

## Lab 5 (21 Feb 2019)

**Problem 1 :** Implement the Disjoint-Set Union Data Structure (with the union-by-rank and path-compression heuristics). You can create separate class for the Data Structure and implement the three operations i.e. **makeset**, **findset** and **union** as three class methods. You could implement a separate method **printsets** that prints the collection of disjoint sets and the elements within. (This could be useful in debugging and making sure your code is working fine).

**Problem 2:** Implement Kruskal's MST algorithm on an undirected graph. Use the data structure you have implemented in problem 1 in your code here. Use modules to import your code. For e.g. for Python, you can refer to <https://www.programiz.com/python-programming/modules> or <https://docs.python.org/2/tutorial/modules.html> on how to build/import modules. Test your code on the example discussed in class (and other examples designed by you!)