

Tutorial 1

Effective Testing in Practice

Topics

- AutoTest and Code Management
- JavaScript Types and Variables
- Testing in Practice

AutoTest & Code Management

- How to get your grade
- Why does AutoTest keep posting comments on my commits and how do I get rid of them?

JS Types and Variables

- JavaScript types

- Boolean, Number, String, Object, **Null**, **Undefined**, Symbol
- Arrays **are** Objects

- Runtime type checking

- Use the typeof operator
- To determine if an object is an array, use Array.isArray()

- Many ways to declare a variable

- var, let, const

Activity 1: Black Box Testing

```
export interface IPatch {  
    where: (row: object) => boolean;  
    updateTo: object;  
}  
  
patchDataset(id: string, patch: IPatch): InsightResponse {  
    // update the fields of a row with the values in patch  
}
```

- Example

Activity 1: Black Box Testing

```
export interface IPatch {  
    where: (row: object) => boolean;  
    updateTo: object;  
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patchDataset(id: string, patch: IPatch): InsightResponse {  
    // update the fields of a row with the values in patch  
}
```

- **Questions:**

- 1) How could this method fail?
- 2) What inputs would you use to test this method?
- 3) How would you check that it worked correctly?
- 4) What tests would convince that it performs correctly?

Activity 2: White Box Testing

- `git clone https://github.ugrad.cs.ubc.ca/CPSC310-2017W-T2/tutorial1.git`
- Open in WebStorm
- Walk through code
- Walk through test
- **Activity** – Implement the test(s) you came up with before using the BDD expect-style syntax
 - How do you know your tests are correct?

Activity 3: Coverage

- Generating a coverage report
 - From the command line
 - In WebStorm
- Understanding the report
- **Activity:** Write one more test that increases your coverage to 100%.

Activity 4: Debugging

- Debugging
 - lets you inspect your program while it is running
 - can help you understand why tests are failing
- **Activity:** In `patchDataset` track the iterations on the loop using the debugger. What are the values of the variables?