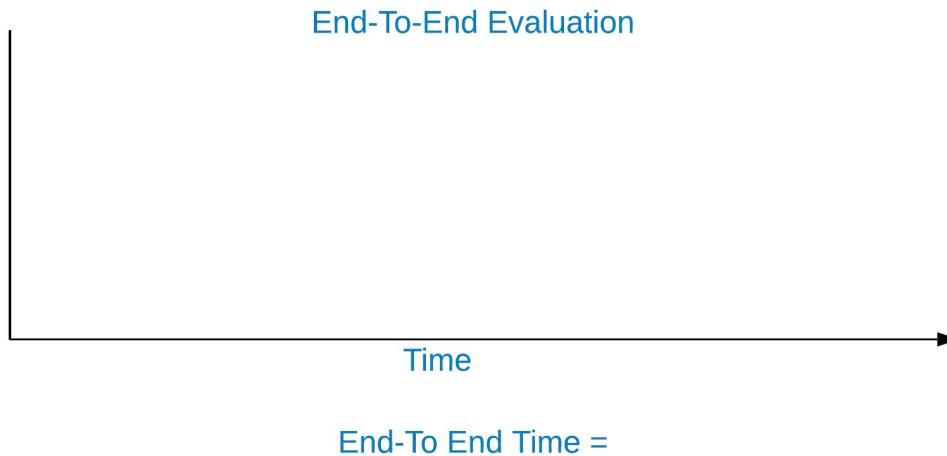

Graph Processing

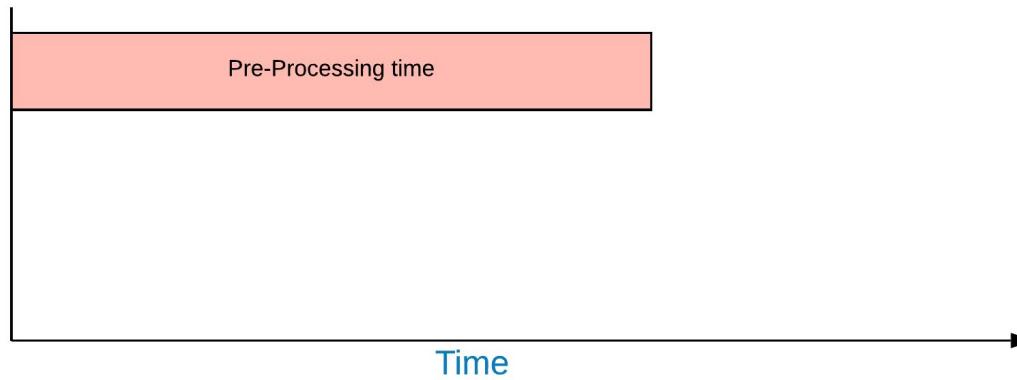
Data Structures and Pre-processing

Presenter : Abdullah Mughrabi

End to end acceleration



End to end acceleration



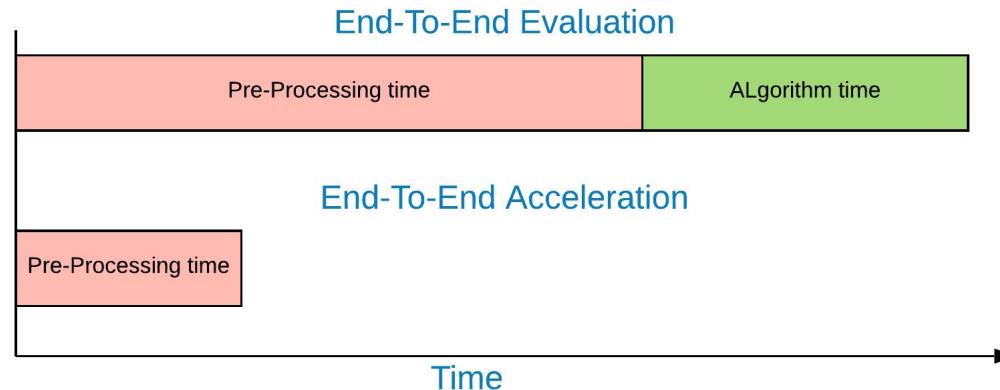
End-To End Time = Pre-processing

End to end acceleration



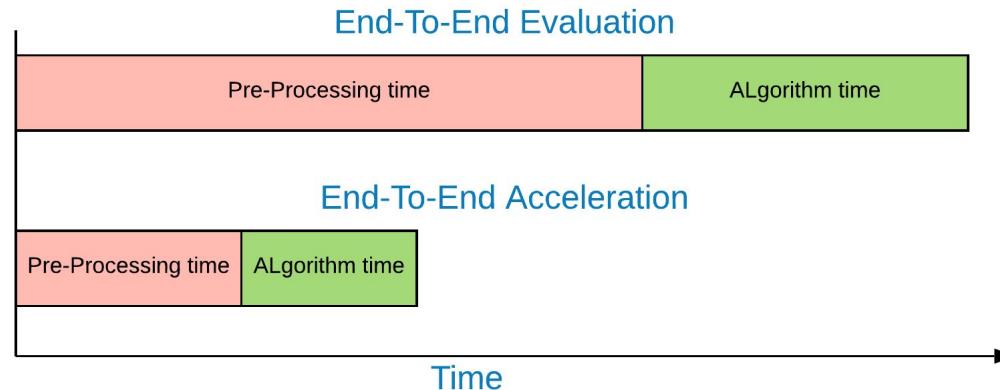
End-To End Time = Pre-processing + Algorithm time

End to end acceleration



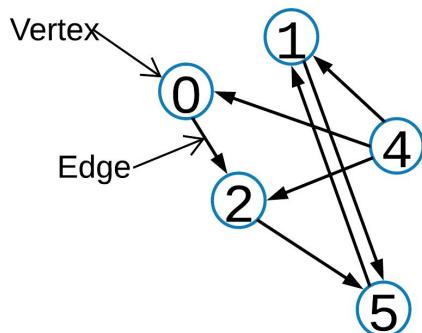
End-To End Time = Pre-processing + Algorithm time

End to end acceleration



End-To End Time = Pre-processing + Algorithm time

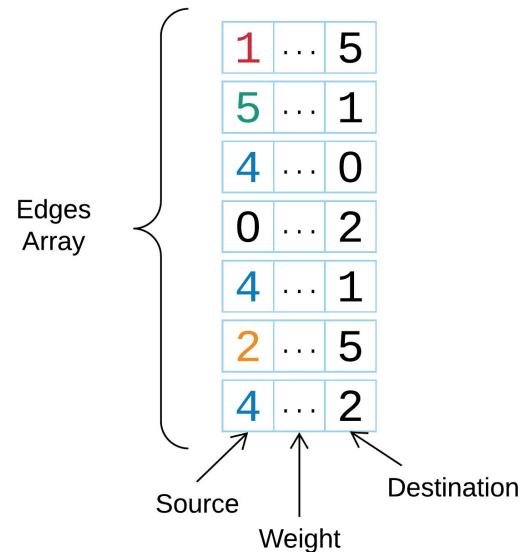
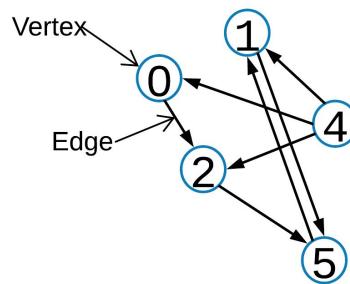
Graphs in storage



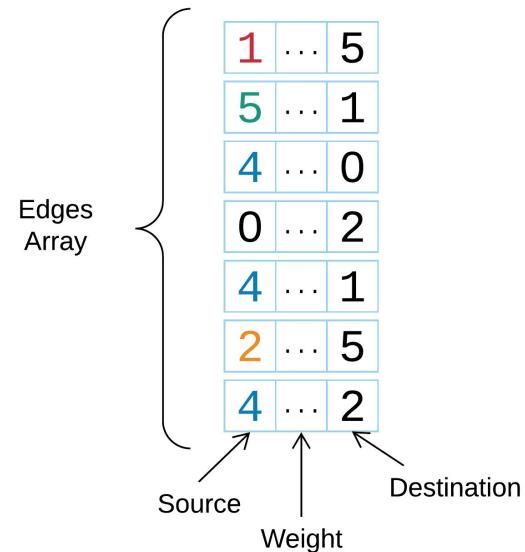
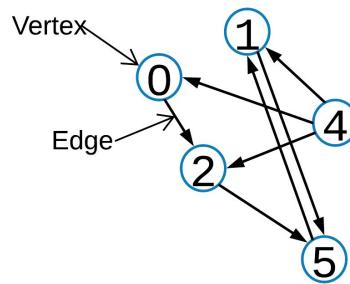
Edge List File

<i>Src</i>	<i>dest</i>
1	5
5	1
4	0
0	2
4	1
2	5
4	2

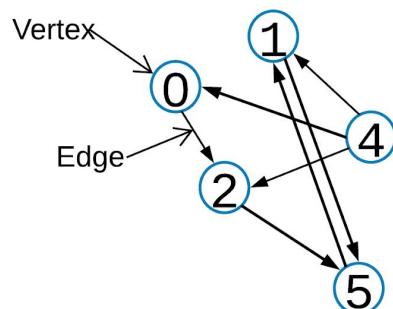
Graphs in memory



Edges Array

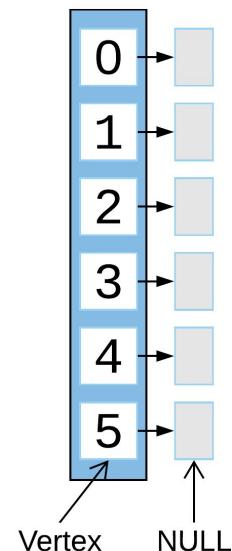
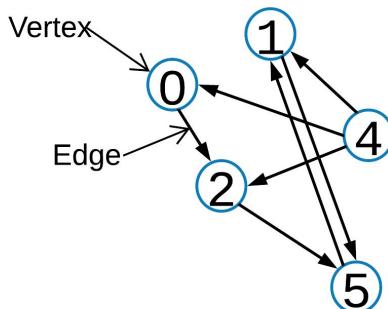


Adjacency Matrix

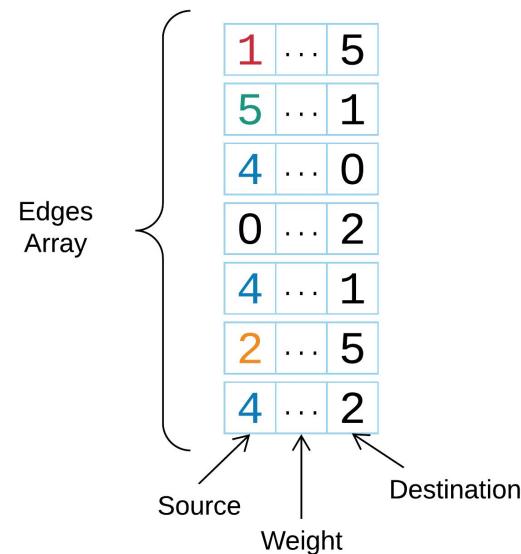
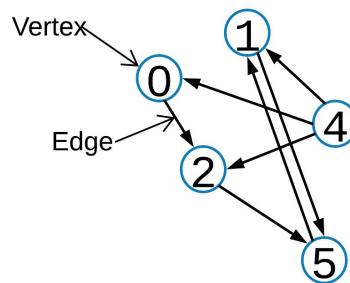


	0	1	2	3	4	5
0	0	0	1	0	0	0
1	0	0	0	0	0	1
2	0	0	0	0	0	1
3	0	0	0	0	0	0
4	1	1	1	0	0	0
5	0	1	0	0	0	0

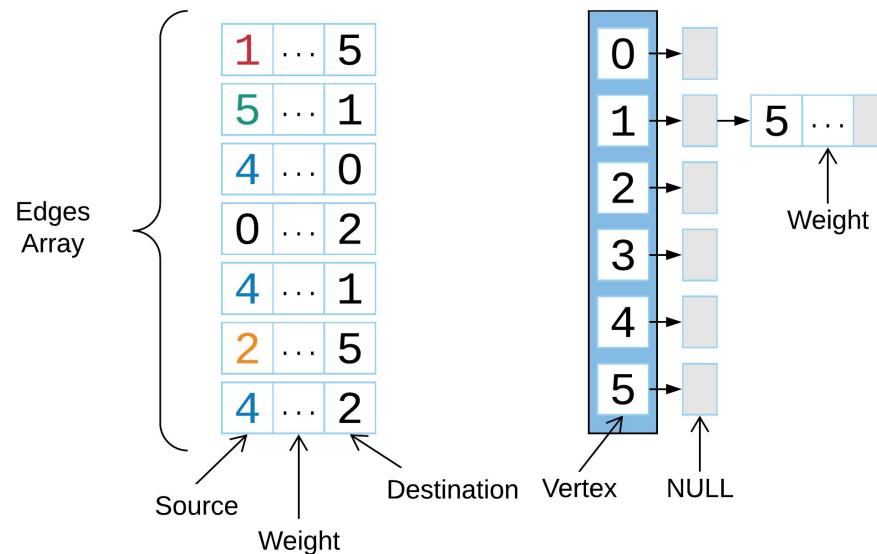
Linked Lists



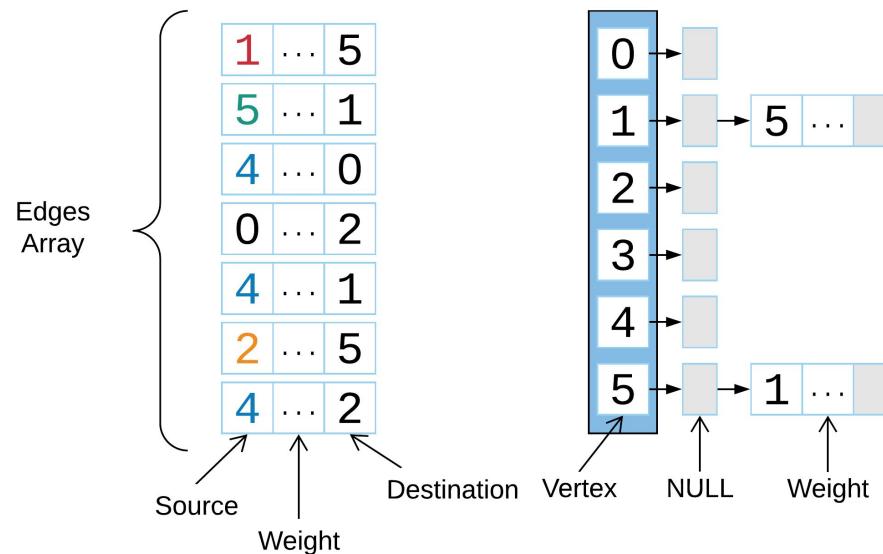
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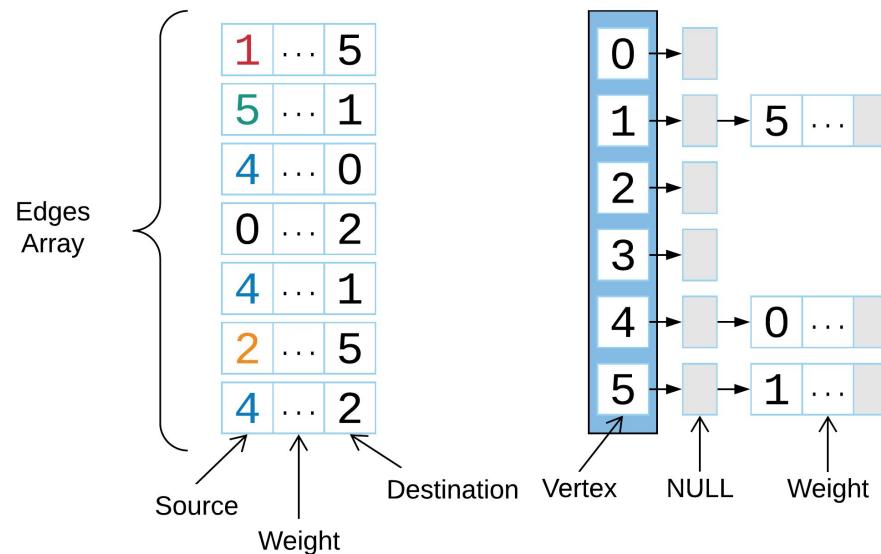
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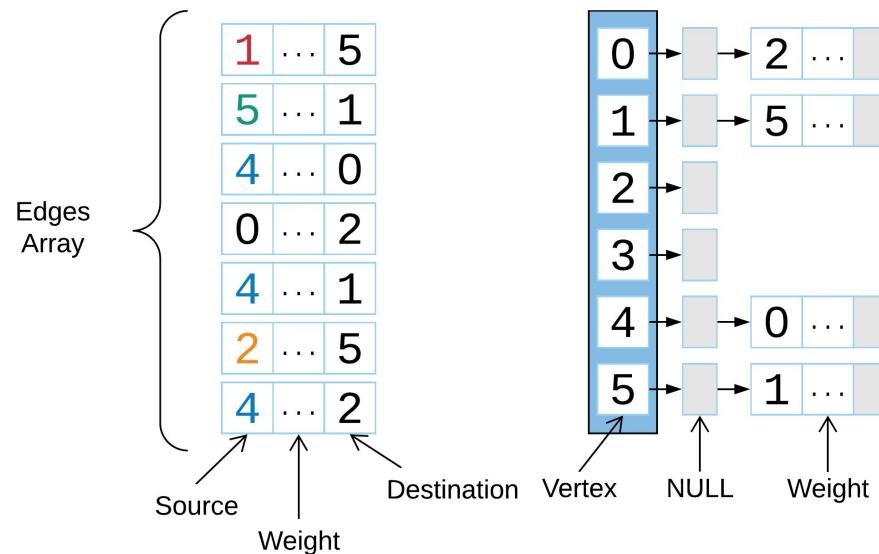
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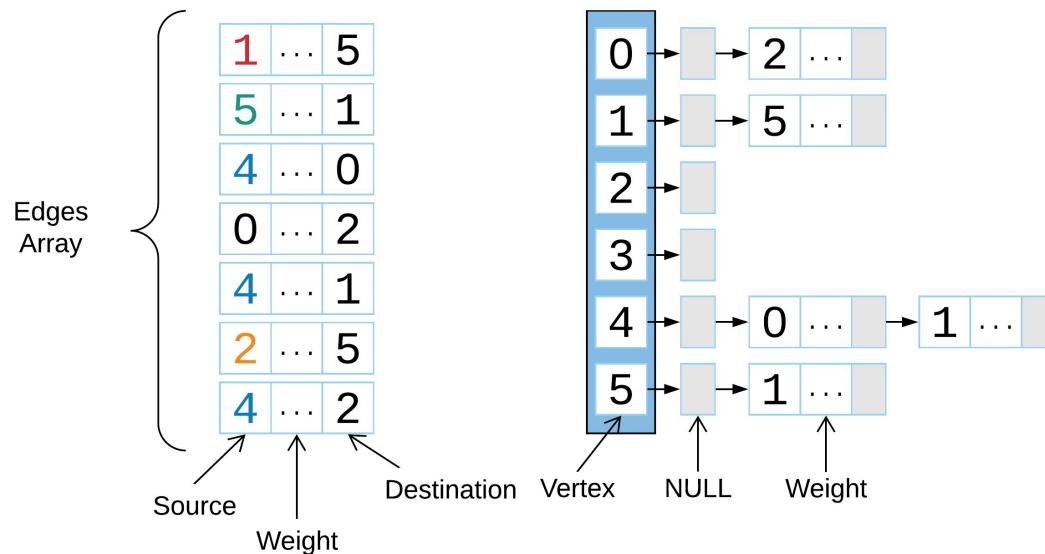
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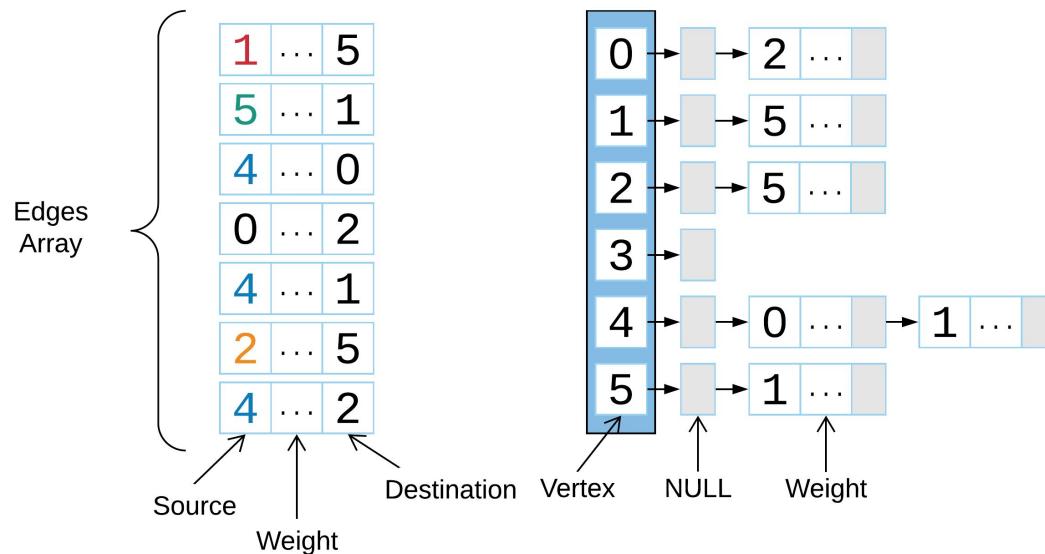
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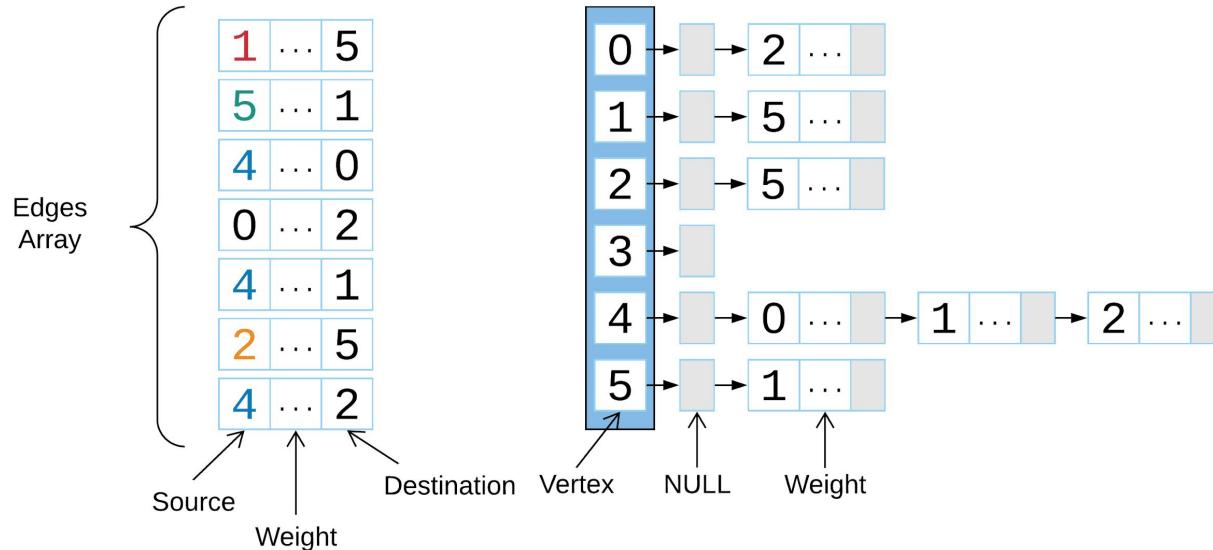
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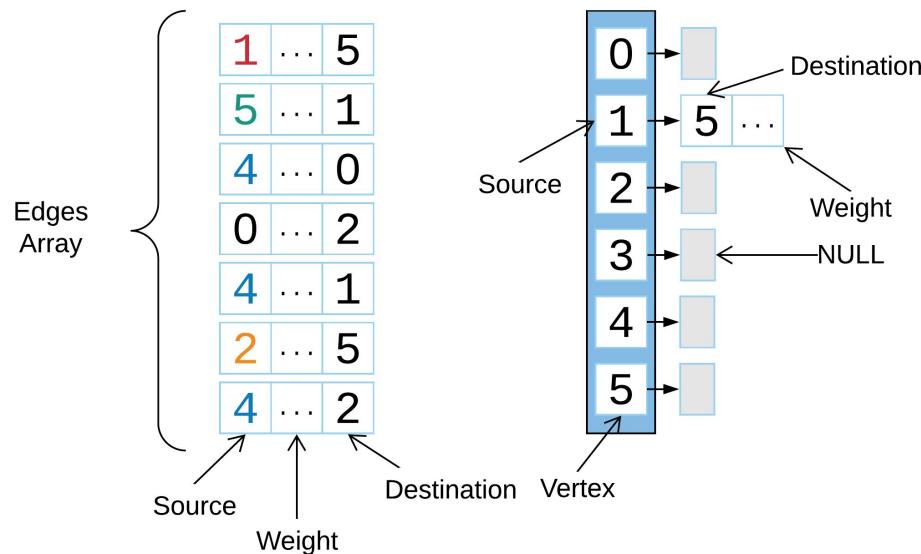
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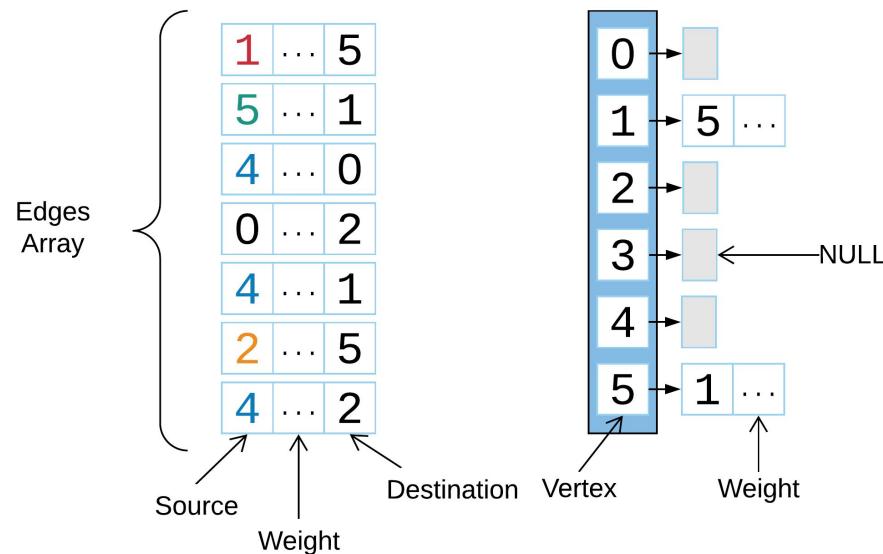
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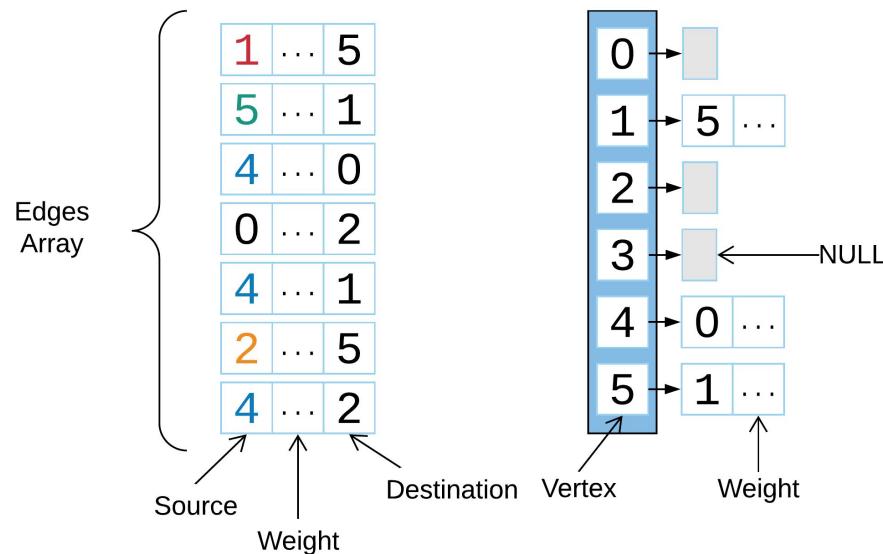
ArrayLists



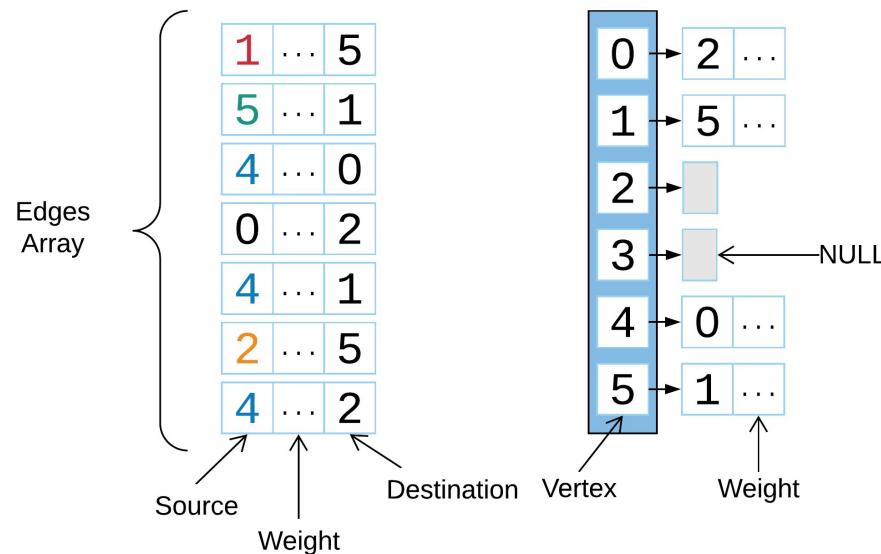
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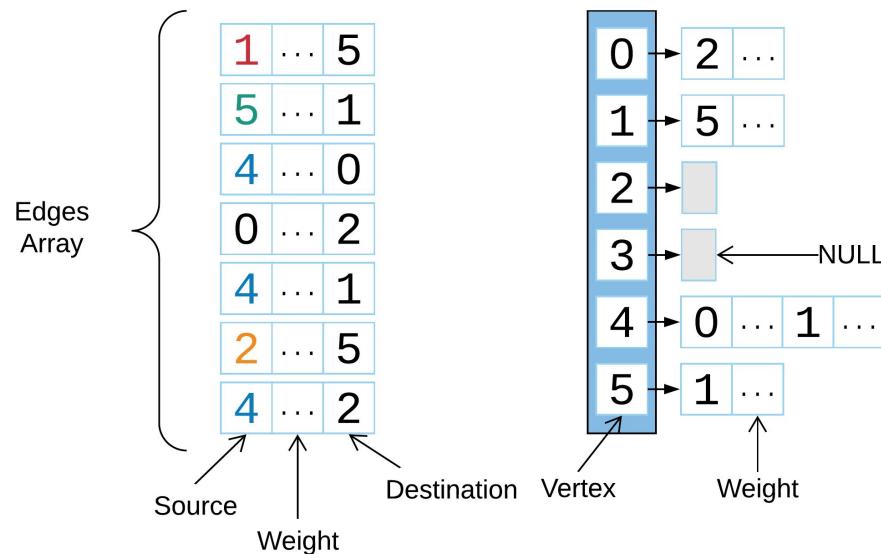
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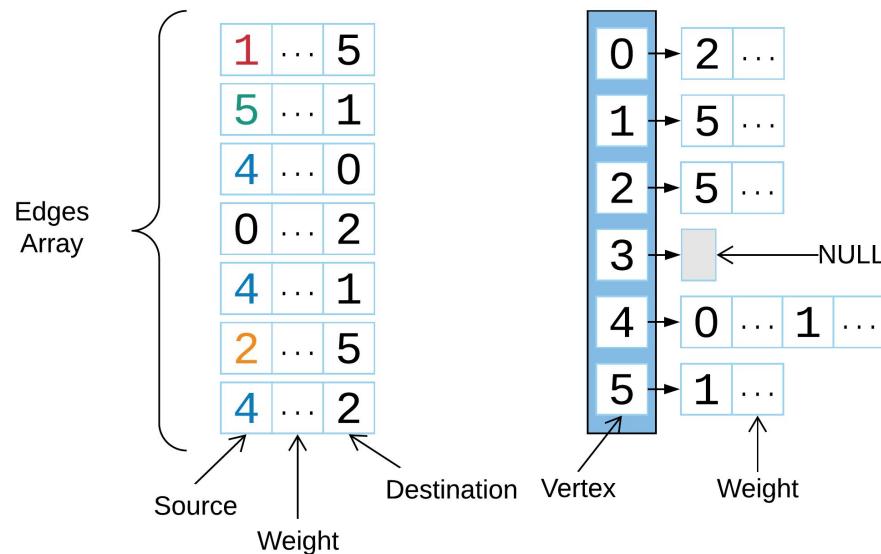
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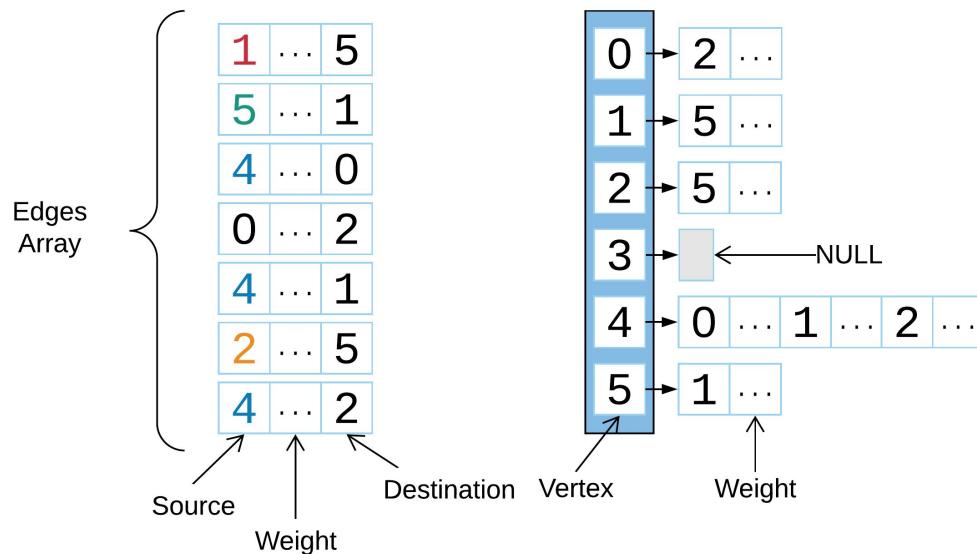
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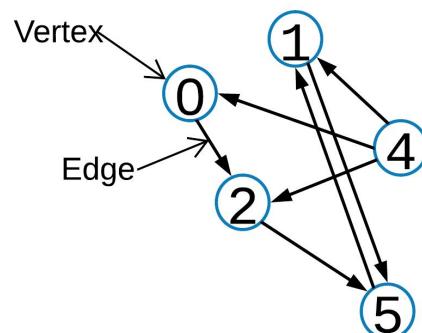
ArrayLists



ArrayLists



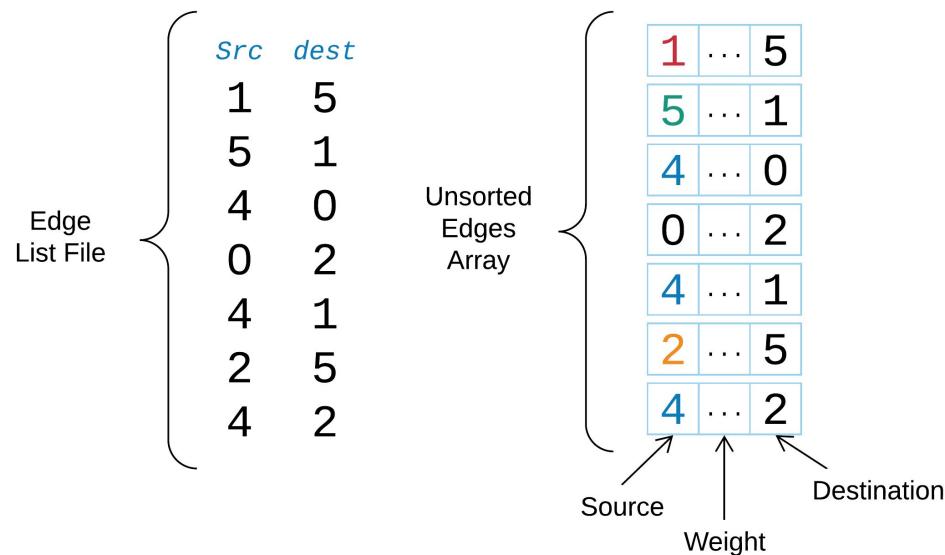
Compressed Sparse Matrix (CSR)



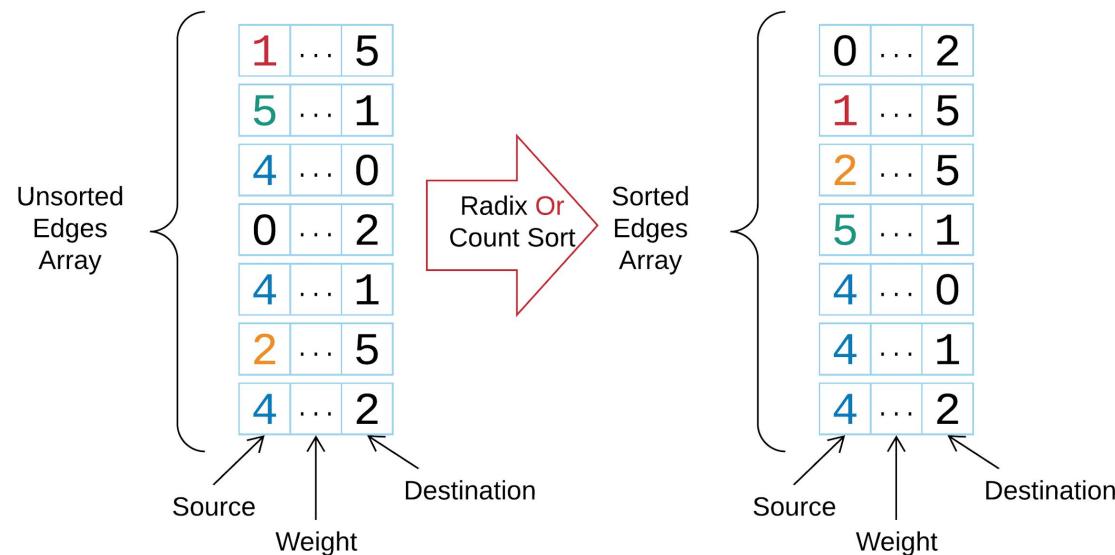
Edge List File

<i>Src</i>	<i>dest</i>
1	5
5	1
4	0
0	2
4	1
2	5
4	2

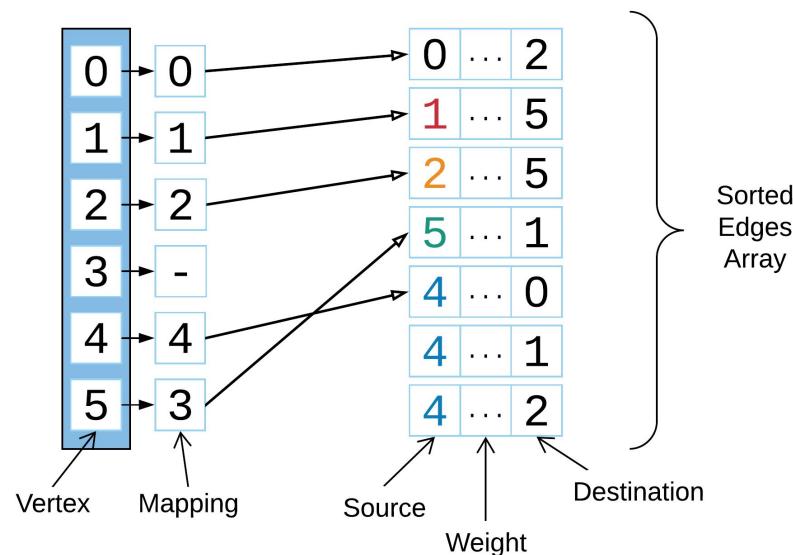
Compressed Sparse Matrix (CSR)-Load



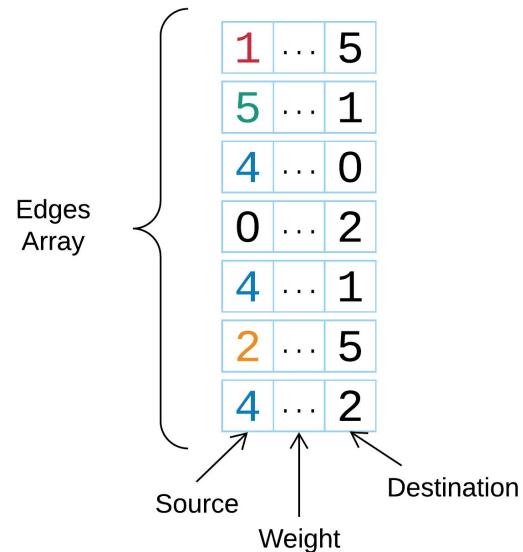
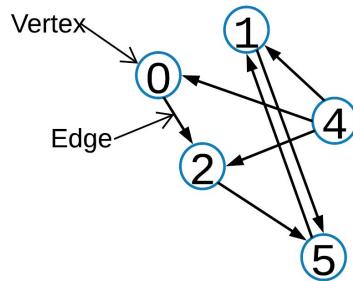
Compressed Sparse Matrix (CSR)-Sort



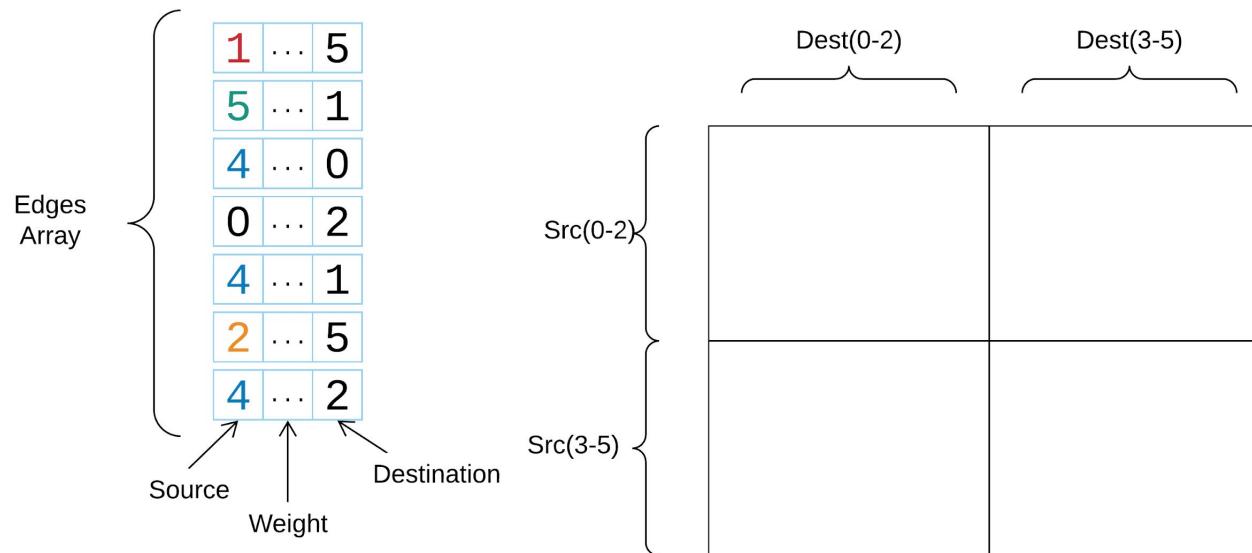
Compressed Sparse Matrix (CSR)-Map



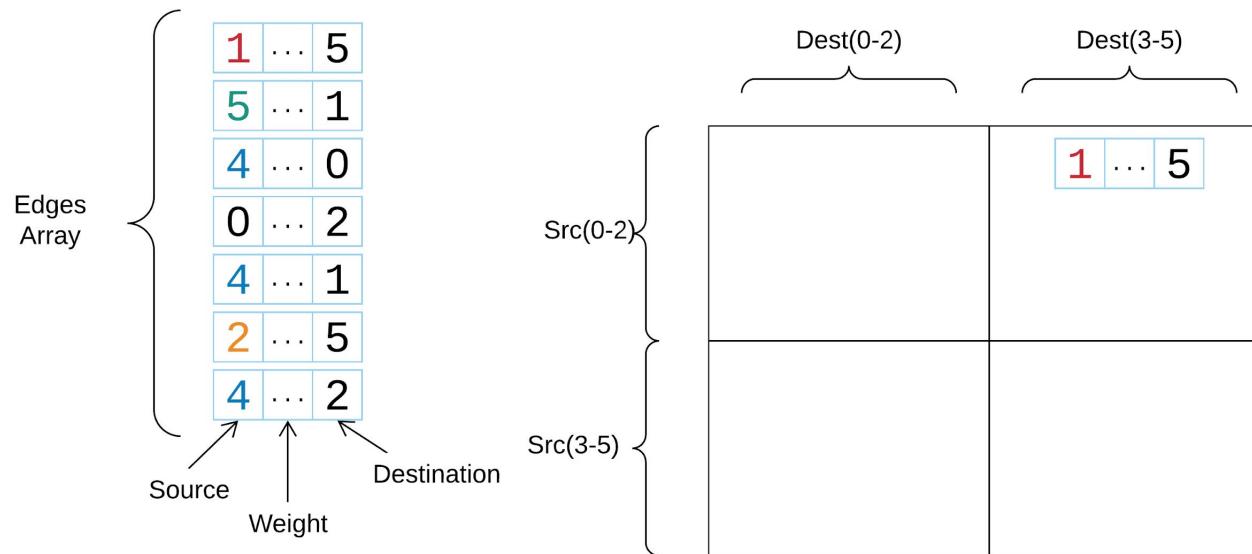
Grid



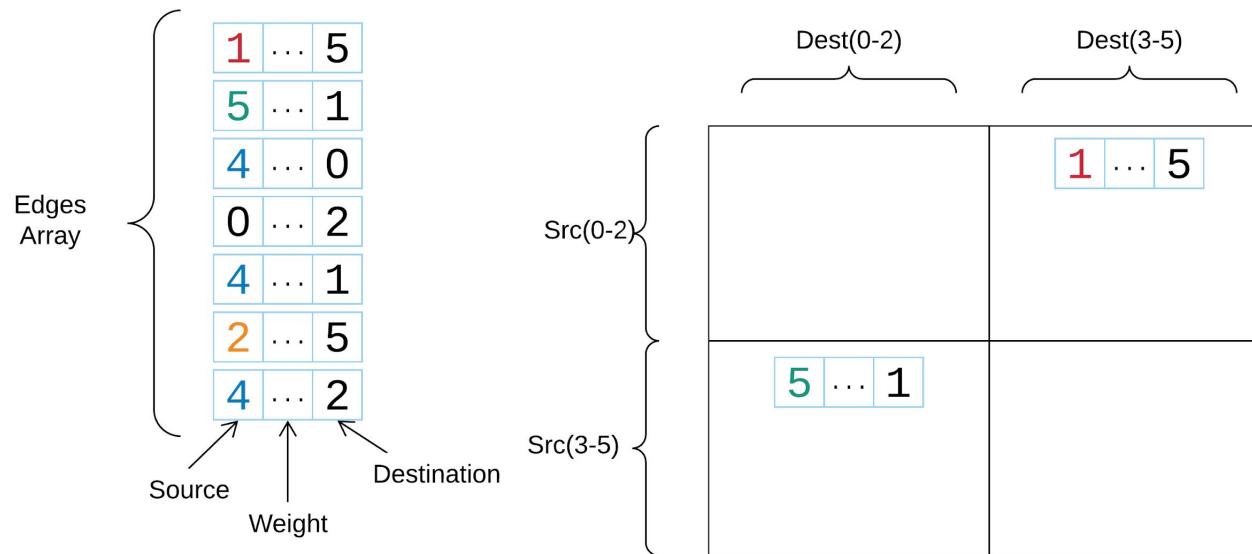
Grid



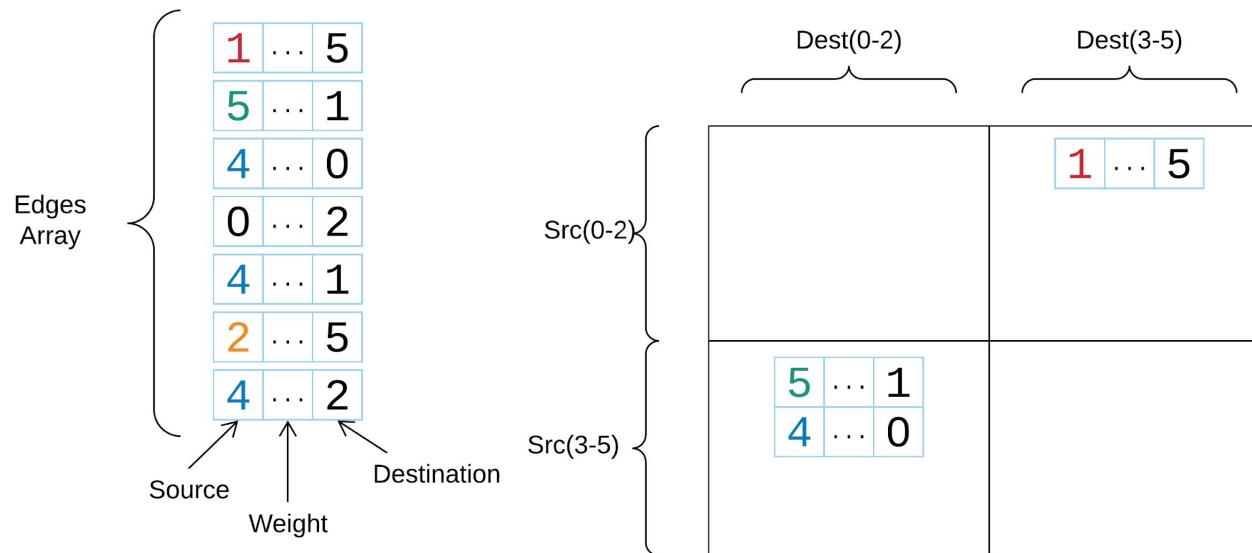
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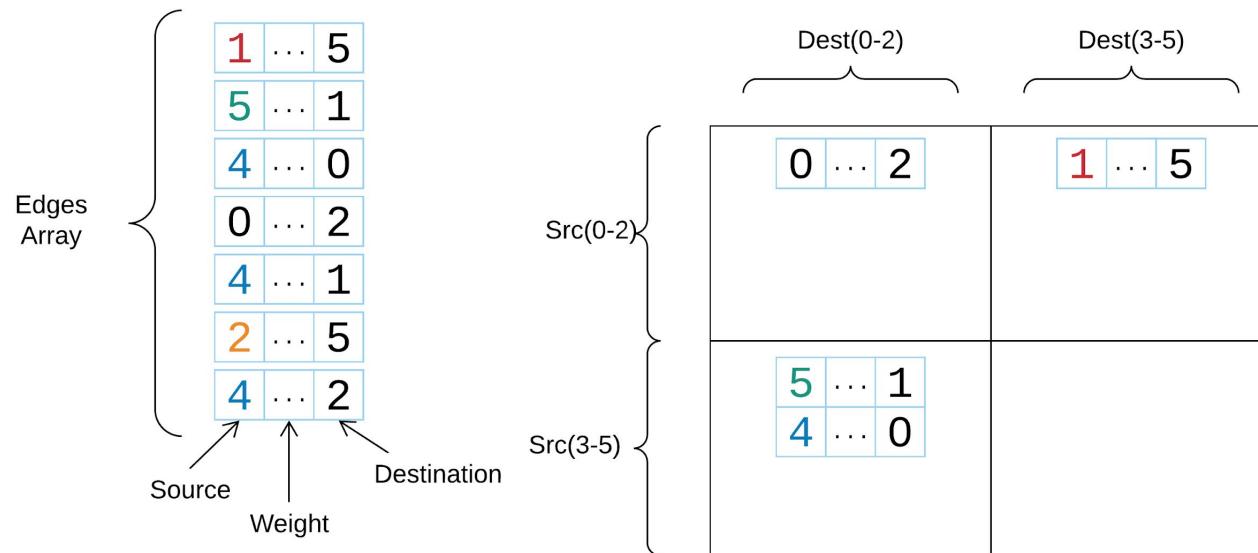
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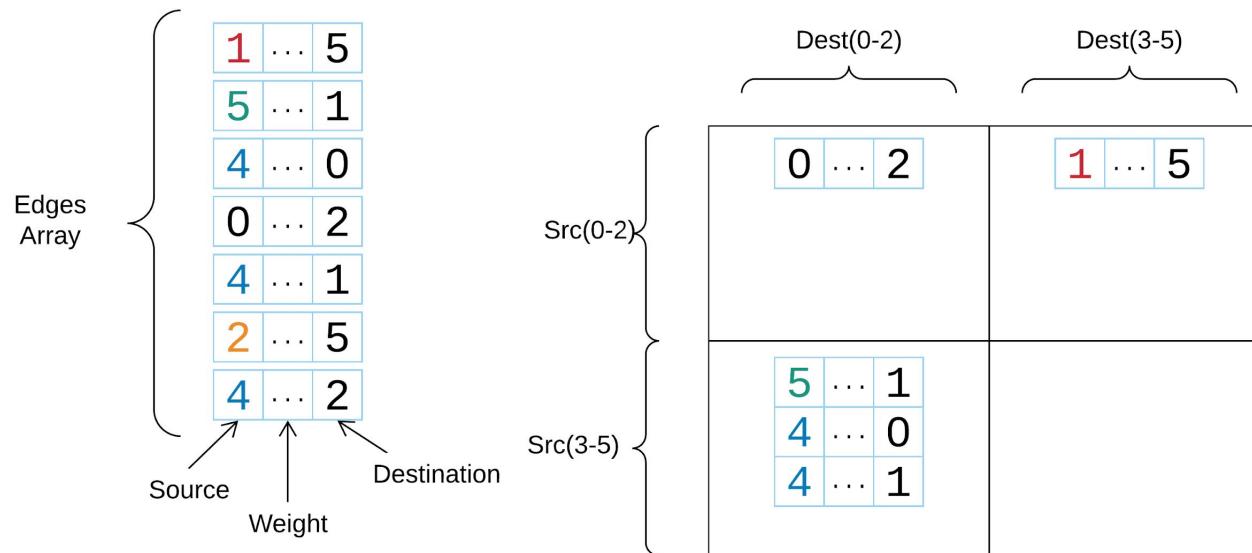
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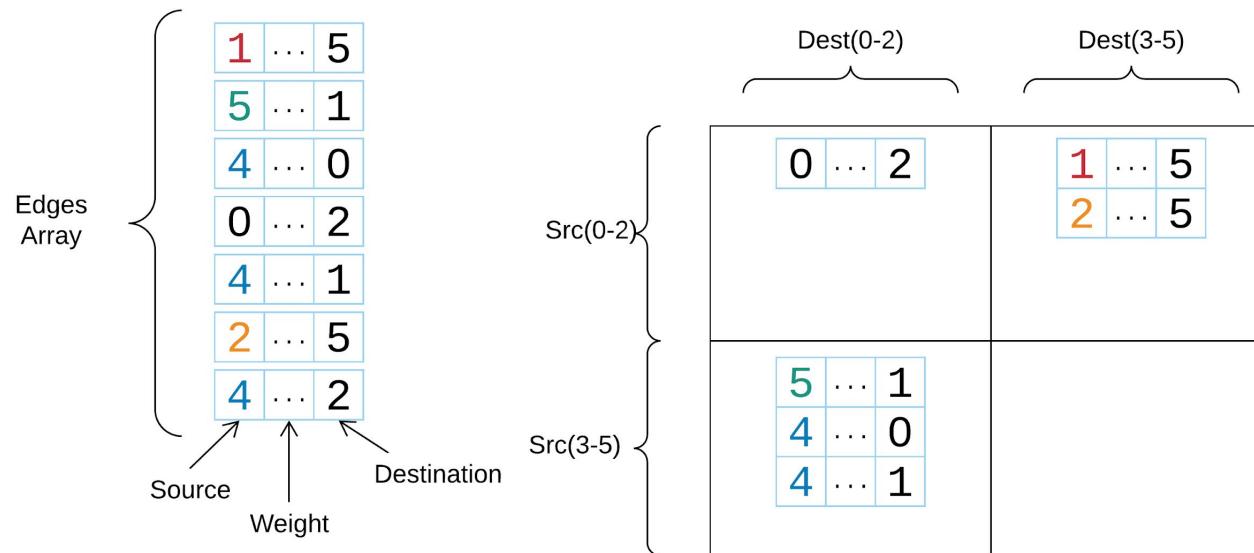
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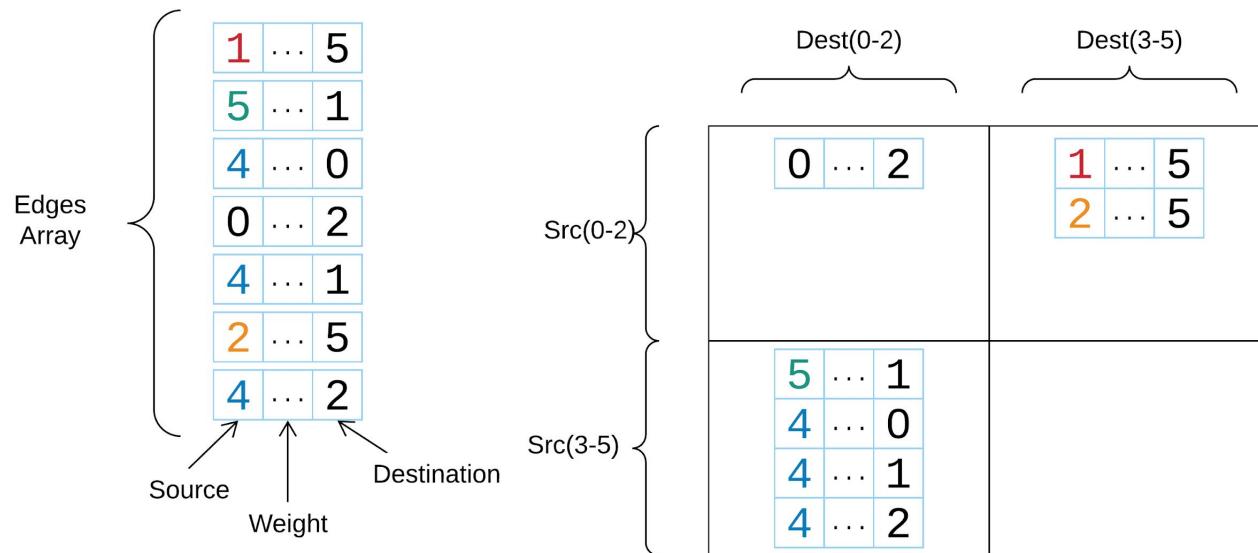
Grid



Grid



Grid





Thank You