**Lab 10 Instructions**

You need to create a rule base in today’s lab based on the information given below.

Imagine that you are making an irrigation control system. An irrigation control system basically regulates the water pumps that are used for irrigating agricultural land. The pump can be in three possible states: High, Medium, Off. As a knowledge engineer you have discussed with agricultural scientists and have found that the amount of water needed by a specific crop depends on several factors like

(a) type of soil (comes in three categories – sandy, humous, clay)

(b) type of crop (comes in 5 categories – C1, C2 … C5 with C1 needing maximum water and C5 needing minimum water)

(c) weather (dry, light rain, heavy rain)

(d) wetness of soil (very wet, wet, moist, dry)

**Build 20 rules in the format**: If (Condition) then action

A condition is in terms of the categories of soil, crop, weather and wetness of soil.

The action is in terms of defining the state of the pump.

An example rule is:

If(wetness of soil is very dry **and** weather is dry) then pump is in high state

Note that the above rule holds without considering type of crop or type of soil.

Also note that we use **and** / **or** to build compound conditions.

**Now, given a specific instance of the four variables, your program should output which of the 20 rules have fired.**

By the way, don’t worry too much about the accuracy of your KB at this point of time.

Upload your program and a sample output on Moodle. Also, show your work, even if it is partial, during the lab.