T1-tsa-ra.docx

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Unit Code: FIT3171
Applied Class No: 1

Comments for your marker:

Write the **relational algebra operations** for each of Task 1 queries below (your answer must show an *understanding of query efficiency*).

List of symbols for copying/pasting as you enter your answers below:
project: π, select: σ, join: ⋈, intersect: ∩, union: ∪, minus: -

1(a)

$R = ((\pi_{town\_id}\ TOWN) - (\pi_{town\_id}\ POINT\_OF\_INTEREST)) \bowtie (\pi_{town\_id,\ town\_name,\ town\_state}\ TOWN)$

1(b)

$R1 = \pi_{poi\_type\_id}\ (\sigma_{poi\_type\_descr = \text{'Nature and Wildlife'}}\ POI\_TYPE)$

$R2 = \pi_{poi\_id,\ poi\_name,\ poi\_street\_address,\ poi\_description}\ (\sigma_{poi\_type\_id = R1}\ POINT\_OF\_INTEREST)$

$R3 = \pi_{poi\_id,\ poi\_name,\ poi\_street\_address,\ poi\_description}\ (\sigma_{poi\_review\_rating > 3}\ POINT\_OF\_INTEREST)$

$R = R2 \cap R3$

1(c)

$R1 = \pi_{town\_id}\ (\sigma_{town\_lat = -17.9644}\ TOWN) \cap \pi_{town\_id}\ (\sigma_{town\_long = 122.2304} TOWN)$

$R2 = \pi_{poi\_id,\ poi\_name}\ (\sigma_{town\_id = R1}\ POINT\_OF\_INTEREST)$

$R3 = R2 \bowtie \pi_{poi\_id,\ review\_date\_time.\ review\_rating,\ review\_comment,\ member\_id}\ REVIEW$

$R = R3 \bowtie \pi_{member\_id,\ member\_gname}\ MEMBER$