CSC 421 – A2 Q2 Solution

Devroop Banerjee
V00837868

Q2:

- **Variables:**
  // {courses, ...}
  {CSC110, CSC115, ..., CSC421, ...}

- **Domain:**
  // The domain contains all possible {term. slot, time} for each variable
  // {term, termslot, timeslot}

{(fall_2017, 1, 08:00-09:00), (fall_2017, 1, 09:00-10:00), ... , (fall_2017, 1, 17:00-18:00),
 (fall_2017, 2, 08:00-09:00), (fall_2017, 2, 09:00-10:00), ... , (fall_2017, 2, 17:00-18:00),
 (fall_2017, 3, 08:00-09:00), (fall_2017, 3, 09:00-10:00), ... , (fall_2017, 3, 17:00-18:00),
 (fall_2017, 4, 08:00-09:00), (fall_2017, 4, 09:00-10:00), ... , (fall_2017, 4, 17:00-18:00),

 (spring_2018, 1, 08:00-09:00), (spring_2018, 1, 09:00-10:00), ... , (spring_2018, 1, 17:00-18:00),
 (spring_2018, 2, 08:00-09:00), (spring_2018, 2, 09:00-10:00), ... , (spring_2018, 2, 17:00-18:00),
 (spring_2018, 3, 08:00-09:00), (spring_2018, 3, 09:00-10:00), ... , (spring_2018, 3, 17:00-18:00),
 (spring_2018, 4, 08:00-09:00), (spring_2018, 4, 09:00-10:00), ... , (spring_2018, 4, 17:00-18:00),

 (summer_2018, 1, 08:00-09:00), (summer_2018, 1, 09:00-10:00), ... , (summer_2018, 1, 17:00-18:00),
 (summer_2018, 2, 08:00-09:00), (summer_2018, 2, 09:00-10:00), ... , (summer_2018, 2, 17:00-18:00),
 (summer_2018, 3, 08:00-09:00), (summer_2018, 3, 09:00-10:00), ... , (summer_2018, 3, 17:00-18:00),
 (summer_2018, 4, 08:00-09:00), (summer_2018, 4, 09:00-10:00), ... , (summer_2018, 4, 17:00-18:00),
}

- **Constraints:**
  // Let X, Y be two courses (variables)
  // Suppose that an assignment A has (termX, slotX, timeX) for X and (termY, slotY, timeY) for Y
  // A is consistent

a) **Courses might have prerequisite courses that need to be taken before.**

   if(termX < termY)

b) **Some courses are offered in certain terms only.**

   Let L be a list of terms a course is offered in
   if(X belongs to L)

c) **We want to take no more than 4 courses per term**

   If(termX, slotX) != (termY, slotY)

d) **Time conflicts should be avoided**

   if(termX, timeX) != (termY, timeY)