NFA TO DFA CONVERSION

The assignment given was to convert a given nfa to the corresponding dfa.

Explanation of code

1. First open the input.json file and use it as python dictionary (nfa_dict).
2. Declare a dfa dictionary.
3. The states of the dictionary will be 2**(states of nfa),the symbols will remain the same,the start state will also remain the same.
4. For finding the final states of the dfa, bitmask has been used. If any of the bit(representing the final state in nfa) is set than that will be included in the final state.
5. Then comes the most tricky part of this conversion, The transition function.
6. For this dfa_prime is used to store for each state on a given input symbol the states to which the transition happens in the dfa(a set is maintained).
7. Now this set for each of the state and symbol has to be converted to the corresponding state.
8. This state is obtained by converting the bitset of the state to the integer value by multiplying the corresponding power of 2 and adding all of them.
9. Example - 1001 means that state 0,3 are present in the set, and then it is converted to 9(corresponding state in the dfa).
10. t_func_list is used to store the transition in the dfa.
11. Finally the transition function of the dfa is also constructed which is assigned to the t_func key of the dfa.
12. Next we dump the dfa dictionary to the output.json file.This results in the the output being copied to the output.json file.