**CPSC 583 Fall 2019**

**Homework #2**

**Due 10/19/2019 by 11:55pm on Titanium**

**You may work in groups of two. Only one person needs to turn in the assignment on Titanium.**

**1.** The attached `family.clp` CLIPS program describes a set of parent-child pairs and rules to identify siblings. (Remember to run `(reset)` to load the facts).

(a) Add one rule to family.clp to only print a list of all people who are parents (i.e., do not add/remove new facts).

(b) Add one rule to family.clp to print a list of all pairs of persons who are cousins *and* assert new facts of the form "`(cousin Varun Rahul)`". Two persons are cousins if their parents are siblings. (You do not have to prevent duplicate pairs.)

**Submit ONLY your modified family.clp file to Titanium**

**2.** The attached `cars.clp` CLIPS program describes a list of cars (brand, price, color). The program asks the user to enter an age and then executes a rule to recommend a car – if the person is younger than 25, then recommend a car that costs less than $30,000.

(a) Modify the rule such that the recommendation for a person younger than 25 years of age is a car that costs less than $30,000 *and red in color*.

(b) Add a new rule that recommends for a person older than 25 years a white car.

**Submit ONLY your modified cars.clp file to Titanium**

**3.** The attached `main.pg` Prolog program describes a list of cars (brand, price, color) and a rule that recommends a car that costs less than $30,000 for a person younger than 25 years of age [same problem as in the CLIPS question]. Note that you "run" this program by posing a query:

```
recommendcar(23, X).
```

(a) Modify the rule such that the recommendation for a person younger than 25 years is a car that costs less than $30,000 *and red in color*.

(b) Change the program such that recommendation for a person older than 25 years is a white car.

**Submit ONLY your modified main.pg file to Titanium.**

To solve this problem, you do *not* need to download and install a Prolog interpreter and development environment. You can use a free online interpreter such as: https://swish.swi-prolog.org/ (select "Create a Program")