

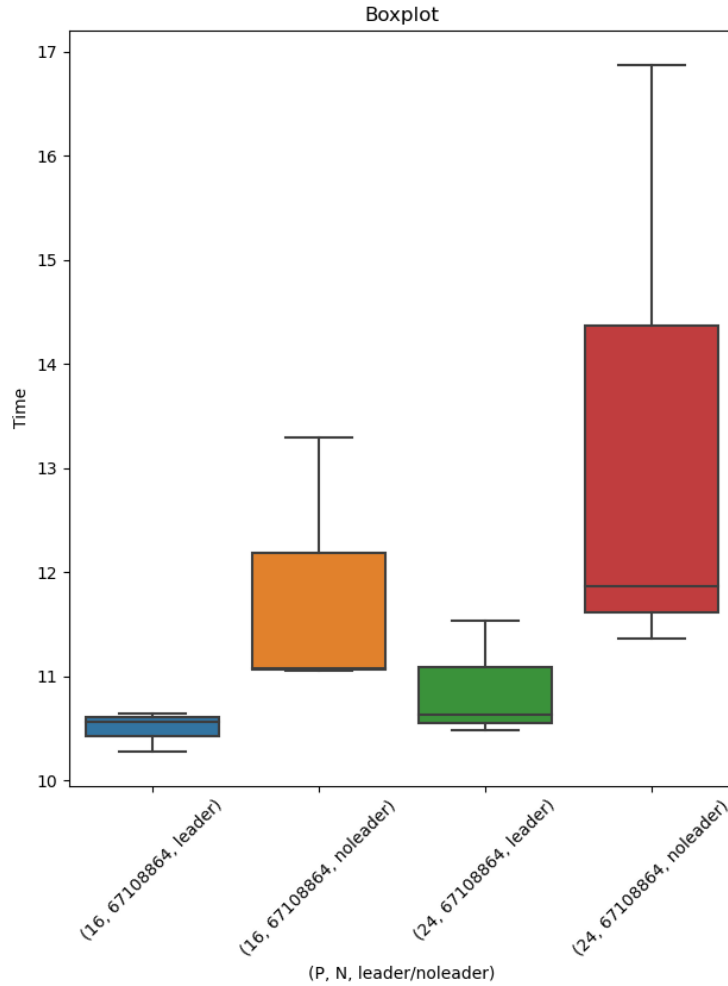
# CS633 - Assignment-2(Bonus)

## Group - 21

Deven Joshi - 210326 (devenaj21@iitk.ac.in)  
Shishir Gujarey - 210977 (shishirg21@iitk.ac.in)  
Shreyash Kumar - 211009 (shreyashk21@iitk.ac.in)

---

### Plot and Observations



From the above plot, we can make the following observations:

- For the same N and P, we can see that the time taken for data exchange with leader ranks is lesser than the time taken without leader ranks. Hence, having leader ranks reduces the time taken for data exchange by reducing the number of inter-node communications.
- There is a significant difference in the time take for similar runs at times, for both leader and no-leader instances. This is probably due to the scheduling and job interference taking place in the hpc2010.