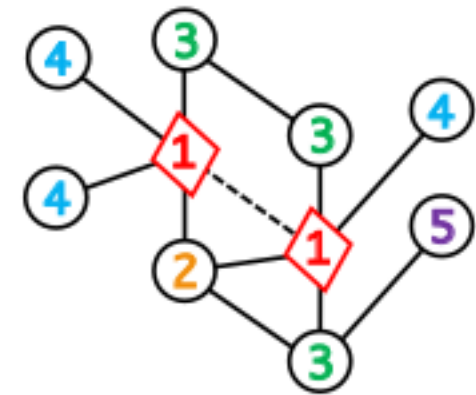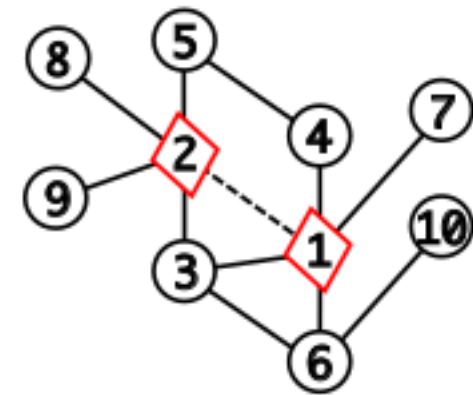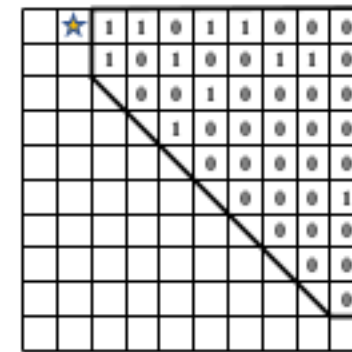**Extract enclosing subgraph for a target link** → **Assign initial colors to vertices according to their geometric mean distance to the link** → **Refine the colors to impose a vertex ordering which preserves the initial color order** → **Construct adjacency matrix representation using the calculated vertex ordering, which is input to a neural network**