COMP348

TUTORIAL #1

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ACKNOLGMENT

- Those slides are inspired by Dr.Mohammad Taleb slides from previous semesters.

EXERCISE 1

- parent(P, C) means that P is a parent of C. We have the following facts:

parent(fred, sally).

parent(tina, sally).

parent(fred, peter).

parent(tina, peter).

parent(sally, john).

parent(sally, diane).

parent(sam, bill).

- **Question1:** Write down a procedure to define the brothers and uncle relationships.

EXERCISE 1-- CONT.

- **Question2:** what is the output of the following queries

  parent(X, sally);

  parent(Fred, sally);

  parent(Alex, sally);

  parent(sally, tina);

  parent(sam, bill);

EXERCISE 2

- Some synopsis of the database we are going to use in prolog.
- Database:

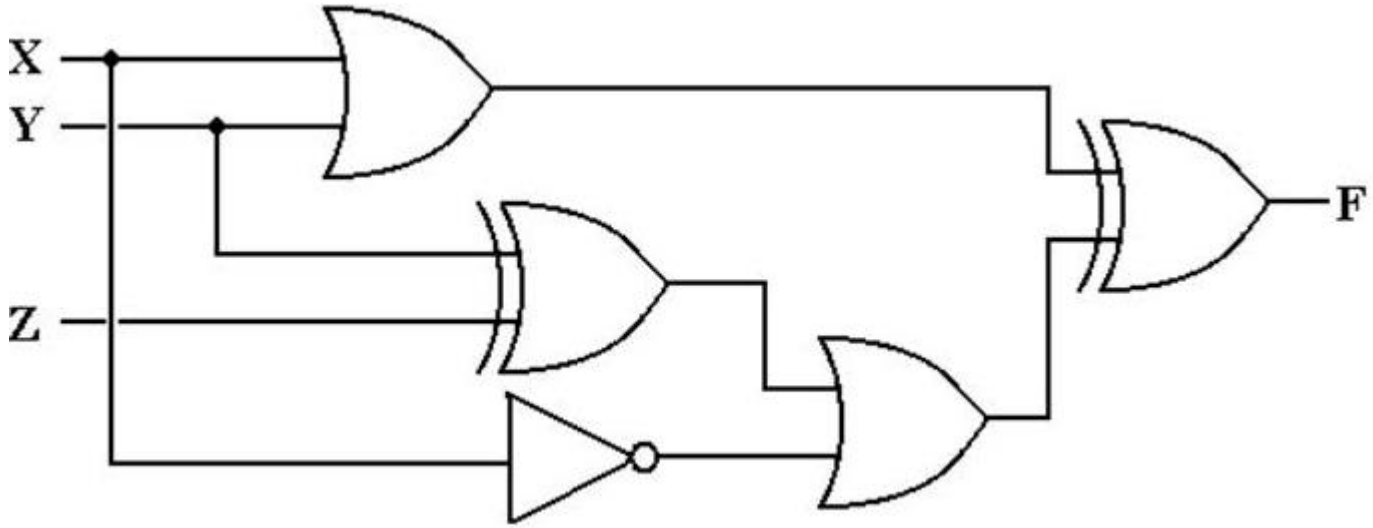
```
object(galatea).
object(larissa).
object(thalassa).
mass(mercury, 0.33).
mass(venus, 4.87).
mass(earth, 5.98).
orbits(mercury, sun).
orbits(venus, sun).
orbits(earth, sun).
```

EXERCISE 2 -- CONT.

- **Question 1:** Define a Prolog rule planet(P) for the isPlanet relation; where P is a planet if it is an object with mass equal to or greater than 0.3 and P orbits around the sun.
- **Question 2:** Define a Prolog rule satellite(S) for the isSatellite relation; where S is a satellite if it is an object orbits around a planet.
- **Question 3:** Demonstrate step-by-step how satellite(S) query proceeds until indicating success or failure. You must explain this only in terms of unification, resolution, substitution and instantiation.

EXERCISE 3

- Using Prolog, design the following circuit.



THANKS…