Tutorial 4

1 The Crop Allocation Problem

The variables would be s1, s2, s3 and s4

Domains would be:

domain(s1, [cabbage, kale, broccoli, cauliflower])

domain(s2, [cabbage, kale, broccoli])

domain(s3, [kale]),

domain(s4, [kale, broccoli]).

The constraint is that $s_1 \neq s_2 \neq s_3 \neq s_4$.

2 First-Order Logic

1) $\forall x. \, student(x) \wedge subject(x; French) \wedge during(x; Spring2001).$

2) $\forall x. \, student(x) \wedge subject(x; French) => pass(x; French).$

3) $equalsTo(amountOfStudents(Greek; Spring2001); 1).$

4) $greaterThan(maxScore(Greek), maxScore(French)).$

5) $\exists a, \forall b: barber(a) \wedge \neg shave(b; b) => shaves(a; b).$

3 Most General Unifier (MGU)

1) x/A, y/B, z/B.

2) Unification fails as *q(A, A)* cannot be unified with *q(A, B)*.

3) x/John, y/John.

4) Unification fails because we are not able unify *y* and father(*y*) because of the occurs check.