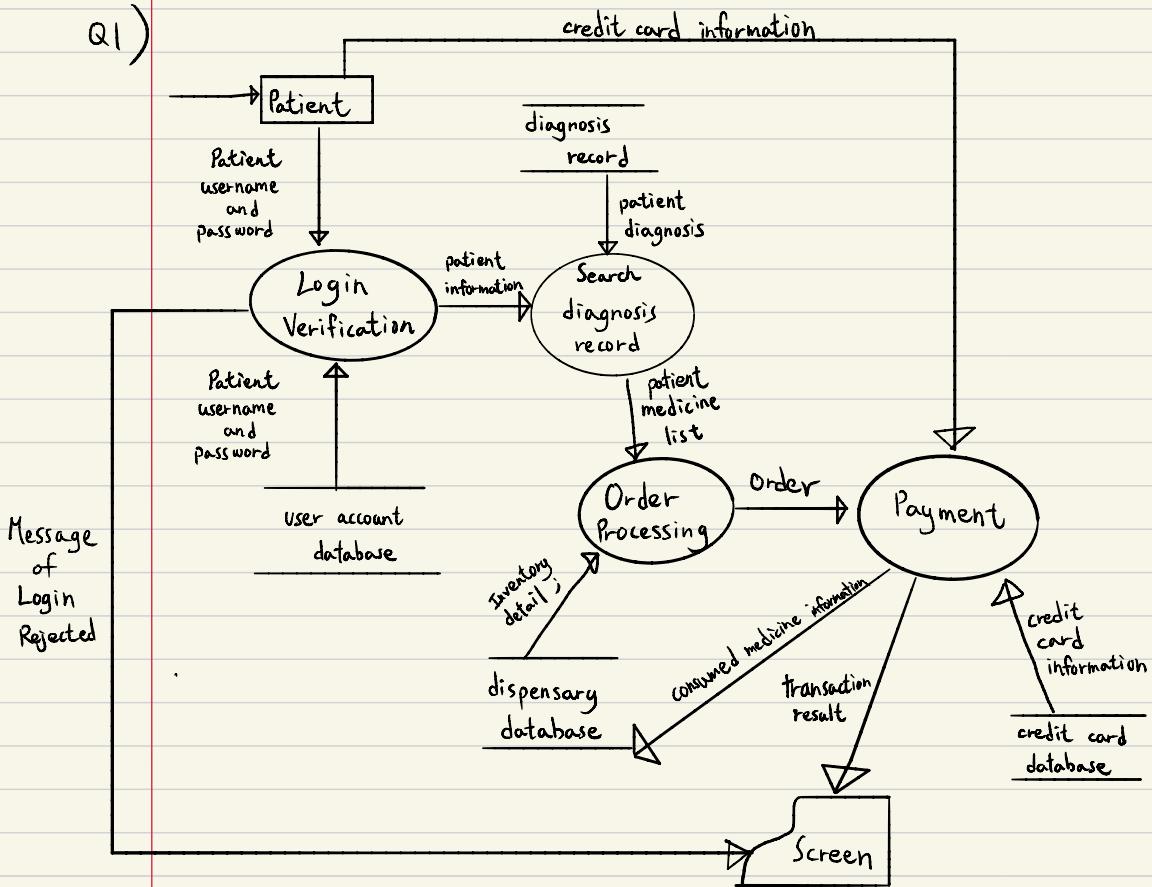
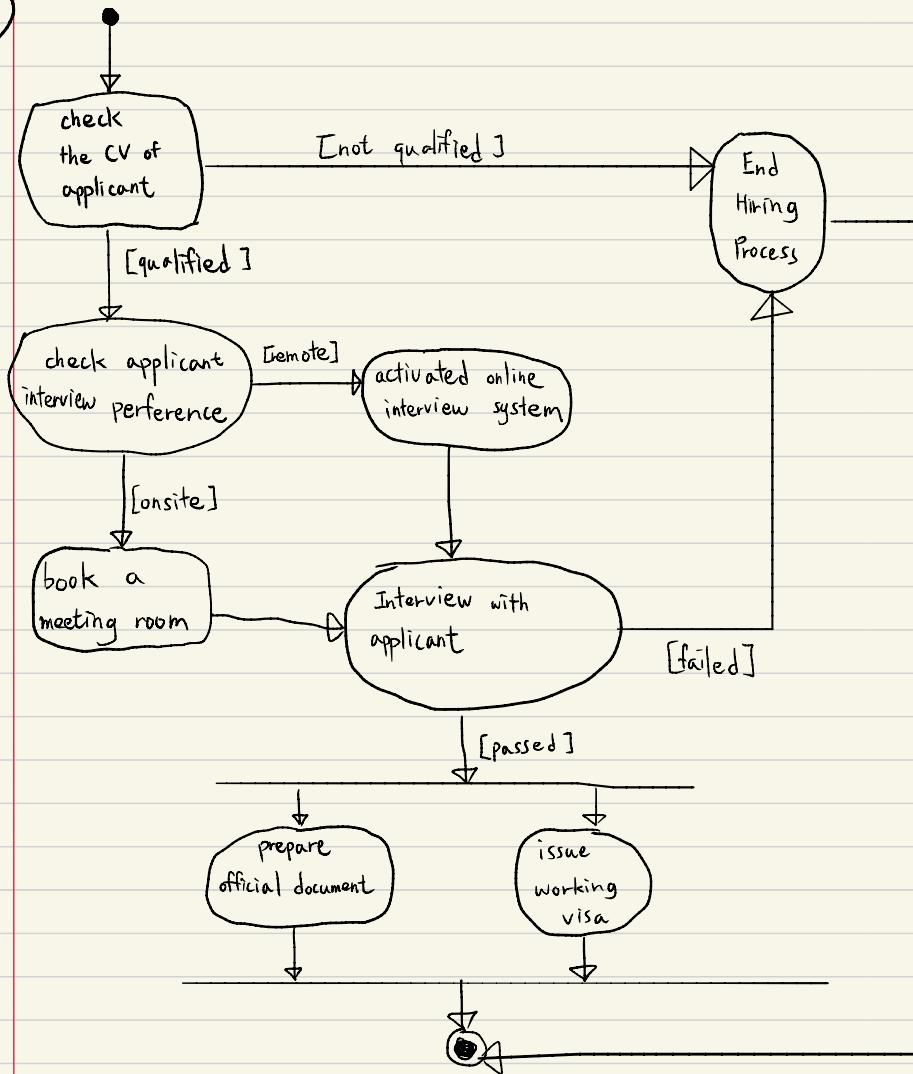


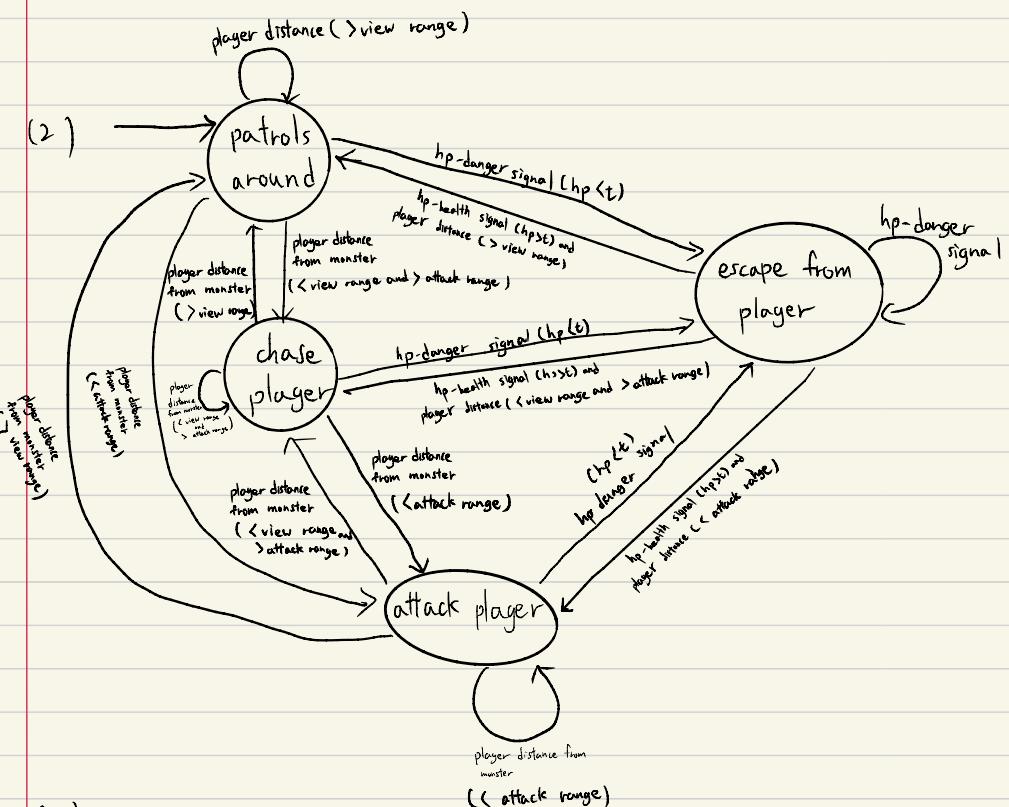
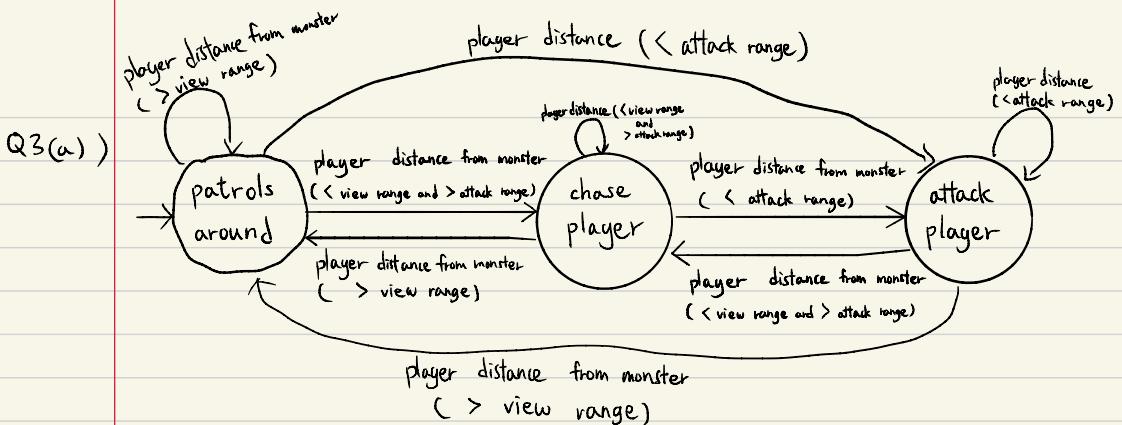
HW2 Ng Chi Hon, C1155116317

Q1)



(Q2)



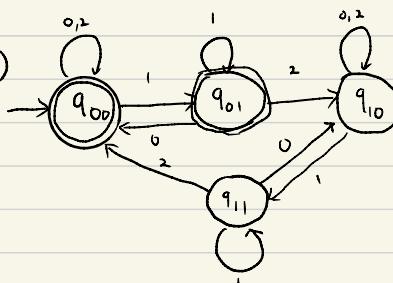


(3) Advantage: For each action add into AI, FSM only add one state to define action

It is simple to define action of AI and easy to know the action of AI in each state,

Disadvantage: If we need to connect each state together to enhance the smart of AI, we need to add too many input arrow and input information. If AI action state increase, FSM diagram will become too complicate.

Q4 (1)



There are 4 state in this FSA,

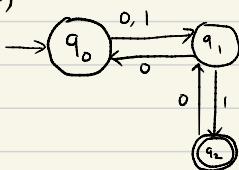
State  $q_{00}$  represent pattern "12" contain even number times and ended with "0" or "2".

State  $q_{01}$  represent pattern "12" contain even number times and ended with "1"

State  $q_{10}$  represent pattern "12" contain odd number times and ended with "0" or "2"

State  $q_{11}$  represent pattern "12" contain odd number times and ended with "1",

(2)(a)

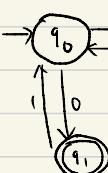


State  $q_0$  represent string do not ended with "1" and contain even number of digit

State  $q_1$  represent string contain odd number digit

State  $q_2$  represent string contain even number digit and ended with "1"

(b)



State  $q_0$  represent string contain even number digit

State  $q_1$  represent string contain odd number digit and ended with "1"

State  $q_2$  represent string contain odd number digit and ended with "0"