

T1-tsa-ra.docx

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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:  $\pi$ , select:  $\sigma$ , join:  $\bowtie$ , intersect:  $\cap$ , union:  $\cup$ , minus:  $-$

1(a)

$R = \pi_{\text{town\_id}, \text{town\_name}, \text{town\_state}} \text{TOWN} - \pi_{\text{town\_id}} \text{TOWN} \bowtie \text{Point\_of\_Interest}$

1(b)

$R = \pi_{\text{poi\_id}, \text{poi\_name}, \text{poi\_street\_address}, \text{poi\_descr}} (\sigma_{\text{poi\_type\_descr} = \text{"Nature and Wildlife"}} \cap_{\text{poi\_review\_rating} > 3} (\text{Point\_of\_Interest} \bowtie \text{Poi\_type}))$

1(c)

$R1 = \sigma_{\text{town\_lat} = -17.9644 \cap \text{town\_long} = 122.2304 \cap \text{town\_name} = \text{"Broome"}} (\text{Point\_of\_Interest} \bowtie \text{Town} \bowtie \text{Review} \bowtie \text{Customer})$

$R = \pi_{\text{member\_id}, \text{member\_gname}, \text{poi\_id}, \text{poi\_name}, \text{review\_date\_time}, \text{review\_rating}, \text{review\_comment}} R1$