DSA Lab Assignment 4

Problem Statement 4:

Implement a sparse matric with operations

1. initialize a empty sparse matrix
2. insert an element in sparse matrix
3. Add two matrices and return the result as a matrix.
4. Transpose Sparse matrix.

(Hint: Use array of structure)

Lab File Writing:

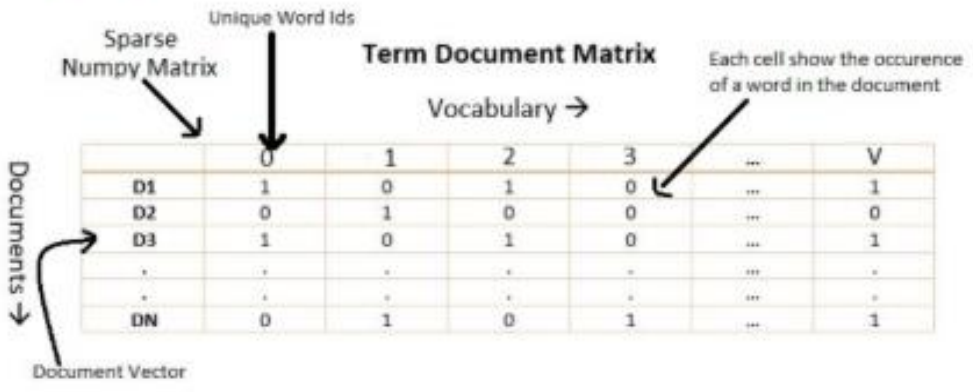
Write Short Note on

1. Sparse Matrix and its representation
2. Algorithm for each operation
3. Time complexity of each operation with justification
4. Applications of Sparse matrix

Conclusion

Additional Program:

Create the following Term Document Matrix (Sparse Matrix)



	0	1	2	3	...	V
D1	1	0	1	0	...	1
D2	0	1	0	0	...	0
D3	1	0	1	0	...	1
.	.	.	.	.	...	.
.	.	.	.	.	...	.
DN	0	1	0	1	...	1

The Matrix has shape **No of Documents X Vocabulary**

- Represent documents as sparse matrices(represent documents as rows, terms as columns)
- Add them to get combined term frequency matrix.
- Transpose the term document matrix to get term-wise document view.

Note:

- Check the above writeup in next turn.
- Ensure the code is well documented and modular.
- Upload code file(.c) and its output screenshot in Zip file on Moodle