T1-tsa-ra.docx

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Unit Code: FIT2094
Applied Class No: 3

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

1(b)
$R1 = ((\pi_{poi\_id,\ poi\_type\_id}\ POINT\_OF\_INTEREST) \bowtie (\pi_{poi\_type\_id}\ (\sigma_{poi\_type\_descr = \text{'Nature and Wildlife'}}\ POI\_TYPE)))$
$R2 = ((\pi_{poi\_id}\ POINT\_OF\_INTEREST) \bowtie (\pi_{poi\_id}\ (\sigma_{review\_rating > 3}\ REVIEW)))$
$R = \pi_{poi\_id,\ poi\_name,\ poi\_street\_address,\ poi\_description}\ POINT\_OF\_INTEREST \bowtie (R1 \cap R2)$

1(c)
$R1 = (\pi_{poi\_id,\ poi\_name,\ town\_id}\ POINT\_OF\_INTEREST) \bowtie (\pi_{town\_id}\ (\sigma_{town\_name = \text{'Broome'}\ \text{and}\ town\_lat = -17.9644\ \text{and}\ town\_long = 122.2304}))$
$R2 = (\pi_{member\_id,\ member\_gname}\ MEMBER) \bowtie (\pi_{member\_id,\ review\_date\_time,\ review\_rating,\ review\_comment,\ poi\_id}\ REVIEW)$
$R = \pi_{poi\_id,\ poi\_name,\ member\_id,\ member\_gname,\ review\_date\_time,\ review\_rating,\ review\_comment}\ (R1 \bowtie R2)$