Small Assignment #5
Due: Wednesday, 10/30/2024 by 11:59 PM
Submission: Submit this to Gradescope as a single PDF. Assign pages to questions. There are points associated with this for some of the questions below.

Instructions.
The questions below refer to the facts given below. The database represents two graphs related to social media with these two predicates:

```
friend(X, Y): X is friends with Y
follows(X, Y): X follows Y
```

Note that `friend` is a reciprocal relationship, while `follows` is not. However, neither one is explicitly reciprocal in the facts, so you will need to make a new predicate that uses `friend` to make a reciprocal `friends` rule.

```
%friend facts
friend(alan, bichuan).
friend(alan, maria).
friend(bichuan, elena).
friend(maria, elena).
friend(maria, zahra).
friend(deshawn, anna).
friend(deshawn, ali).
friend(coco, elena).
friend(coco, lucas).
friend(elena, lucas).
friend(lucas, oliver).
friend(ali, anna).
friend(ali, zahra).

% follow facts: follow(X,Y) means “X follows Y”
follows(elena, alan).
follows(elena, coco).
follows(oliver, alan).
follows(maria, oliver).
follows(bichuan, coco).
follows(bichuan, lucas).
follows(bichuan, deshawn).
follows(deshawn, ali).
follows(anna, maria).
follows(ali, anna).
follows(zahra, anna).
```

```
follows(zahra, ali).
```

Implement each of the following. Provide your answers in a PDF and submit them to Gradescope. (But of course test them with SWI-Prolog first!)

#	Predicate	Description	Example Queries
1	friends(X, Y)	X and Y are friends–makes the friend relationship reciprocal.	?- friends(bichuan, X). X = elena ; X = alan. ?- friends(X, lucas). X = coco ; X = elena ; X = oliver.
2	commonFriend(X, Y, Z)	Z is a friend of both X and Y	?- commonFriend(alan, elena, X). X = bichuan ; X = maria ; false. ?- commonFriend(coco, X, elena). X = bichuan ; X = maria ; X = lucas ; false. ?- commonFriend(X, anna, ali). X = deshawn ; X = zahra ; false. ?- commonFriend(X, Y, zahra). X = maria, Y = ali ; X = ali, Y = maria ; false.

			?- commonFriend(X, Y, Z). X = alan, Y = elena, Z = bichuan ; X = alan, Y = elena, Z = maria ; … (there are more results possible)
3	suggestFriend(X, Y)	suggest X and Y be friends if they have a friend in common and are not already friends or if they follow the same person and are not already friends	?- suggestFriend(alan, X). X = elena ; X = elena ; X = zahra ; false. ?- suggestFriend(X, deshawn). X = zahra ; X = deshawn ; X = zahra. ?- suggestFriend(X, Y). X = alan, Y = elena ; X = alan, Y = elena ; X = alan, Y = zahra ; X = bichuan, Y = maria … (there are more results possible)
4	suggestFollow(X, Y)	suggest that X follow Y if X follows someone who follows Y and X does not already follow Y or if X follows someone who is friends with Y and X does not already follow Y or if X is friends with someone who follows Y and X does not already follow Y	?- suggestFollow(alan, X). X = coco ; X = lucas ; X = deshawn ; X = oliver ; false. ?- suggestFollow(X, anna). X = deshawn ;

			X = bichuan ; X = deshawn ; X = maria ; X = deshawn ; false.