Assignment 2

Team Name: InSync

Tutorial Group: A37

Contributions:

1) Lim Boon Hian (U2120791F)

* Programmed Knowledge Base and FOL rules into Prolog for Q1 and Q2.
* Improved code and documented formatting.

2) Tio Guo Yong (U2123181B)

* Defined FOL statements for Q1.
* Improved Prolog logic for Q2(a).

1(a)

|  |  |
| --- | --- |
| **Statements** | **FOL** |
| sumsum, a competitor of appy | Competitors(sumsum, appy) |
| sumsum developed some nice smartphone technology called galactica-s3 | Develop(sumsum, galactica-s3) |
| smartphone technology, galactica-s3 stolen by stevey | Steal(stevey, galactica-s3) |
| stevey is a boss of appy | Boss(stevey, appy) |
| If company X is a competitor to company Y, then company Y is also a competitor to company X | ∀x, ∀y, (x ≠ y ∧ Competitors(x, y)) ⇒ Competitors(y, x) |
| A competitor is a rival | ∀x, ∀y, Competitors(x, y) ⇒ Rivals(x, y) |
| Smartphone technology is a business:  A technology, X developed by company Y is a business for Y | ∀x, ∀y, Develop(x,y) ⇒ Business(x,y) |
| It is unethical for a boss (A) of a company (X) to steal business (B) from rival companies (Y) | ∀a, ∀b, ∀x, ∀y, (x ≠ y) ∧ Steal(a, b) ∧ Boss(a, x) ∧ Business(y, b) ∧ Rivals(x, y) ⇒ Unethical(x) |

1(b)

Graphical user interface, application

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1(c)

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2

In the Prolog rule base, the order of birth is implied by the ordering of the Prolog code for the ‘child’ relationship due to Prolog’s compiler. In our case, child(prince\_charles, queen\_elizabeth) in the first row [see Figure in (a)] means that Prince Charles is the eldest child of Queen Elizabeth. Likewise, child(prince\_edward, queen\_elizabeth) in the fourth row means that Prince Edward is the fourth child of Queen Elizabeth. Hence, we do not need to explicitly specify the order of birth in Prolog.

(a)

For this question, Prolog computes the line of male succession followed by the line of female succession according to the order of birth.

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(b)

For this question, Prolog computes the line of succession according to the order of birth irrespective of the gender.

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