

# Logic Programming

## Project

**Due: Practical Exam.**

Group task: Max 7 students.

Total grade: 10 points (Originality = 4, Precision = 3, Interface = 3)

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- Using SWI-Prolog to build one of the systems described below.
  - Your system should have a GUI interface (as a desktop application using **XPCE** or as a web application using **SWI-Web**).
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1. Write a program to analyze some \*.txt corpus of Arabic sentences and answer a natural language questions such as:

- ما اكثر كلمة مستخدمه في هذا الملف؟
- كم عدد الأفعال الموجودة بهذا الملف؟
- أعرض جميع حروف الجر الموجودة في هذا الملف .

2. Write a natural language interface to the filing system of your computer to answer questions such as:

- How many files does Ahmed own? (*Ahmed here is your computer name*)
- Does Ahmed share PROG.PL with Ali?
- When did Ahmed change the file VIDEO.MP4?

The program must be able to interrogate various parts of the filing system such as ownership and dates.

3. Given a map that describes roads that connect towns, write a program that plans a route between two towns, giving a timetable of expected travel. The map data should include mileage, road conditions, estimated amount of other traffic, gradients, availability to fuel along various roads. The program should answer natural questions such as:

- How many routes between A and B?
- What is the shortest route between A and B?
- Is it possible to fuel along route 1 ?

You are free to base your system on Google Maps API or any other APIs to get the map information.

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4. **Write a SWI-prolog program to check wither a given code is a correct C language program (Correct syntax).**
  
  5. **Write a SWI-prolog program to answer natural language questions about the division of inheritance between a family members. The program should accept input of the form of names and relationships and answer questions such as:**
    - **What is the division of Ali?**
    - **Why Ali's division greater than Noha's division?**