

ESPECIFICACION LTL

Luz fsm

ltl spec1{

 [](presencia_luz -> <>(luz_state==ON))}

ltl spec2{

 []((boton && (luz_state==OFF)) -> <>(luz_state==ON))}

ltl spec3{

 []((boton && (luz_state==ON)) -> <>(luz_state==OFF))}

ltl spec4{

 []((luz_state==ON) && ([](!presencia_luz)) -> <>(luz_state==OFF))}

Alarma fsm

ltl spec5{

 []((code_ok && (alarma_state==ALARMA_APAGADA)) ->
 <>(alarma_state==ALARMA_ENCENDIDA))}

ltl spec6{

 [](((presencia_sirena && ([](!code_ok))) && (alarma_state==ALARMA_ENCENDIDA)) ->
 <>(sirena==1))}

ltl spec7{

 []((code_ok && (alarma_state==ALARMA_ENCENDIDA)) -> <>(sirena==0))}

ltl spec8{

 [](((code_ok && (alarma_state==ALARMA_ENCENDIDA)) ->
 <>(alarma_state==ALARMA_APAGADA))}

Code fsm

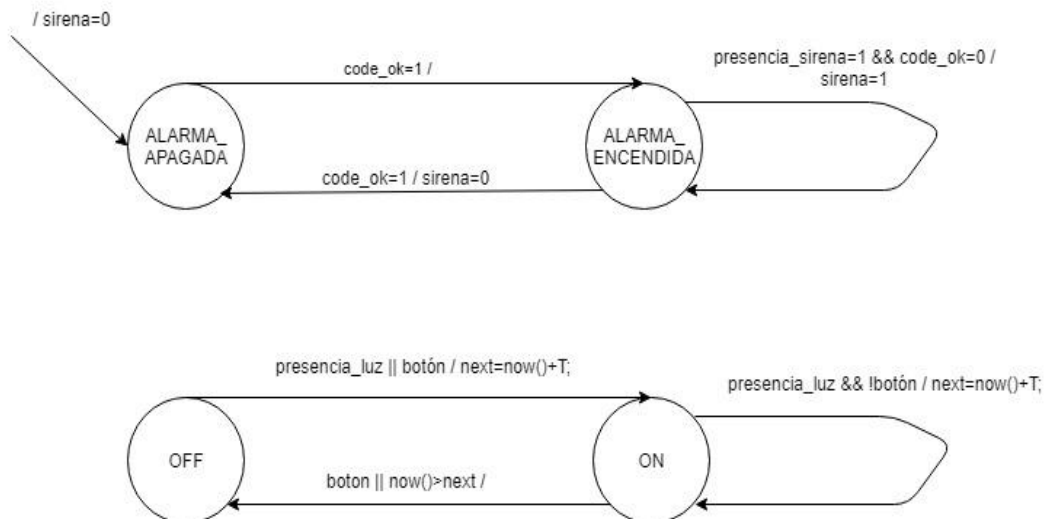
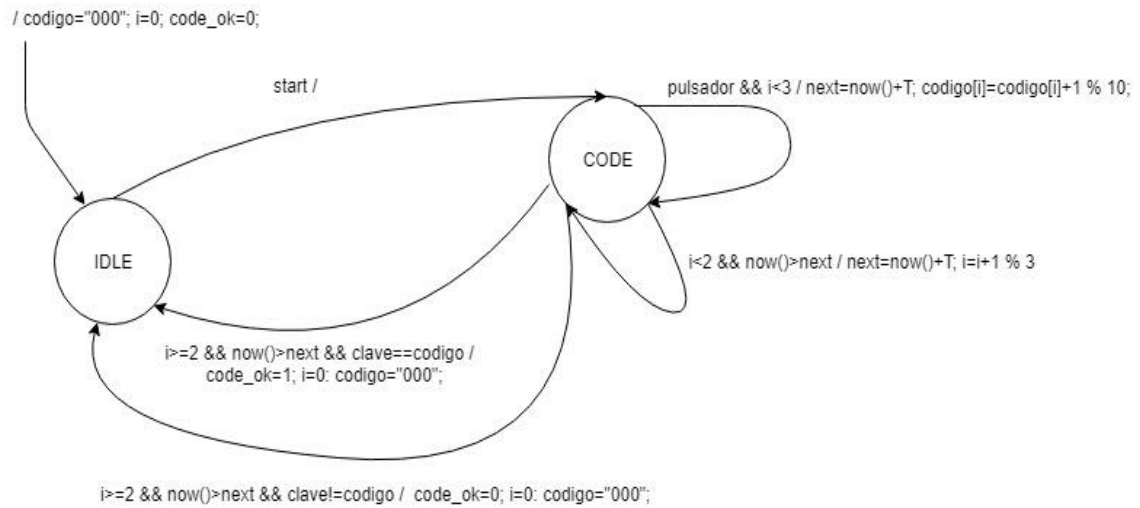
ltl spec9 {

 [] (((clave[0]==codigo[0]) && (clave[1]==codigo[1]) && (clave[2]==codigo[2])) && (i>2) &&
 (deadline)) -> <>(code_ok == 1))}

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ltl spec10{
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  [] (((!(clave[0]!=codigo[0]) || !(clave[1]!=codigo[1]) || !(clave[2]!=codigo[2])) && (i>2) &&
  (deadline)) -> <>(code_ok == 0))}
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Modelo del sistema



Analisis de tiempos

	C	T	D
FSM_LUZ	540useg	1seg	1seg
FSM_ALARMA	720useg	1seg	1seg
FSM_CODE	640useg	1seg	1seg

Al haber escogido un periodo tan alto, el tiempo de ejecución no es un problema en ninguno de los tres casos.