

# Study implementation of the van Emde Boas tree with application to Kruskal and compare wrt RB and AVL trees.

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## Team Members

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## Deliverables

- Van Emde Boas tree supporting basic operations like insertion, deletion, get minimum, get maximum, search.
- Red Black tree supporting basic operations like insertion, deletion and search.
- AVL Tree supporting basic operation like insertion, deletion and search.
- Kruskal implementation using above data structures to compare their performances.

## Project Delivery Plan

- Individually completing data structures.
- Implementing them in separate files.
- Implement Kruskal and compare its running time and memory used while working with different inputs for different data structure used.

## Technologies to be used

- C++ for writing the codes.
- Python for plotting graphs.

## Online Resources

- [https://en.wikipedia.org/wiki/Red%E2%80%93black\\_tree](https://en.wikipedia.org/wiki/Red%E2%80%93black_tree)
- [https://en.wikipedia.org/wiki/AVL\\_tree](https://en.wikipedia.org/wiki/AVL_tree)
- [https://en.wikipedia.org/wiki/Van\\_Emde\\_Boas\\_tree](https://en.wikipedia.org/wiki/Van_Emde_Boas_tree)

## Git repository

- <https://github.com/amanjoshi668/Trees>

## Plan for testing

- Randomly generated graph and then comparison.
- Submitting to some online judge which requires Kruskal implementation to get more accurate results about memory used.

## End User Documentation

- Various Problems on Kruskal's are available online solution can be tested there.