

Code Smells and Refactoring Solutions

1. Magic Numbers

- **Location:** Found in the tetris main file on Dec. 2
- **Refactoring:** Replace magic numbers (e.g., 4, 10, 20, 25, 100, 400) with named constants.

2. Switch Statements

- **Location:** Found in `def main()` on Dec. 2
- **Refactoring:** Used the Extract and Move refactoring methods.

3. Long Parameters

- **Location:** Found in [Tetris] on Dec. 2
- **Refactoring:** Replace Parameter with Method Call

4. Duplicate Code

- **Location:** Found in [Tetris] on Dec 2
- **Refactoring:** Remove duplicate instances of `self.dropping_counter = 0`.

5. Global Variables

- **Location:** Found with Colors, and Figures before [Tetris] on Dec 2
- **Refactoring:** Encapsulation.

6. Large Class

- **Location:** Found in [speed increase], [piece preview], and [piece saving].
- **Refactoring:** Split up code into individual classes which are then imported and used in the root game class. [Extract Class].

7. Dead Code

- **Location:** Found in [speed increase] and [piece saving].
- **Refactoring:** Cleaned up code after feature implementation to reduce unneeded methods and functions. [Remove Parameter/Collapse Hierarchy].

8. Feature Envy

- **Location:** Found in [speed increase], [piece saving], and [piece preview].
- **Refactoring:** Created objects to store data and moved methods out of classes when they were not needed in the original class. [Move Method/Extract Method].

9. Middle Man

- **Location:** Found in [speed increase].
- **Refactoring:** Created direct links between classes and game-loop. [Remove Middleman].

10. Message Chains

- **Location:** Found in [speed increase] and [piece saving].
- **Refactoring:** Created a new method to delegate calls to other objects. [Hide Delegate].