

➤ Motivation

- Graph compression has redundant components for designed subgraph matching

➤ Methodology

- Collapse nodes with the same labels and ranks into equivalence classes. Shown as Fig. (a) and (b).
- According to query graphs, further partition the nodes into different blocks for subgraph matching. In Fig. (c), ASSG will not change while matching Q1, but ASSG will change to the structure shown in Fig. (d) while matching Q2.

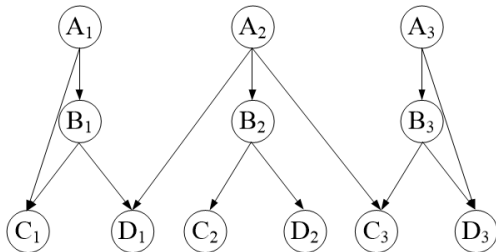
➤ Experiment Results

- ASSG gets lower compression ratio.

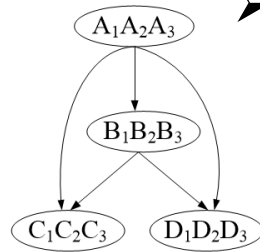
Data Set	$ G < V , E , L >$	G_r	ASSG (15%)
California	60K<24K, 32K, 95>	49.22%	33.25%
Internet	530K<96K, 421K, 50>	42.41%	17.08%
Citation	1.7M<815K, 806K, 67>	31.71%	5.83%
Synthetic	2.6M<1.4M, 2.1M, 60>	26.9%	3.73%

- ASSG can be efficiently updated by query graphs.

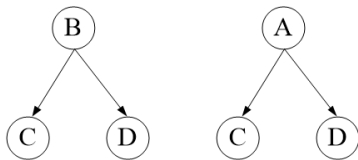
Data Set	0 repeated label	1 repeated label	2 repeated labels	5 repeated labels
California	8.95	2.96	2.79	2.73
Internet	28.64	25.42	21.29	9.9
Citation	55.49	53.7	47.1	6.35
Synthetic	113.47	101.32	91.24	33.73



(a) Graph data G



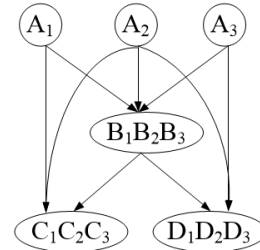
(b) ASSG



Q1

Q2

(c) Query graphs



(d) ASSG'