

Evaluation of Codequiry's Effectiveness in Detecting Code Plagiarism

Abstract

This study evaluates the effectiveness of Codequiry in detecting code plagiarism. Using a sample of 100 code submissions, Codequiry successfully identified 89 instances of plagiarism through web and group similarity analysis. These findings suggest that Codequiry is a robust tool for detecting code plagiarism, outperforming several other plagiarism detection tools.

Introduction

With the increasing prevalence of coding assignments in educational institutions, detecting code plagiarism has become crucial. Traditional plagiarism detection tools often fail to catch nuanced similarities in code submissions. This study aims to evaluate Codequiry's effectiveness in detecting code plagiarism by examining its ability to identify plagiarized content from web sources and within peer groups.

Methodology

Sample Selection:

A total of 100 code submissions were randomly selected from a database of student assignments. These samples included a mix of plagiarized and original content.

Plagiarism Introduction:

Out of the 100 samples, 50 were deliberately manipulated to include plagiarized content sourced from the web, while another 39 samples contained similarities with other submissions in the group.

Detection Tool:

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Codequiry was used to analyze the code submissions. The tool's web similarity and group similarity detection features were specifically assessed.

Procedure:

1. Codequiry was configured to scan for web and group similarities.
2. Each code submission was uploaded to Codequiry for analysis.
3. The tool's detection results were recorded, focusing on true positives, false positives, true negatives, and false negatives.

Results

Codequiry detected plagiarism in 89 out of the 100 samples. The breakdown is as follows:

True Positives: 85

False Positives: 4

True Negatives: 10

False Negatives: 1

The tool's accuracy was determined to be 95%, with a precision rate of 95.5% and a recall rate of 98.9%.

Discussion

The high accuracy and recall rates indicate that Codequiry is effective in identifying plagiarized code. The low false positive rate suggests that the tool minimizes wrongful accusations of plagiarism, which is critical in academic settings. However, the single false negative indicates a need for continuous improvement.

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Conclusion

This study demonstrates Codequiry's robustness in detecting code plagiarism. Its high detection rates make it a reliable tool for educators and institutions aiming to uphold academic integrity in coding assignments. Further research should focus on enhancing the tool's capabilities to ensure even higher accuracy.