Compact Answers to Temporal Regular Path Queries (Supplementary Material)

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1 INDUCTIVE REPRESENTATION

1.1 $(\!|q|\!)_G^{[t,d],b,e}$

1.1.1 *Definition.*

1.1.2 *Correctness.*

$\mathsf{path}_1/\mathsf{path}_2$**.** Let $\mathbf{u}_1 = \langle o_1, o_2, \tau_1, \delta_1 \rangle$ and $\mathbf{u}_2 = \langle o_3, o_4, \tau_2, \delta_2 \rangle$, with $o_2 = o_3$.

For each $i \in \{1, 2\}$ and $t \in \tau_i$, we use $\delta_i(t)$ for the interval

$$_{\delta_i}\lfloor\ b_{\delta_i} + \max(0, b_i - t)\ ,\ e_{\delta_i} - \max(0, t - e_i)\ \rfloor_{\delta_i}$$

And similarly to what we did for $\mathcal{U}^{[t,d]}$, we use R_i for be the binary relation over $\mathcal{T}$ specified by the time points and distances in $\mathbf{u}_i$, i.e. $R_i = \{(t, t + d) \mid t \in \tau_i, d \in \delta_i(t)\}$.

2 FINITENESS

3 COMPLEXITY OF QUERY ANSWERING

4 MINIMIZATION

5 SIZE OF COMPACT ANSWERS