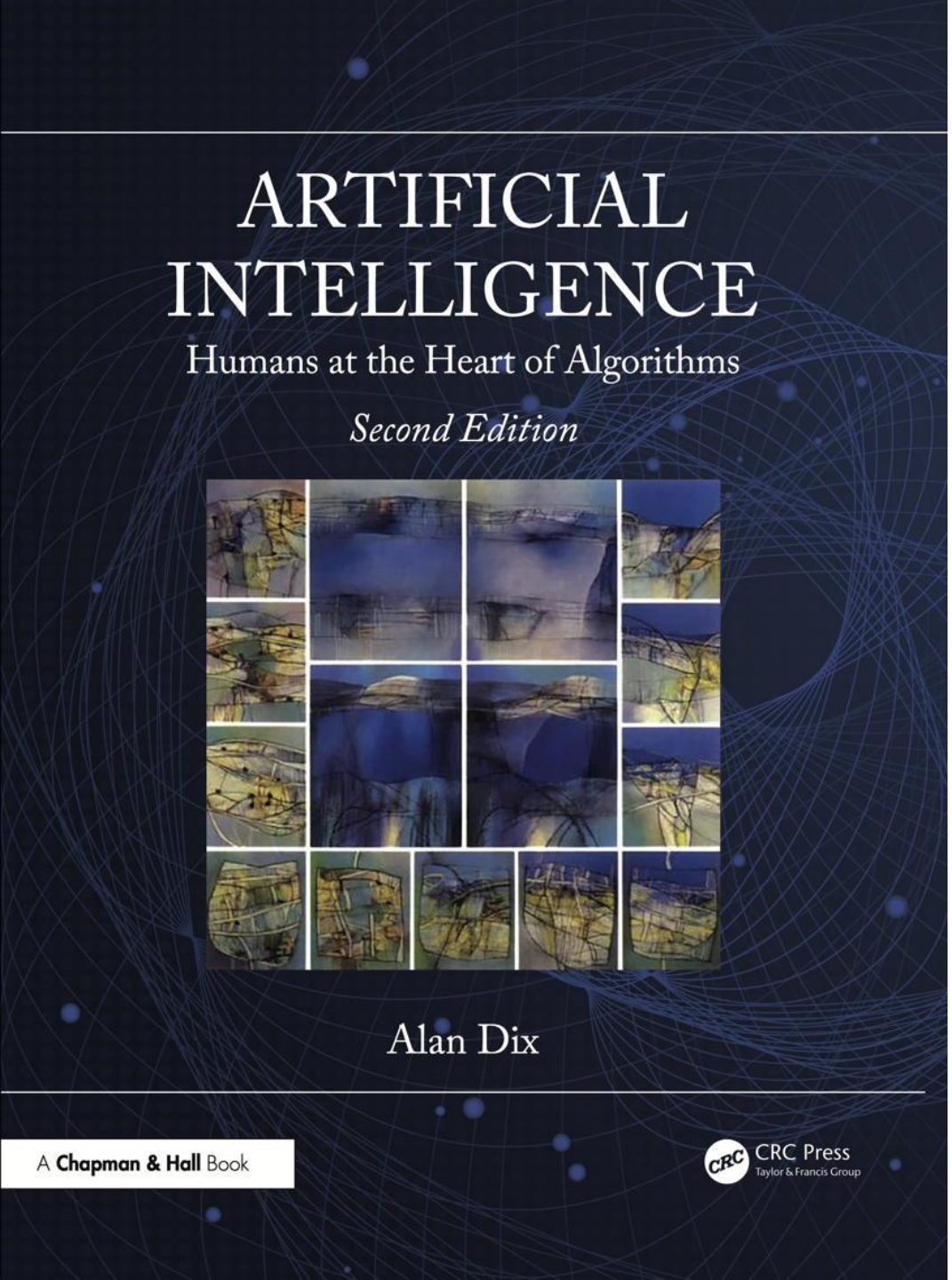


Chapter 2

Knowledge in AI

Four knights: how many moves?

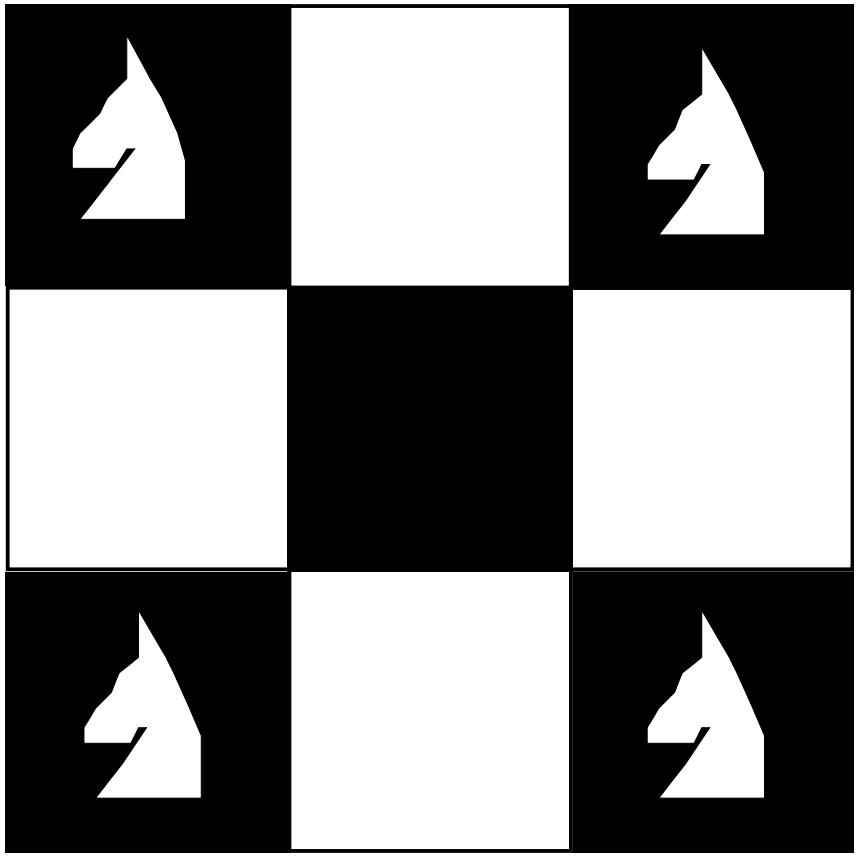
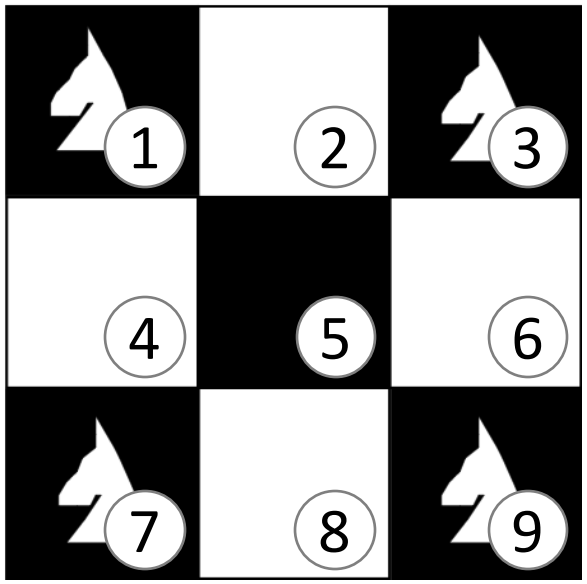
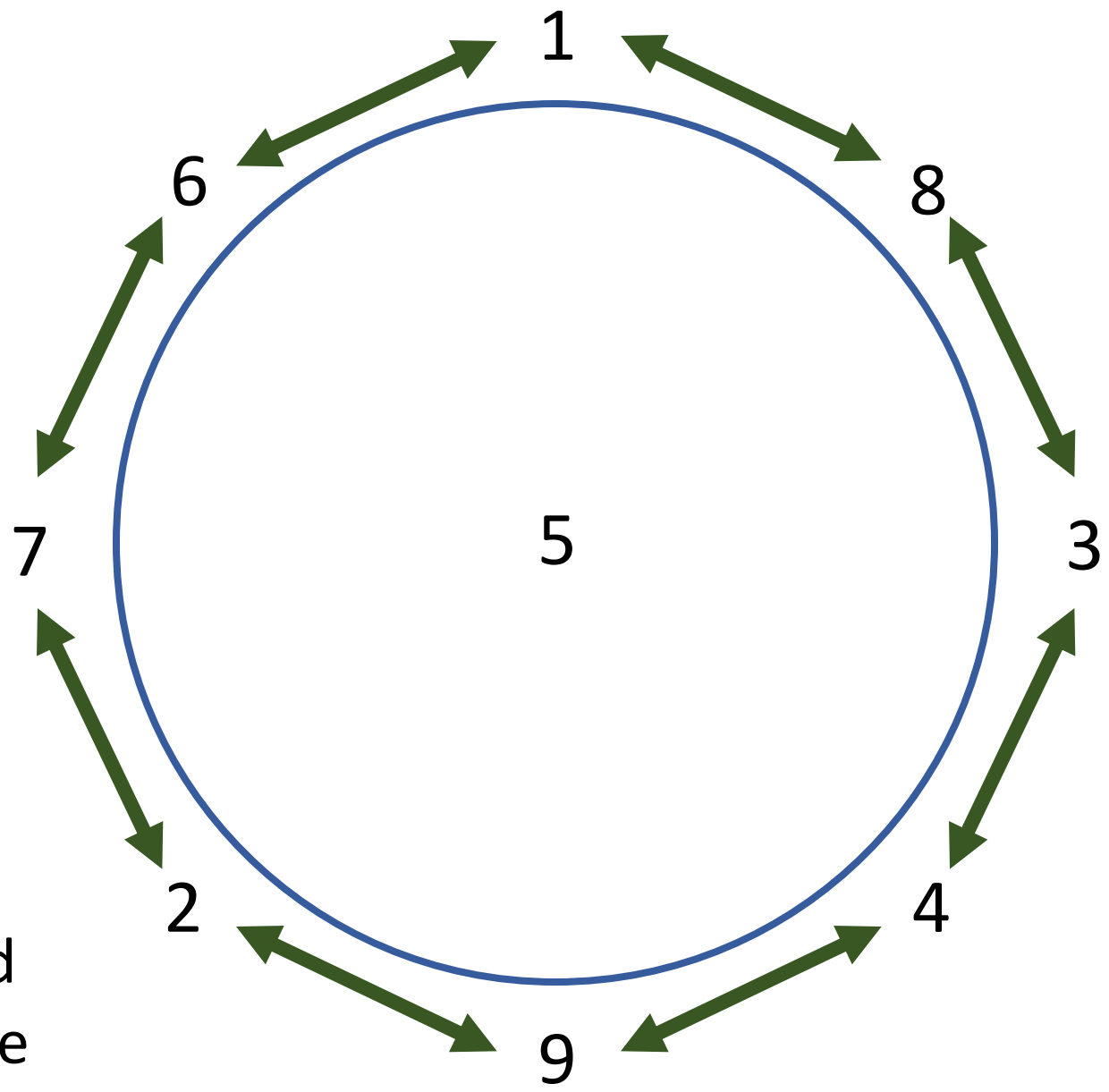


Fig. 2.1

A different representation makes the solution clearer





valid move

Fig. 2.2

Full definition of the relationship “cousin”.

a dog's cousin is a daughter of a sister of its mother

a dog's cousin is a daughter of a sister of its father

a dog's cousin is a daughter of a brother of its mother

a dog's cousin is a daughter of a brother of its father

a dog's cousin is a son of a sister of its mother

a dog's cousin is a son of a sister of its father

a dog's cousin is a son of a brother of its mother

a dog's cousin is a son of a brother of its father

Fig. 2.3

Truth values for simple logic operators

P	Q	P∧Q	P∨Q
T	T	T	T
T	F	F	T
F	T	F	T
F	F	F	F

Fig. 2.4

Production system rules for assessing a loan application

1. IF <client working? is unknown>
   THEN ask "Are you working?"
        read WORKING
        remove <client working? is unknown>
        add <client working? is WORKING>

2. IF <client working? is YES> and <salary is unknown>
   THEN ask "What is your salary?"
        read SALARY
        remove <salary is unknown>
        add <salary is SALARY>

3. IF <client working? is YES> and <salary is SALARY> and SALARY > (5 * AMOUNT REQUESTED)
   THEN grant loan of AMOUNT REQUESTED
        clear database
        finish

...

Fig. 2.5a

Production system rules for assessing a loan application (ctd)

4. IF <client working? is YES> and <salary is SALARY> and SALARY <= (5 * AMOUNT REQUESTED)
   THEN grant loan of (SALARY/5)
        clear database
        finish

5. IF <client working? is NO> and <client student? is unknown>
   THEN ask "Are you a student?"
        read STUDENT
        remove <client student? is unknown>
        add <client student? is STUDENT>

6. IF <client working? is NO> and <client student? is YES>
   THEN discuss student loan
        clear database
        finish

7. IF <client working? is NO> and <client student? is NO>
   THEN refuse loan
        clear database
        finish

Fig. 2.5b

A fragment of a semantic network

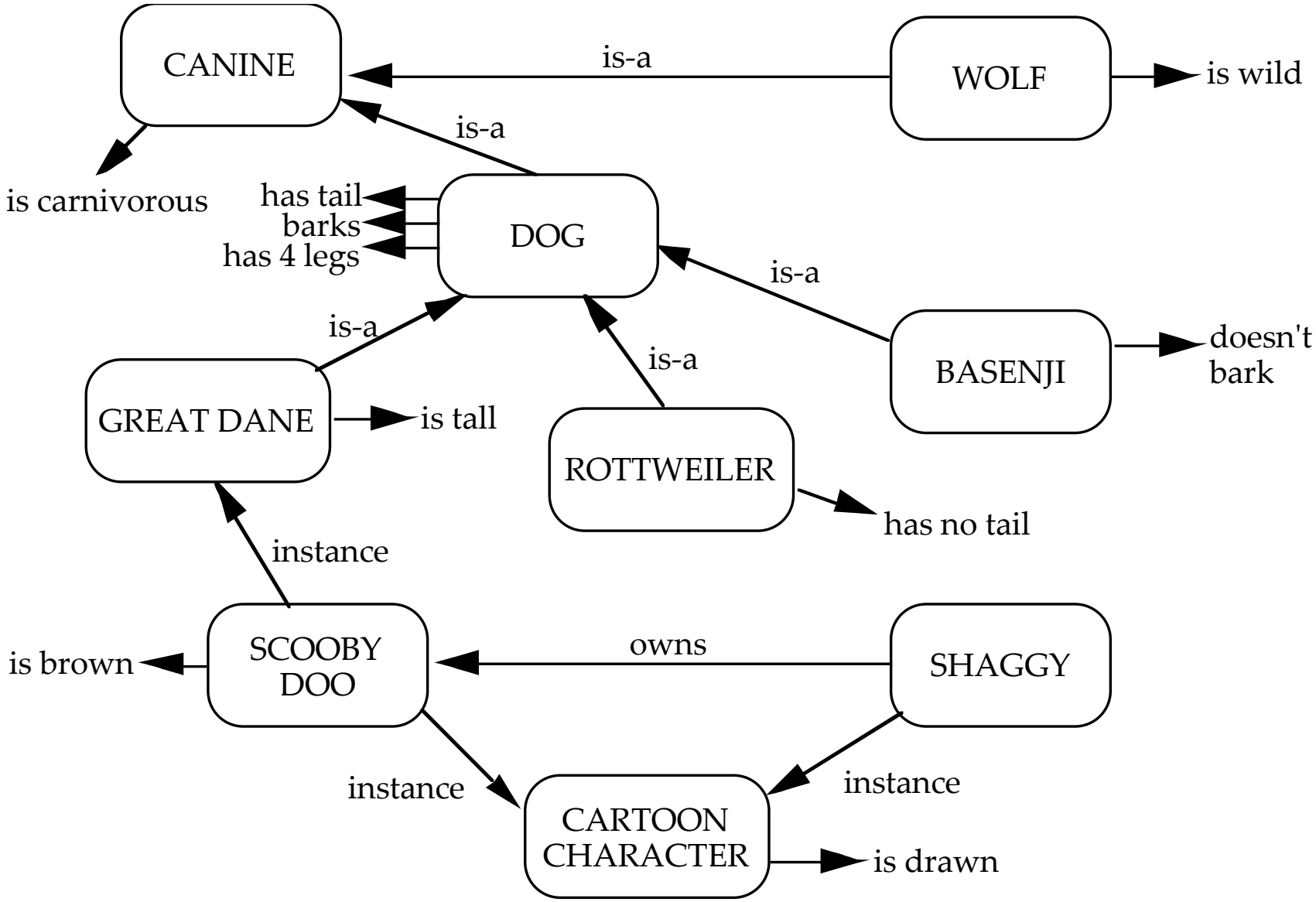


Fig. 2.6

Frame representation of supermarket

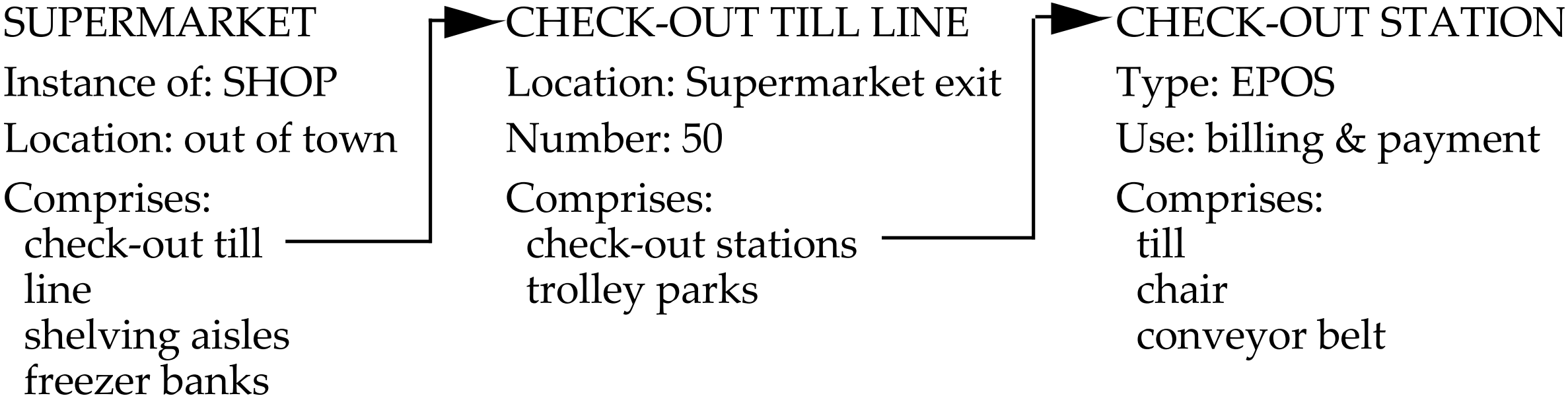


Fig. 2.7