### EECS498-003 - Lab 8

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#### Administrivia

- ▶ Problem Set 3 due Monday, October 20
- Start looking for Project 1 partners!
- ▶ Midterm set for Thursday, October 23, 6-8pm, DOW1014
  - One double-sided cheat-sheet at 10pt
  - Covers up to Chapter 4, no distributed systems
- Going over Practice Exam F24 in my Office Hours on Monday
- ► Today: A few reminders + PS3/Exam Office Hours

#### True or False:

► The following verifies:

```
lemma ContrivedLemma(x: nat, y: nat)
    requires x <= y
    ensures
    && y == x + 1 <==> y - x == 1
    && y <= x <==> x == y
{}
```

Consider a crawler, starting at (3,0), that moves north every second.

True or False:

We can write a state machine as typical of this course that models this crawler.

Consider a crawler, starting at (3,0), that can move north. There is a dangerous hole at the origin of radius 2.

Suppose Dafny forgets that the crawler starts at (3,0).

#### True or False:

- ▶ Dafny can prove that if the crawler is not in the hole, then after a move, the crawler is not in the hole.
- ▶ Dafny can prove that if the crawler is at *x*-coordinate 3, then after a move, the crawler is at *x*-coordinate 3.

#### True or False:

- Ghost functions and predicates can be used in real functions and predicates
- ► Real functions and predicates can be used in ghost functions and predicates