate of the node.
     3. **Y\_coordinate:** The y axis coordinate of the node.
     4. **Node\_type:** It is of either type “headwater” or “junction”, respective of the data provided in the given map.
     5. **Adjacent:** A list of nodes that are adjacent to the parent node.

The data format is assumed and is visually checked and extracted from the given map. The data may contain data different from the later provided data in format and values.

1. Start node for traversal may be dynamic and may change with respect to the future requirements but the destination is assumed as node 1, representing the flow of water from different headspring and junction to the final outlet.