CS 4501/6501: In-class Code Defenders
Mutation Testing

16-Nov-2017

Names:

Purpose: Understand the concept of mutation testing
Instruction: This is an **in-class paired exercise**. Follow the instructions below to play *Code Defenders*.

Code Defenders allows users to learn mutation as a game. *Attackers* create mutants in a Java class, and *defenders* design JUnit tests to kill the mutants. Defenders score by killing mutants, and attackers score by creating mutants defenders cannot kill.

A *duel* game is between two players, and a *battleground* is multiplayer. In duels, one player creates the game and the other joins. In battlegrounds, the instructor creates a game and functions as an observer. Other players can join as either defender (creating tests) or attacker (creating mutants).

1. Create an account (you will need an email address)
2. You can play a duel game with one partner, or join the class battleground that the instructor will create.
3. Use the Java class *cal.java*, which should be already uploaded (it's okay to use another Java class if you wish)
4. Game levels should be **hard**
5. Games should be at least **three rounds**

Defenders can claim a mutant is equivalent by clicking the "*Claim Equivalent*" button. The attacker then either has to agree (giving the point to the defender) or prove the mutant is not equivalent by designing a test to kill the mutant.

If you are an "attacker," write down

- the Java class you mutated
- the number of mutants you created
- the number of your mutants that are live, killed, or equivalent

If you are a "defender," write down

- the Java class you created tests for
- the number of tests you wrote
- the number of mutants your tests detected/killed