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**Homework on PROLOG**

**December 20, 2017**

To do alone or in a team of 2 students.

## PROLOG

1. Let us consider the following set of facts that describe the mother predicate.

`mother(linda, paul).`

`mother(cathy, andrew).`

`mother(cathy, laura).`

- Define a predicate `female(X)` which holds iff X is a female

`female(linda).`

`female(cathy).`

`female(laura).`

- Define a predicate `sister(X,Y)` which holds iff X and Y are sisters

`sister(laura, andrew).`     **TRUE**

`sister(andrew, laura).`     **FALSE**







`sister(Z,Y) :- mother(X,Z), mother(X,Y), female(Z), female(Y), Z \= Y.`

- Implement `female` and `sister` in PROLOG
- Provide screenshots

```
mother(linda, paul).  
mother(cathy, andrew).  
mother(cathy, laura).
```

```
female(linda).  
female(cathy).  
female(laura).
```

```
sister(Z,Y) :- mother(X,Z), mother(X,Y), female(Z), female(Y), Z \= Y.
```

	<code>sister(laura, andrew)</code>
	<b>true</b>
	<code>sister(andrew, laura)</code>
	<b>false</b>
	<code>female(paul)</code>
	<b>false</b>
	<code>mother(cathy, linda)</code>
	<b>false</b>
	<code>mother(cathy, andrew)</code>
	<b>true</b>
	<code>?- mother(cathy, andrew)</code>

2. Implement the function  $g$  such that  $g(x) = x+5$ .

$g(x) = x+5$ .

$g(X,Y) :- Y \text{ is } X+5$ .

```
?- g(5,Y).
```

```
Y = 10.
```

```
?-
```

```
?- g(10,Y).
```

```
Y = 15.
```