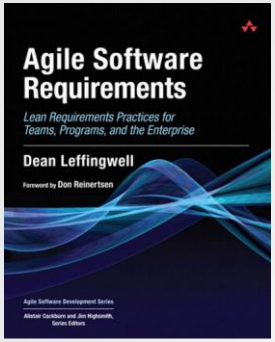


Agile Software Requirements

Software Requirements Engineering – 40688

Computer Engineering department

Sharif university of technology

Fall 402

Chapter 18:

Requirements analysis toolkit

Some tools

- Activity diagrams (flowcharts)
- Sample reports
- Pseudocode
- Decision tables and decision trees
- Finite state machines
- Message sequence diagrams
- Entity-relationship diagrams
- Use cases

Pseudocode (1)

```
Set SUM(i)=0
FOR each customer X
        IF customer purchased paid support
            AND((Current month)>=(2 months after ship date))
            AND((Current month)<=(14 months after ship date))
        THEN Sum(X)=Sum(X)+(amount customer paid)/12
END
```

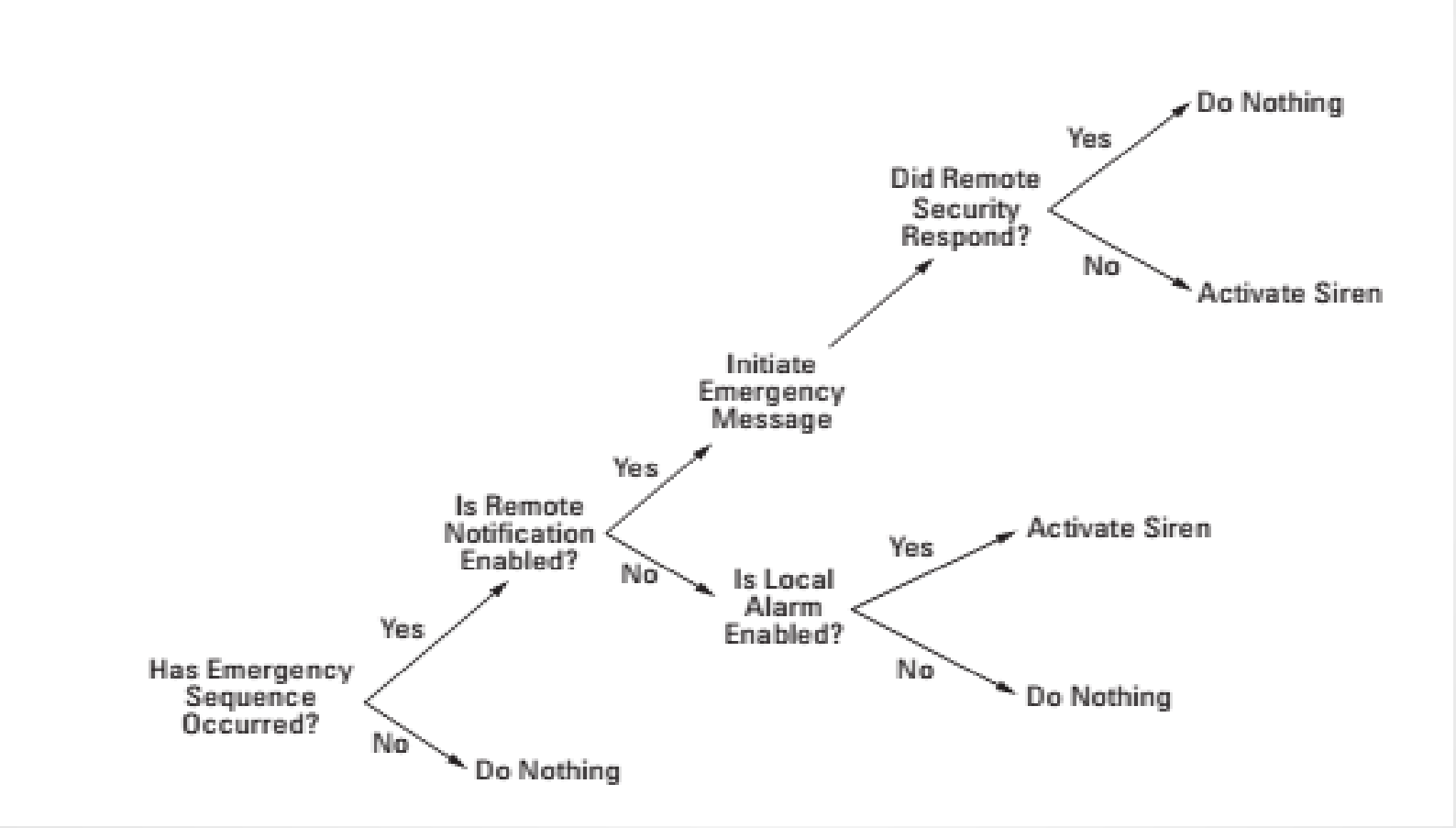
Pseudocode (2)

- Imperative sentences with a single verb and a single object.
- A limited set, typically not more than 40 to 50, of "action-oriented" verbs from which the sentences must be constructed.
- Decisions represented with a formal IF-ELSE-ENDIF structure.
- Iterative activities represented with DO-WHILE or FOR-NEXT structures.

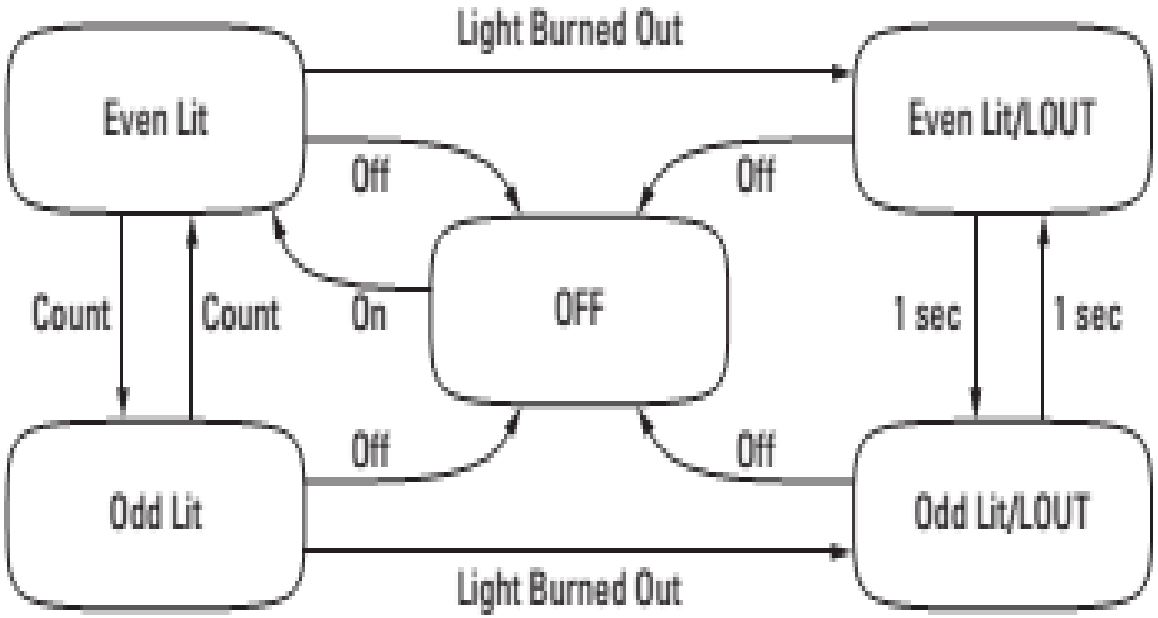
Decision Table

		Rules							
Conditions	Printer does not print.	Y	Y	Y	Y	N	N	N	N
	A red light is flashing.	Y	Y	N	N	Y	Y	N	N
	Printer is unrecognized.	Y	N	Y	N	Y	N	Y	N
Actions	Check the power cable.			X					
	Check the printer-computer cable.	X		X					
	Ensure printer software is installed.	X		X		X		X	
	Check/replace ink.	X	X			X	X		
	Check for paper jam.		X		X				

Example of a graphical decision tree



State Transition Diagram



State Transition Matrix

State	Event					Output
	On Press	Off Press	Count Press	Bulb Burns Out	Every Second	
Off	Even Lit	—	—	—	—	Both Off
Even Lit	—	Off	Odd Lit	LO/Even Lit	—	Even Lit
Odd Lit	—	Off	Even Lit	LO/Odd Lit	—	Odd Lit
Light Out/Even Lit	—	Off	—	Off	LO/Odd Lit	Even Lit
Light Out/Odd Lit	—	Off	—	Off	LO/Even Lit	Odd Lit

Entity-Relationship Diagrams