CSL202 | Assignment-6 | Due 24/Apr/2018 11:59 PM | 100 points

- Important instructions for coding submission are here: https://goo.gl/IMWvdF
- Grading scheme to be followed is available here: https://goo.gl/52D82g
- Assignment description may be underspecified to allow some room for exploration and creativity.
- Your submission should be packaged as a zip file named **exactly** in this format: CSL202-[your entry no.]-[assignment no.].zip.

For a client (which is an IT company) we need to build an application which can decide whether a particular software application can be deployed on a given computer or not. Following information is available in a YAML file:

1. Configuration of various computers which are available with the client.
2. Information about operating systems (OS) which are or can be installed on these computers.
3. Information about software (libraries etc.) which are supported by an OS.
4. Information about the applications about which we need to decide if they can be run on a given machine.

An example YAML file is available at:
https://drive.google.com/open?id=1DdS3EKjO09IU1Dq7EwuqVJ1NkBlxW-Wc

In order to build such an application you need to do the following:

A. Write a program (name it `facts_gen.py`) in Python which can take as input the above YAML file containing *facts* about the machines and software etc., and generate suitable assertions for Prolog which can represent these facts.
   The output of this program would be a Prolog script (name it `facts_and_rules.pl`) containing proper facts corresponding to the scenarios given in the input YAML file. (For dynamically creating facts/rules see: http://www.swi-prolog.org/pldoc/man?section=dynpreds)
B. Edit the generated Prolog script `facts_and_rules.pl` to add rules for the following queries. Your rules will make use of the facts you generate in step A above.
   1. Given an application ID, list all the machines where the application can be executed.
   2. Given an application ID and a machine ID, tell whether the machine can execute the application or not.
C. Write a program (name it `logic_app.py`) in Python which will invoke `facts_and_rules.pl` (use SWI-Prolog for linux http://www.swi-prolog.org/) to interactively answer above queries.

Useful information:

- You can make of library such as http://pyyaml.org/wiki/PyYAML for handling YAML files.
- Command-line options for `swipl`: http://www.swi-prolog.org/pldoc/man?section=cmdline
- http://www.swi-prolog.org/pldoc/man?section=compilation