

MGL7160: Exercice #1 — Solutions

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1. Quantificateurs et concepts

[10] a)

1. CONCEPT grand_patron(e: employe) VALUE(b: boolean)
WHERE b \Leftrightarrow \sim SOME(e1: employe :: supervise(e1, e))

CONCEPT grand_patron(e: employe) VALUE(b: boolean)
WHERE b \Leftrightarrow NUMBER(e1: employe SUCH THAT supervise(e1, e) :: e1) = 0
2. CONCEPT nb_bureaux(e: employe) VALUE(n: nat)
WHERE n = NUMBER(b: bureau SUCH THAT utilise(e, b) :: b)
3. CONCEPT bureau(e: employe SUCH THAT grand_patron(e)) VALUE(b: bureau)
WHERE utilise(e, b)

[15] b)

- \sim SOME(e: employe :: supervise(e, e))

ALL(e: employe :: \sim supervise(e, e))
- \sim SOME(b: bureau ::
NUMBER(e: employe SUCH THAT utilise(e, b) :: e) > capacite(b))

ALL(b: bureau ::
NUMBER(e: employe SUCH THAT utilise(e, b) :: e) \leq capacite(b))
- ALL(e: employe, b1 b2: bureau SUCH THAT b1 \sim = b2 ::
utilise(e, b1) & utilise(e, b2) \Rightarrow telephone(b1) = telephone(b2))

ALL(e: employe, b1 b2: bureau SUCH THAT b1 \sim = b2 & utilise(e, b1) & utilise(e, b2) ::
telephone(b1) = telephone(b2))
- ALL(p: employe SUCH THAT grand_patron(p) ::
NUMBER(e: employe SUCH THAT utilise(e, bureau(p)) :: e) = 1)

ALL(p: employe SUCH THAT grand_patron(p) ::
 \sim SOME(e: employe SUCH THAT e \sim = p :: utilise(e, bureau(p))))