L1 PLF

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1 Problem

a.Transform a list in a set.
b. Determine the union of two sets. The sets are represented as lists.

2 Mathematical model

2.1 a

$$found(e, l1, l2, ..., ln) = \begin{cases} 0 & \text{if list is empty} \\ found(e, l2, l3, ..., ln) & \text{if } e \neq l1 \\ 1 & \text{if } e = l1 \end{cases}$$

$$f1(l1, l2, ..., ln) = \begin{cases} [] & \text{if list is empty} \\ l1 \cup f(l2, l3, .., ln) & \text{if } g(l1, l2, l3, ..., ln)) = 0 \\ f(l2, l3, ..., ln) & \text{if } g(l1, l2, l3, ..., ln)) = 1 \end{cases}$$

2.2 b

$$f2(s1, s2, ..sn, S1, S2, .., Sm) = \begin{cases} [] & \text{if s and S are empty} \\ S & \text{if s is empty} \\ s1 \cup f(s2, s3, .., sn, S1, S2, .., Sm) & \text{if } g(s1, S1, S2, ..., Sn) = 0 \\ f(s2, s3, .., sn, S1, S2, .., Sm) & \text{if } g(s1, S1, S2, ..., Sn) = 1 \end{cases}$$