**Smell Detected**

**Name: Long method, switch method, duplicate code**

**Location:** File Management FileHandler.py – def validate(self, data) > Line 82 to line 162

**Problem:**

1. Long method that took over 100 lines. Hard to read and maintain. Exceed PEP8 standard
2. If-Else loop nest – messy and duplicate

**Solution**

Divide each if statement into individual def validate function

**Smell Detected**

**Name:** **Useless Method**

**Location:** Interpreter.py – do\_help\_X function > Line 228 – Line 303

**Problem:**

1. Does not require for display help since can be done in their respective function with the “” “”” comment

**Solution:**

Remove the function and add help document to their respective function in the comment

**Smell Detected**

**Name: Method added instead of using .append(sql function) repetitively**

**Location:** Graph.py – Line 86 – Line 102

**Problem**:

1. Repetitive code
2. Long and can compress into one

**Solution**

Create individual function and can call the function throughout the file

**Smell Detected**

**Name: Long if -else if statement**

**Location:** Graph.py – Line 117 to line 169

**Problem**

1. Long repetitive code
2. Bad and rigid formatting for graph

**Solution**

1. Create function to format pie graph or bar graph