

Software Requirements Specification for Software Engineering: subtitle describing software

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Revision History

Date	Version	Notes
Date 1	1.0	Notes
Date 2	1.1	Notes

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5 Relevant Facts And Assumptions

5.1 Relevant Facts

- The current standard for code plagiarism detection, MOSS, primarily relies on token matching and syntax-based comparison. This method lacks the ability to detect deeper semantic similarities in code.
- NLP techniques have advanced significantly in recent years, enabling more accurate natural language understanding. These techniques can be adapted to understand the structure and semantics of code, which could enhance plagiarism detection systems.
- There is a growing need for a plagiarism detection system that accounts for sophisticated plagiarism techniques, such as variable renaming, code restructuring, and adding non-functional code.
- Academic institutions are increasingly concerned with the fairness and accuracy of plagiarism detection systems to avoid penalizing students unfairly, especially with the rising prevalence of online and remote learning.

5.2 Business Rules

- The system must ensure compliance with data protection regulations, such as GDPR, by securing student data, anonymizing it when possible, and minimizing unnecessary data retention.

- The similarity threshold for flagging plagiarism should be customizable by the institution or professor, allowing flexibility based on course policies.
- False positives (e.g., common code patterns) should be minimized, with options for professors to override flagged instances and manually validate the results.
- The system must be scalable to accommodate large datasets and multiple users submitting code for comparison at the same time.

5.3 Assumptions

- It is assumed that the academic institutions adopting this system have clear plagiarism policies and can provide a threshold score that reflects their definitions of plagiarism.
- It is assumed that the code samples provided for comparison are original and not previously processed by other plagiarism detection systems, ensuring that the results reflect real-time analysis.
- It is assumed that professors and administrators will review flagged cases manually to confirm plagiarism before taking any disciplinary action.
- It is assumed that students will not have access to the internal workings of the plagiarism detection algorithm, preventing them from finding potential loopholes to bypass detection.
- Software will be used only in Canada, and the legal and ethical considerations of these countries will be taken into account during development.

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Appendix — Reflection

The information in this section will be used to evaluate the team members on the graduate attribute of Lifelong Learning. Please answer the following questions:

1. What knowledge and skills will the team collectively need to acquire to successfully complete this capstone project? Examples of possible knowledge to acquire include domain specific knowledge from the domain of your application, or software engineering knowledge, mechatronics knowledge or computer science knowledge. Skills may be related to technology, or writing, or presentation, or team management, etc. You should look to identify at least one item for each team member.
2. For each of the knowledge areas and skills identified in the previous question, what are at least two approaches to acquiring the knowledge or mastering the skill? Of the identified approaches, which will each team member pursue, and why did they make this choice?