Name: ADHIVEL V

Register No: 2213141033052

Class & Department: IIIrd - BCA (Computer Application)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**-**

**Abstract**

This project introduces a comprehensive tool for analysing and evaluating programming code, focusing on metrics that provide insights into its structure, complexity, and quality. The tool categorizes its analysis into three key areas: **Overall Code Structure**, **Code Complexity**, and **Code Quality Metrics**, offering developers an intuitive way to assess and enhance their code.

1. **Overall Code Structure**: Assesses total lines, code lines, comment lines, and blank lines to provide a clear view of organization and readability.
2. **Code Complexity**: Examines cyclomatic complexity, maximum nesting depth, and counts of functions and classes, offering insights into logical flow and architectural depth.
3. **Code Quality Metrics**: Evaluates average line length, long lines, and code duplication scores, essential for ensuring a clean and efficient codebase.

This tool is designed to support developers, code reviewers, and project managers by highlighting inefficiencies, redundancies, and structural patterns. It enables users to make data-driven decisions to optimize code quality and maintainability. With its user-friendly interface and detailed reporting, this tool is ideal for projects of varying sizes and complexities, ensuring adherence to coding standards and promoting best practices in software development.