CSCI 320 Assignment 1 Resolution:

Brandi Durham

1a. ?-perennial\_garden(phlox).

Goal: perennial\_garden(phlox)

Match: perennial\_garden(F) with F = phlox

Goal: flower(phlox)

Match: flower(phlox)

Goal: type(phlox, perennial)

Match: type(phlox, perennial)

Match: perennial\_garden(phlox)

Success, true

1b. ?- perennial-garden(rose)

Goal: perennial\_garden(rose)

Match: perennial\_garden(F) with F = rose

Goal: flower(rose)

Match: flower(rose)

Goal: type(rose, perennial)

Fail: type(rose, perennial)

False

1c. ?- perennial\_garden(X)

Goal: perennial\_garden(X)

Match: perennial\_garden(F) with F = X

Goal: flower(F)

Match: flower(rose) with rose = F = X

Goal: type(rose, perennial)

Fail: type(rose, perennial)

Redo: flower(F)

Match: flower(petunia)

Goal: type(petunia, perennial)

Fail: type(petunia, perennial)

Redo: flower(F)

Match: flower(daisy) with daisy = F = X

Goal: type(daisy, perennial)

Match: type(daisy, perennial)

Match: flower(daisy)

Match: perennial\_garden(X) with X = daisy

Success with X = daisy

2a. ?- south\_of(charleston, cairo)

Goal: south\_of(charleston, cairo)

Match: south\_of(C1, C2) with C1 = charleston, C2 = cairo

Goal: location(charleston, La1, Lo1)

Match: location(charleston, 33, 80) with La1 = 33, Lo1 = 80

Goal: location(cairo, La2, Lo2)

Match: location(cairo, 30, 30) with La2 = 30, Lo2 = 30

Goal: 33>30

Success, true south\_of(charelston, cairo)

2b. ?- south\_of(X, oslo)

Goal: south\_of(X, oslo)

Match: south\_of(C1, C2) with C1 = X = \_12 , C2 = oslo

Goal: location(\_12, La1, Lo1)

Match: location(new\_york, 41, 74) with \_12 = new\_york, La1 = 41, Lo1 = 74

Goal: location(oslo, La2, Lo2)

Match: location(oslo, 60, 11) with La2 = 60, Lo2 = 11

Goal: 41>60

Fail: 41> 60

Redo: location(\_12, La1, Lo1)

Match: location(chicago, 42, 88) with \_12 = chicago, La1 = 42, Lo1 = 88

Goal: location(oslo, La2, Lo2)

Match: location(oslo, 60, 11) with La2 = 60, Lo2 = 11

Goal: 42>60

Fail: 42> 60

Redo: location(\_12, La1, Lo1)

Match: location(tokyo, 35, 140) with \_12 = tokyo, La1 = 35, Lo1 = 140

Goal: location(oslo, La2, Lo2)

Match: location(oslo, 60, 11) with La2 = 60, Lo2 = 11

Goal: 35>60

Fail: 35> 60

Redo: location(\_12, La1, Lo1)

Match: location(oslo, 60, 11) with \_12 = oslo, La1 = 60, Lo1 = 11

Goal: location(oslo, La2, Lo2)

Match: location(oslo, 60, 11) with La2 = 60, Lo2 = 11

Goal: 60>60

Fail: 60> 60

Redo: location(\_12, La1, Lo1)

Match: location(quito, 0, 80) with \_12 = quito, La1 = 0, Lo1 = 80

Goal: location(oslo, La2, Lo2)

Match: location(oslo, 60, 11) with La2 = 60, Lo2 = 11

Goal: 0>60

Fail: 0> 60

Redo: location(\_12, La1, Lo1)

Match: location(charleston, 33, 80) with \_12 = charleston, La1 = 33, Lo1 = 80

Goal: location(oslo, La2, Lo2)

Match: location(oslo, 60, 11) with La2 = 60, Lo2 = 11

Goal: 33>60

Fail: 33> 60

Redo: location(\_12, La1, Lo1)

Match: location(cairo, 30, 30) with \_12 = cairo, La1 = 30, Lo1 = 30

Goal: location(oslo, La2, Lo2)

Match: location(oslo, 60, 11) with La2 = 60, Lo2 = 11

Goal: 30>60

Fail: 30> 60

Fail: south\_of(X, oslo)

2c. ?-south\_of(X, Y).

Goal: south\_of(X, Y)

Match: south\_of(C1, C2) with C1 = X, C2 = Y

Goal: location(C1, La1, Lo1)

Match: location(new\_york, 41, 74) with C1 = new\_york, La1 = 41, Lo1 = 74

Goal: location(C2, La2, Lo2)

Match: location(new\_york, 41, 72) with C2 = new\_york, La2 = 41, Lo2 = 74

Goal: 41>41

Fail: 41>41

Redo: location(C2, La2, Lo2)

Match: location(chicago, 42, 88) with C2 = chicago, La2 = 42, Lo2 = 88

Goal: 41>42

Fail: 41>42

Redo: location(C2, La2, Lo2)

Match: location(tokyo, 35, 140) with C2 = tokyo, La2 = 35, Lo2 = 140

Goal: 41> 35

Success

south\_of(X,Y) with X = new\_york, Y=tokyo