

# oblig6

Lamo

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## 1 OWL modelling

### 1.1 DL Axioms

#### Statements

3.  $Horse \sqsubseteq Animal$
4.  $Animal \sqsubseteq (Male \sqcup Female)$
5.  $Male \sqcap Female \sqsubseteq \perp$
13.  $MonteHorse \sqsubseteq \forall hasCompeted.MonteRace \sqcap RaceHorse$
14.  $SuperHorse \sqsubseteq \geq 100 hasWon.HorseRace \sqcap RaceHorse$
15.  $hasWon \sqsubseteq hasCompeted$
19.  $RaceHorse \sqsubseteq \exists hasTrainer.Person$
21.  $hasTrainer.Person \equiv trains.Horse^-$

#### Induviduals

1.  $Horse(Rodney) \sqcap name(Rodney, "RexRodney") \sqcap SuperHorse(Rodney) \sqcap hasTrainer(Rodney, Hakonsen) \sqcap name(Hakonsen, "KjellHåkonsen") \sqcap hasWon(Rodney, Elitloopet1986) \sqcap HorseRace(Elitloopet1986) \sqcap sire(Rodney, DrRodney) \sqcap name(DrRodney, "DoctorRodney")$
2.  $\neg MonteRace(Elitloopet1986)$
3.  $Horse(SRG) \sqcap name(SRG, "Steady, Ready, Go") \sqcap Filly(SRG) \sqcap MonteHorse(SRG)$

## 1.2 Questions

1. Unknown. We know that Rex Rodney is a horse, but not the gender.
2. Yes. A horse he trains competed in that race.
3. Unknown. This is not specified.
4. No. This breaks statment no.16. Steady, Ready, Go is too young to be a warmblooded horse.
5. Unknown. Just because SRG is not warmblooded does not mean it's coldblooded, even though coldblooded is the inverse of warmblooded.
6. No. SRG is a monte horse and Elitloopet is not a monte race.

## 2 Mapping dbpedia to your ontology

The answers below are an approximation of what the ontology should produce.  
I partly failed the mapping ontolog.y

### 2.1 Questions

1.
  - dbp:In\_the\_Wings
  - dbp:Northern\_Dancer
  - dbp:Stallion

If we are going for a realistic ontology, then we should add a general class axiom that classify all horses that are sire to also be Stallions.  
(inverse (sire) some Horse SubClassOf Stallion)

2. Protege Wouldn't return any results on the query "Male and Horse", but here is what it should have returned.
  - dbp:In\_the\_Wings
  - dbp:Nearco
  - dbp:Nearctic
  - dbp:Northern\_Dancer
  - dbp:Sadler
  - DrRodney
3. In the Wings has a grandfather named "Northern Dancer" that is an anonymous individual. It is not stated that this is the same entity as Northern Dancer.