Foundation of Computer Science (CS60001)
Tutorial-07

October 2, 2010

1. Encode the following arguments and show whether they are (Valid/ Not Valid/ Satisfiable/ Unsatisfiable).

   (a) If algebra is required or geometry is required, then students will study mathematics. Algebra is required and trigonometry is required. Therefore, students will study mathematics.

   (b) If Bill takes the bus and the bus is late, then Bill misses his appointment. Bill should not go home if (i) Bill misses his appointment and (ii) Bill feels downcast. If Bill does not get the job, then (i) Bill feels downcast and (ii) Bill should go home. Therefore, If the bus is late, then either Bill does not take the bus or Bill does not miss his appointment.

2. Encode the following arguments:

   (a) Every athlete is strong. Everyone who is strong and intelligent will succeed in his career. Peter is an athlete. Peter is intelligent. Therefore, Peter will succeed in his career.

   (b) The custom officials searched everyone who entered this country and who was not a VIP. Some of the drug pushers entered this country and they were only searched by drug pushers. No drug pusher was a VIP. Therefore, some of the officials were drug pushers.

   (c) Anyone is unfortunate who bears the same name as a person who commits a crime. Therefore, anyone who commits a burglary is unfortunate.

3. Slove this logical problem

   - There are three suspects for a murder: Adams, Brown and Clark. Adams says I didnt do it. The victim was an old acquaintance of Browns, but Clark hated him. Brown says I didnt do it. I didnt even know the guy. Besides, I was out of town all that week. Clark says I didnt do it. I saw both Adams and Brown downtown with the victim that day; one of them must have done it. Assume that the two innocent men are telling the truth, but the guilty man might not be. Who did it?