

## Black & White Box Testing

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- Review of testing concepts
  - Goal of testing?
  - What is black box testing?
    - What do you think about when developing black box test cases?
  - What is white box testing?
    - What do you think about when developing white box test cases?
  - Similarities and differences:
    - Writing test code
    - Documenting test cases
  - What does a test case look like?

## White Box Testing

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- Think about white box testing as you develop your solution
  - You may discover logic errors as you develop white box test cases (or test code)
- Guidelines
  - Ensure each statement is executed at least once
    - When you have complex selection logic, this can dramatically increase the number of test cases needed
  - Ensure all boundaries of each simple condition are tested
    - i.e., this requires (at least) two distinct test cases
    - When you have complex Boolean expressions, this can dramatically increase the number of test cases needed

## Sample Problem Statement

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- Problem statement
  - Display weekly pay for each salaried and hourly employee
    - Input file format

```
last-name\tfirst-name\tannual-salary\thourly-rate\thours-worked
```
    - Salaried employee: annual-salary
    - Hourly employee: hourly-rate; hours-worked
    - Hourly employee: overtime is paid at time-and-a-half
- Candidate classes?
- Candidate members for a class?
  - Instance variables (aka: attributes)?
  - Methods (aka: operations)?
- Black box test cases?
- Develop a little sample code
- White box test cases for sample code?