

Assignment 1 – CST8244- State Machine
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DES - STATES

State	Mapping
ST_START	0
ST_LS	1
ST_RS	2
ST_WS	3
ST_LO	4
ST_RO	5
ST_LC	6
ST_RC	7
ST_GRL	8
ST_GRU	9
ST_GLL	10
ST_GLU	11
ST_EXIT	12

DES - Inputs

input	Mapping	Value	Data
IN_LS	0	ls	Person.id
IN_RS	1	rs	Person.id
IN_WS	2	ws	Person.weight
IN_LO	3	lo	N/A
IN_RO	4	ro	N/A
IN_LC	5	lc	N/A
IN_RC	6	rc	N/A
IN_GRL	7	grl	N/A
IN_GRU	8	gru	N/A
IN_GLL	9	gll	N/A
IN_GLU	10	glu	N/A
IN_EXIT	11	exit	N/A

DES – Outputs

Outputs	Mapping	Message	Data
OUT_START	0	Controller PID:	Getpid()
OUT_LS_RS	2	Person scanned ID. ID=	Person.id
OUT_WS	3	Person weighed. Weight =	Person.weight
OUT_LO	4	Left door Open	
OUT_RO	5	Right door Open	
OUT_LC	6	Left door closed	
OUT_RC	7	Right door closed	
OUT_GRL	8	Right door locked by Guard	
OUT_GRU	9	Right door unlocked by Guard	
OUT_GLL	10	Left door locked by Guard	
OUT_GLU	11	Left door unlocked by Guard	
OUT_EXIT	12	Exiting Door Entry System	

DES – Conditions – NOTE : View DES-Input table to see the value of input in conditions

Current State	Condition	Next State	Description(Next State)
ST_START	./des_input running	ST_GRL	DEFAULT: Idle state
ST_GRL(IDLE)	person.state = ST_LS && Irstate = DEFAULT	ST_LS	Left Scan
	person.state = ST_RS	ST_RS	Right Scan
ST_LS	person.state = ST_GLU	ST_GLU	Guard Left Unlock
ST_RS	person.state = ST_GRU	ST_GRU	Guard Right Unlock
ST_GLU	Person.state = ST_LO	ST_LO	Left Open
ST_GRU	Person.state = ST_RO	ST_RO	Right Open
ST_LO	Person.state = ST_WS	ST_WS	Weigh Scale
	Person.state = ST_LC	ST_LC	Left Close
ST_RO	Person.state = ST_WS	ST_WS	Weigh Scale

	Person.state = ST_RC	ST_RC	Right Close
ST_WS	Person.state = ST_RC	ST_RC	Right close
	Person.state = ST_LC	ST_LC	Left close
ST_RC	Person.state = ST_GRL	ST_GRL	Guard Right lock
ST_LC	Person.state = ST_GLL	ST_GLL	Guard Left Lock
ST_GRL	Person.state = ST_GLU && lstate = RIGHT	ST_GLU	Guard left unlock
IDLE (Return to top of table GRL)	Person.state = RS && lstate = DEFAULT	ST_RS	Right Scan
IDLE (return to top of table GRL)	Person.state = LS && lstate = DEFAULT	ST_LS	Left Scane
ST_GLL	Person.state = ST_GRU && lstate = LEFT	ST_GRU	Guard right unlock
ST_GLL(IDLE)	Person.state = RS && lstate = DEFAULT	ST_RS	Right Scan
ST_GLL(IDLE)	Person.state = LS && lstate = DEFAULT	ST_LS	Left Scan
ST_EXIT	Person.state = ST_EXIT	ST_EXIT	Exit (Termination)

State Machine Diagram:

