ECE 651
Lecture 5: Testing
Notes Outline

- Testing review: what do you remember about testing?
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  - Black box testing:
  - Whitebox testing:
- Think,Pair, Share: how do you make good black box test cases?
- Equivalence Partitioning
- Boundary Value Analysis (BVA)

- Equivalence Classes Example:

```
boolean isLegalNumberOfPlayers(int team1, int team2) {
 if (team1 < 0 || team2 < 0) {
   return false;
 }
 if (team1 != team2) {
    return false;
 }
 if (team1 > 15 || team2 > 15) {
    return false;
 }
 if (isPrime(team1) || isPrime(team2) {
    return false;
 }
 if (isPerfectSquare(team1 + team2)) {
   return false;
 }
 return true;

}
```

- Is This a Good Test Case?

  - 1+1*1

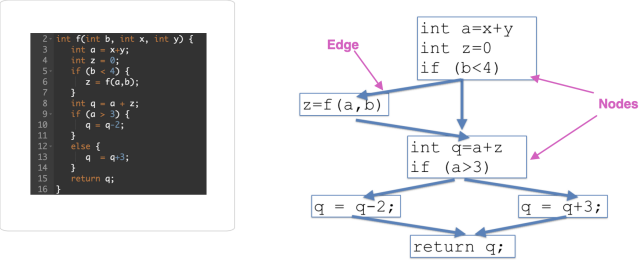
  - 2+3*4

- Spatial Conceptualization of test cases

- Black box advantages and disadvantages

- White box review:

- Control Flow Graph:



- What level of coverage do you need?

- Naive use of coverage

- Think, Pair, Share: How can we test our test cases?

- Mutation Testing:

- Limitations of Mutation Testing:

- Combining Blackbox, Whitebox, and mutation: