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descriptive metadata specification

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Owner	yi6604 (10640)
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Let $L = \cup Dk$ be a set of literals defined as the union of domains Dk of simple datatypes (e.g., strings, numbers, dates, etc.). Let also R and P represent sets of labels for resources and properties respectively. A descriptive metadata specification is a structure $(G, R \cup L \cup P, F)$, where: (1) $F : (V \cup E) \rightarrow (R \cup L \cup P)$ can assign general labels $R \cup P$ and literals from L to nodes of the graph structure; (2) for each directed edge $e = (vi, vj)$ of G , $F(vi) \in R \cup L$, $F(vj) \in R \cup L$ and $F(e) \in P$; (3) $F(vk) \in L$ if and only if node vk has outdegree 0.