GCN 실습
(Graph Convolution Network)

https://www.youtube.com/watch?v=qMZPMw27VB8&feature=youtu.be

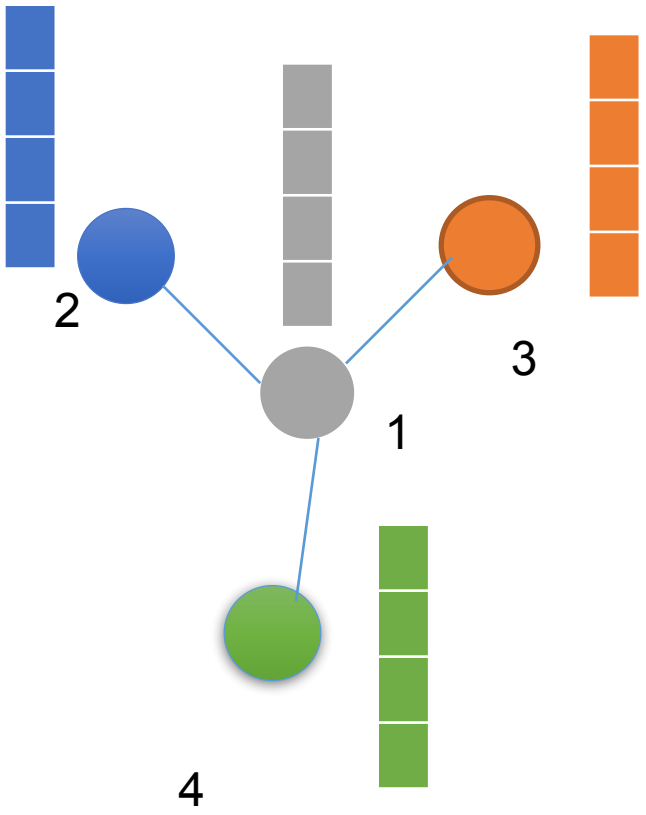
GCN Preview

Advanced Techniques of GCN

GCN 코드

GCN Preview

- Graph



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

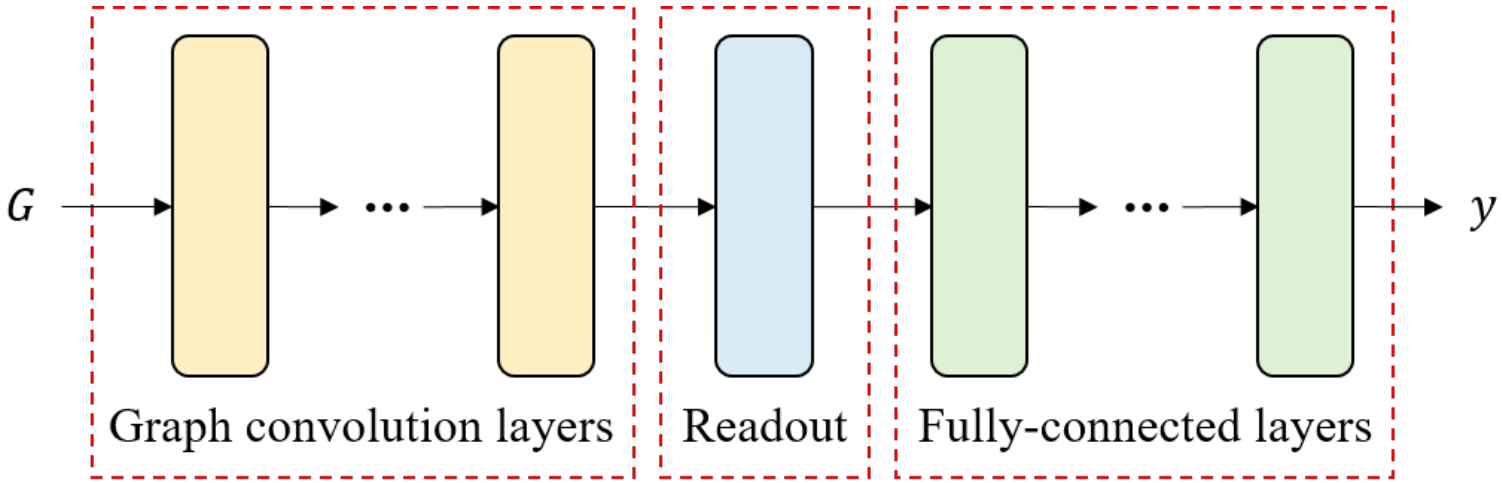
Adjacency Matrix

	1	2	…	10
1	1	1	…	0
2	1	1	…	1
3	0	0	…	1
4	1	0	…	1

Node Feature Matrix

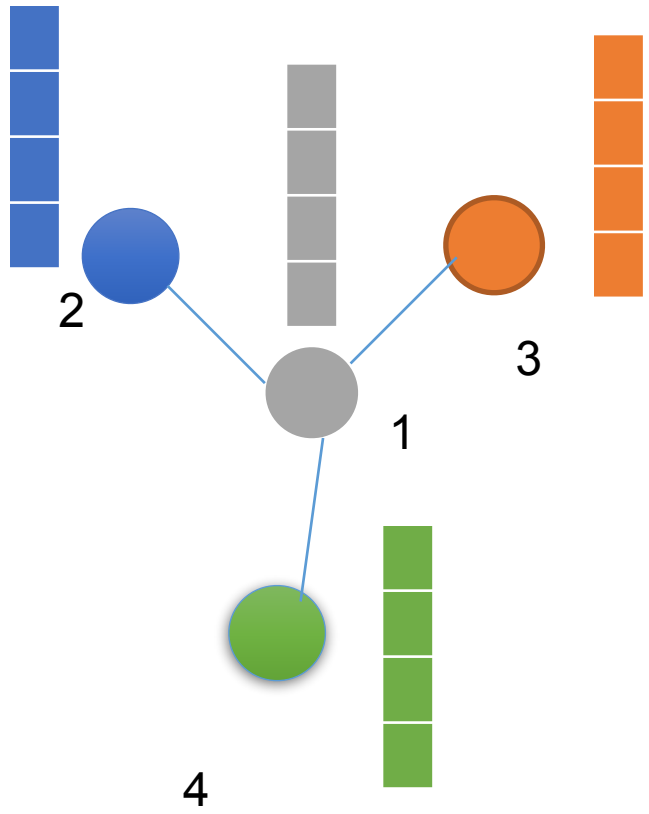
GCN Preview

- GCN Structure



GCN Preview

- Graph Convolution Layer

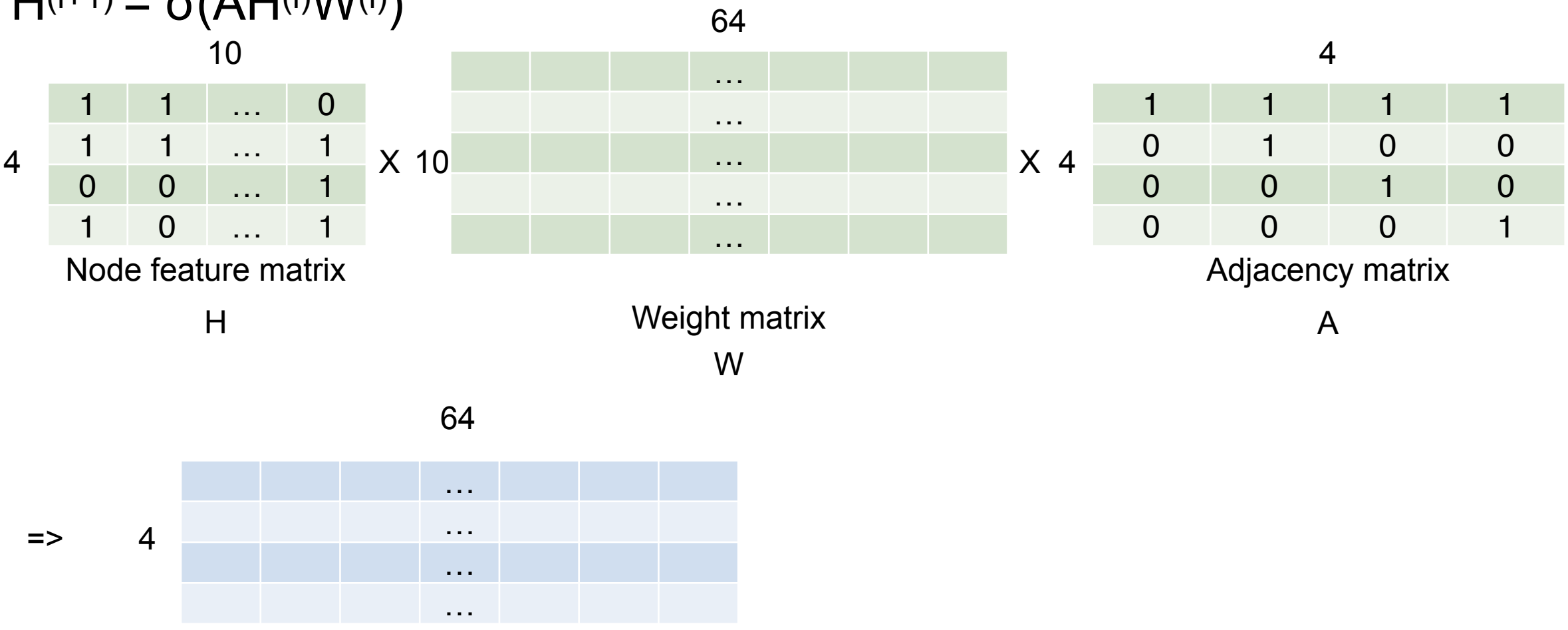


$$H_1^{(l+1)} = \sigma(H_2^{(l)}W^{(l)} + H_3^{(l)}W^{(l)} + H_4^{(l)}W^{(l)})$$

$$H^{(l+1)} = \sigma(AH^{(l)}W^{(l)})$$

GCN Preview

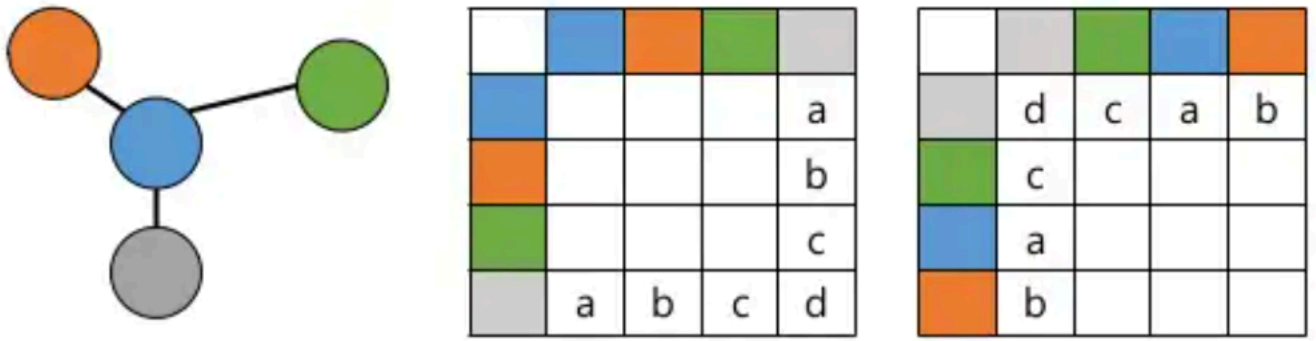
- $H^{(l+1)} = \sigma(AH^{(l)}W^{(l)})$



GCN Preview

- Readout

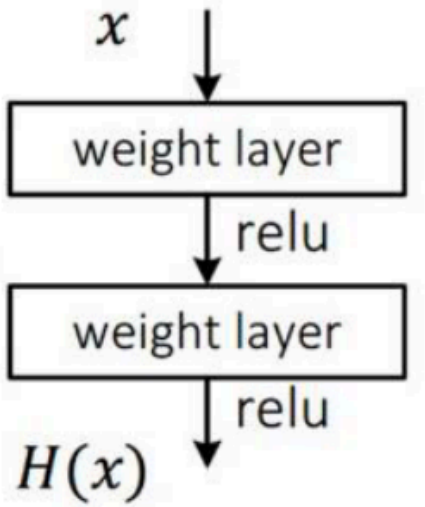
▪ Readout: Permutation Invariance



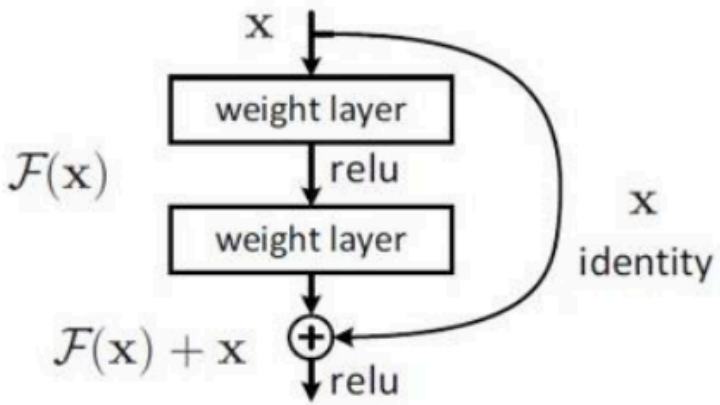
노드 순서에 따라 값의 변동이 있을 수 있다

Advance Techniques of GCN

- Skip Connection



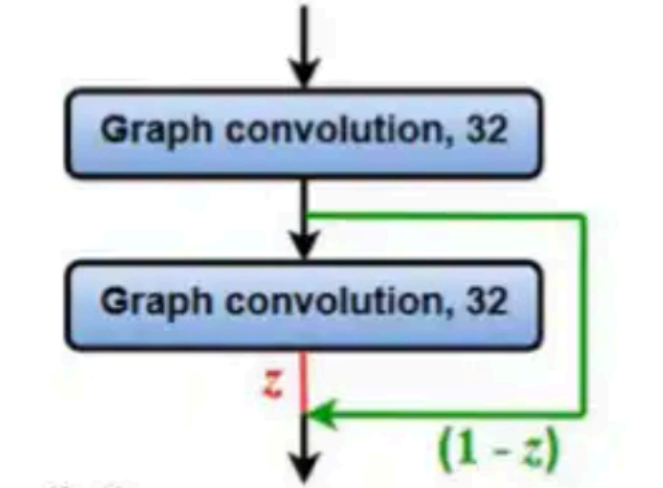
일반적인 구조



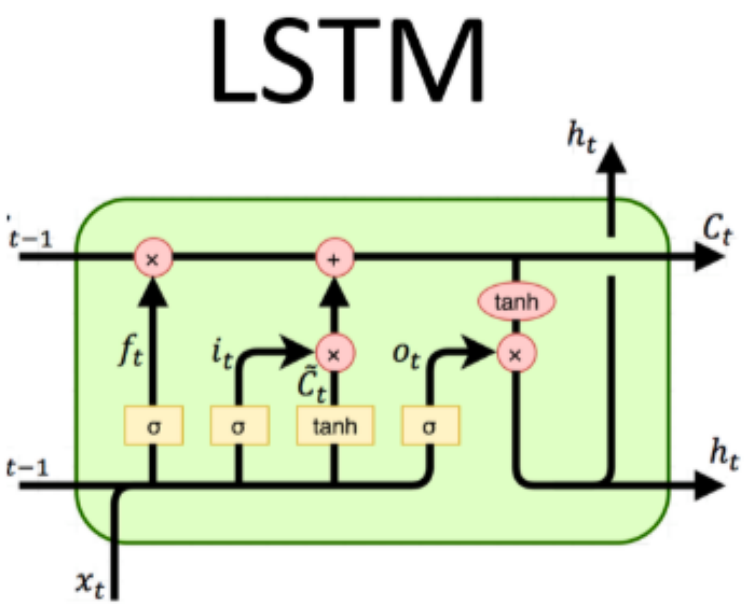
Residual 구조

Advance Techniques of GCN

- Gated Skip Connection



$$H_{i,gsc}^{(l+1)} = z_i \odot H_i^{(l+1)} + (1 - z_i) \odot H_i^{(l)}$$



Q & A