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List of Abbreviations/Symbols

Notation	Definition
$agg(T_{id})$	Aggregating all T_{id}'s using '+' in Project Queries in Relational Database
$agg(P_i)$	Aggregating all P_i's using '+' in Join Queries in Relational Database
$agg(T_{id})$	Aggregating all T_{id}'s using '$\otimes$' in Aggregate Queries in Relational Database
G_Q	Query Graph
G_P	Provenance Graph
F_{rl}	Twitter User's Friends List
F_{ol}	Twitter User's Followers List
F_{rld}	Twitter User's Friend Detail
F_{old}	Twitter User's Follower Detail
A_t	Access Token for Streaming Real-Life Twitter Data
A_{ts}	Access Token Secret for Streaming Real-Life Twitter Data
C_k	Consumer Key for Streaming Real-Life Twitter Data
C_{sk}	Consumer Secret Key for Streaming Real-Life Twitter Data
CV_o	Old Column Value before Update in Key-Value pair Database
CV_{owt}	Writetime of Old Column Value before Update in Key-Value pair Database
p_i	Provenance Path Expression of Non Key Column C_i in result tuple r of Select Query in Key-Value Pair Database
P	Comma Separated list of all p_i of C_i's in result tuple r of Select Query in Key-Value Pair Database
$pv[i]$	pv is a vector of Provenance Path Expressions of all C_i's in result tuple r of Aggregate Query where $pv[i]$ is Comma Separated List of all Provenance Path Expressions of C_i in Key-Value Pair Database