Final Homework Question 1 (Expected time: 2 Days comfortably)

1. (18 marks -> will be scaled down to 10) You are to write a Prolog program for recording and displaying TV showtime. Design all the code and data by yourself.

    Hint:
    - use "asserta(X)" to write X to memory and "retract(X)" to remove X from memory.
    - Declare **:-dynamic X/Y**. in the beginning of your file to allow predicate X (which has Y parameters) to be used with "asserta" and "retract".
    - **:-reconsult('anotherfile.pl').** can be used on the first line to import another file.
    - **Example execution covers the entire program execution, but it is divided into parts corresponding to each function.**

    The program has the following functions:
    - input (4 marks). This function is used to record a TV program name, day, and time.
        o Same TV program name can be added with different date/time. Each must be added separately.
        o Day can only be Sunday to Saturday. If the user input a wrong day, the program must prompt for a re-input.
        o Time is in 4 digit format. Example values are 0000 to 2359. You can assume that the user always input a legal time (no need to check for correctness).
        o Once all inputs are entered by the user, print the input TV program detail and record it into the program's memory.

    Example execution:
    ?- input.
    Type the name of the TV program.
    |: dynazenon.
    Type the day of the TV program.
    |: dday.
    Invalid day of week.
    Type the day of the TV program.
    |: sunday.
    Type the time of the TV program.
    |: 1700.
    dynazenon, sunday, 1700.
    true .

    ?- input.
    Type the name of the TV program.
    |: naruto.
    Type the day of the TV program.
    |: sunday.
    Type the time of the TV program.
    |: 0800.
    naruto, sunday, 800.   It is ok to display 0800 without leading zero
    true .

    ?- input.
    Type the name of the TV program.
    |: dynazenon.
    Type the day of the TV program.
    |: thursday.
    Type the time of the TV program.
    |: 0900.
    dynazenon, thursday, 900.
    true .

    ?- input.

Final Homework Question 1 (Expected time: 2 Days comfortably)

Type the name of the TV program.
|: zombielandsaga.
Type the day of the TV program.
|: thursday.
Type the time of the TV program.
|: 2245.
zombielandsaga, thursday, 2245.
true .

- **dayView (4 marks)**
    - o This function asks for day of week (incorrect day must prompt for a re-input).
    - o It shows all TV program on that day (sorted by the time from morning to night).

Example execution:
?- dayView.
Type the day of the TV program.
|: sunday.
naruto, 800
dynazenon, 1700
true .

?- dayView.
Type the day of the TV program.
|: monday.

true .

If there is no program on that day, shows nothing.

?- dayView.
Type the day of the TV program.
|: thus.
Invalid day of week.
Type the day of the TV program.
|: thursday.
dynazenon, 900
zombielandsaga, 2245
true .

- **programView (3 marks)**
    - o This function asks for a TV program name.
    - o It prints all the show time for that TV program (Days do not have to be sorted).

Example execution:
?- programView.
Type the name of the TV program.
|: dynazenon.
thursday: 900

sunday: 1700

monday:
tuesday:
wednesday:
friday:
saturday:
true.

It is up to you whether to print this. As long as you show all the showtimes for that program, then your program is fine.

Final Homework Question 1 (Expected time: 2 Days comfortably)

- <mark>removeAll (4 marks)</mark>
  - o This function asks for a TV program name.
  - o It removes all instances of that TV program.

Example execution:
?- removeAll.
Type the name of the TV program.
|: dynazenon.

true.

?- dayView.
Type the day of the TV program.
|: sunday.
naruto, 800
true .

?- dayView.
Type the day of the TV program.
|: thursday.
zombielandsaga, 2245
true .

?- programView.
Type the name of the TV program.
|: dynazenon.
thursday:
sunday:
monday:
tuesday:
wednesday:
friday:
saturday:
true.

- <mark>quit (3 marks)</mark>
  - o save all TV program to file.

Example execution:
?- quit.
true.

Then when close and open window again, TV programs must still be there.
?- dayView.
Type the day of the TV program.
|: sunday.
naruto, 800
true .

?- dayView.
Type the day of the TV program.
|: thursday.
zombielandsaga, 2245
true .

?- programView.
Type the name of the TV program.
|: naruto.
thursday:
sunday: 800

Final Homework Question 1 (Expected time: 2 Days comfortably)

monday:
tuesday:
wednesday:
friday:
saturday:
true.

How to submit:
Zip your prolog files into a zip file named with your id (for example, 6133320021_HW_Final_Q1.zip) and submit it on MyCourseville.