**Queries:**

*q1 :- actor(robert\_pattinson), actorworkedwithdirector(robert\_pattinson,catherine\_hardwicke), director(catherine\_hardwicke).*

This is the inference solvable kind, where the actorworkedwithdirector relation can be deduced from existing tuples.

*q2 :- actor(X),actorworkedwithdirector(X,clint\_eastwood).*

This is also the inference solvable kind, but using the problog exists syntax.

*q3 :- actor(X),actorstarredinmovie(X,movie\_trainspotting), movie(movie\_trainspotting),\+director(X).*

This is the non-inference solvable kind, where there is a missing tuple that can not be deduced from the existing tuples.

*q4 :-actor(X),actorstarredinmovie(X,million\_dollar\_baby),movie(million\_dollar\_baby),\+actor(hilary\_swank),\+actor(clint\_eastwood).*

Similar to q3, but with negation of ground facts instead of variable facts.

*q5 :- actor(robert\_pattinson), actorworkedwithdirector(robert\_pattinson,X), director(X).*

This is q1, but using the problog exists syntax to manipulate it for more refined results.

**Completed-DB**

Upper bound = **1.0**

q1: 1

q2: 1

q3: 0

q4: 0

q5: 1

Upper bound = **0.7**

q1: 0.7

q2: 1

q3: 0.61049919

q4: 0

q5: 0.99892553

Upper bound = **0.3**

q1: 0.3

q2: 1

q3: 0.61049919

q4: 0

q5: 0.8190676

Upper bound = **0.01**

q1: 0.01

q2: 1

q3: 0.039015812

q4: 0

q5: 0.03969214

**Incomplete DB**

q1: 0

q2: 1

q3: 0

q4: 0

q5: 0