**AUTOMATED REFACTORING TOOL**

Scoping Document

Luke

Gilbert



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# PROJECT DEFINITION

## Project Description

Create a VSCode extension which is used to automate the refactoring process of Python Code. The extension should use a rule-based approach to detection and refactoring of code smells. This will be achieved through using the Python’s in-built ast module to represent code in an abstract manner to allow for syntactic pattern matching to be implemented. The extension should include the following components:

* Automatic Detection of Code Smells
* Refactoring Suggestions
* Code Quality Metrics
* Code Change Previews

The tool should identify the following code smells:

* Non-idiomatic Python Code
* Long Method (functions > 100 lines, )
* Large Class (LoC > 200, NoA + NoM > 40)
* Duplicate Code
* Dead Code
* Feature Envy
* Inappropriate Intimacy
* Conditional Complexity
* Callback Hell
* Lazy Element
* Magic Numbers
* Fallacious Comments
* Type Embedded in Name
* Binary Operator in Name

## Minimum Viable Product

### Functional Requirements

The project should consider the following functional requirements:

* Works with open-source Python code
* User interface
* Code change preview and metrics
* Preservation of code functionality pre and post refactor

### Non-functional Requirements

* Clear explanations of code refactoring
* User friendly interface

## Non-Essentials (Nice to Haves)

N/A

# PROJECT PROGRAMME

# WORKFLOWS

# TECHNOLOGIES

## Frontend

## Backend

## Database

## Security

## Testing