CPSC 433: Lab Exercise
Or-Tree-Based Search

Assume we are going to write a program to solve a puzzle by an or-tree-based search algorithm. The puzzle is as follows:
Given a string of digits, we are to re-arrange the digits such that any run of three digits will add up to 9. Thus, given the string "22344", a solution is "24324" (2+4+3=9, 4+3+2=9, 3+2+4=9).

Design an or-tree-based model (A=(S,T)) by defining the types <u>and</u> definitions of S, and T, together with any auxiliary definitions as are used in search paradigm. (Your answers may be in text; they do not necessarily have to be in formal notation, although full marks will only be given if the answer includes formal definitions.)

Define your search process P=(A, Env, K) by defining the types <u>and</u> definitions of Env, and K, together with any auxiliary definitions as are used in search paradigm.

Define G, your goal state. Draw the tree that your search process generates for s_0=("2234",?).