Obfuscation: Week Two

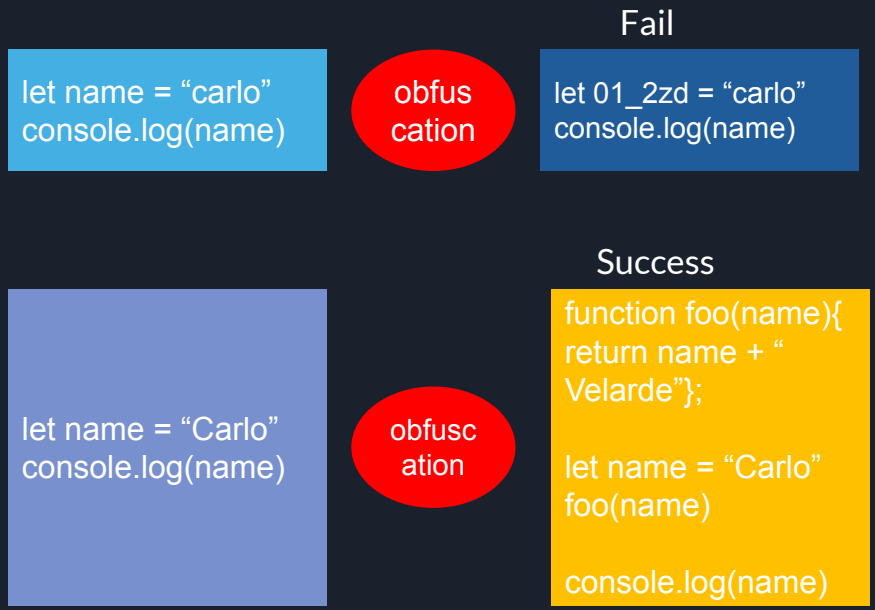
Caleb Parten and Carlo Velarde

Overview

- Testing different obfuscation methods
- Analysis
- New prompting

Testing Obfuscation Methods

- Dead code obfuscation
- Naming obfuscation
- What did we test for?
  - Equality
  - Correct implementation



Testing Parameters

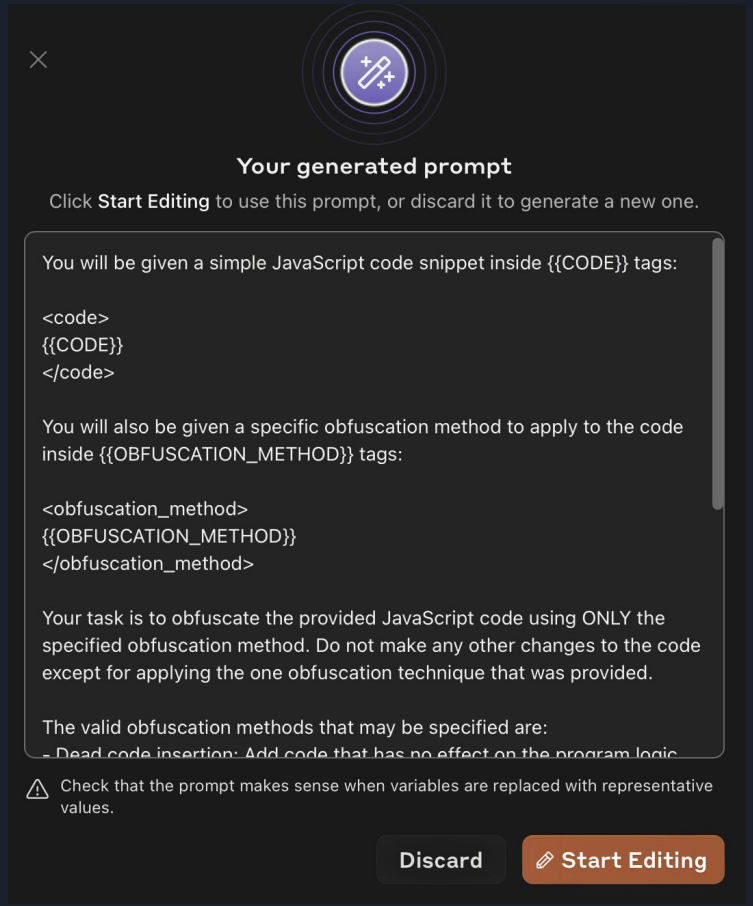
- Equality
  - Should compile and output
  - Output must be direct match
- Correct implementation
  - Must use specified obfuscation method
  - Mixing obfuscation methods == False
  - Output can be off
- Successful obfuscation
  - True for equality AND True for implementation

Completed Table

obfuscate output	obfuscation type	equal	implemented obfuscation
Area of circle: 78.53981633974483	Dead Code Obfuscation	FALSE	TRUE
10 kilometers is 6.21371 miles	Dead Code Obfuscation	TRUE	TRUE
Error: Command '['node', '-e', 'const stri	Dead Code Obfuscation	FALSE	TRUE
Error: Command '['node', '-e', 'const str	Dead Code Obfuscation	FALSE	TRUE
Error: Command '['node', '-e', 'const str	Dead Code Obfuscation	FALSE	FALSE
Square root: 4	Dead Code Obfuscation	FALSE	FALSE
Error: Command '['node', '-e', 'const per	Dead Code Obfuscation	FALSE	TRUE
Current date and time: Tue Jun 11 2024	Dead Code Obfuscation	FALSE	TRUE
Maximum: 10	Dead Code Obfuscation	TRUE	FALSE
10 kilometers is 6.21371 miles	Dead Code Obfuscation	TRUE	TRUE
Hypotenuse: 5	Dead Code Obfuscation	TRUE	TRUE
Fixed number: 3.14	Dead Code Obfuscation	TRUE	TRUE
First character: J	Dead Code Obfuscation	TRUE	TRUE
Perimeter of rectangle: 30	Dead Code Obfuscation	TRUE	TRUE

Anthropic Prompting

- Anthropic is by the company of Claude 3
- Allows for advanced prompting
- Gives LLMs best chance of success



Analysis

Out of 373 JavaScript snippets:

- Correct implementation:
  - 248 passed and 125 failed.
- Correct output:
  - 221 passed and 152 failed.
- Correct output & implementation:
  - 155 passed and 218 failed.
- Correct output but failed implementation:
  - 66 passed
- Wrong output but correct implementation:
  - 93 passed

Findings

- Output and implementation
  - More failed
- More accuracy with naming obfuscation
- Occasionally mixed obfuscation methods