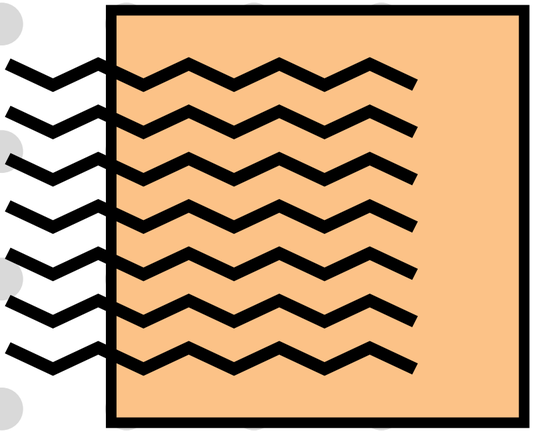
GROUP NO. 3



CASTAWAY CORNER USING ML: PLAGIARISM DETECTION

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OUTLINE

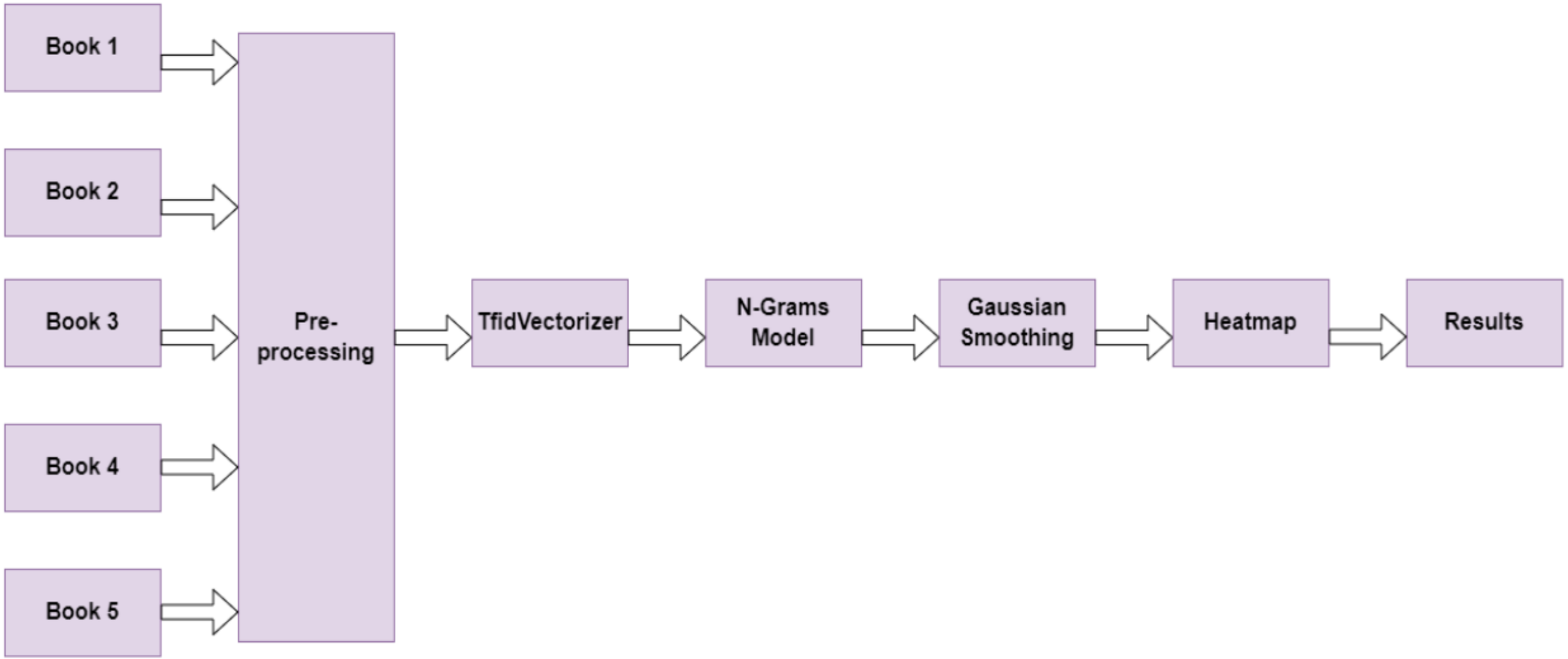
INTRODUCTION

- **Plagiarism** is an increasingly common and rising problem in numerous sectors when it comes to authoring books or documents.
- Fraudsters employ a variety of plagiarism strategies, ranging from **simple synonym substitution and sentence structure alteration** to a more complicated process combining many forms of transformation.
- Our project provides an instrument for authors and writers to **determine** if their material is original or plagiarised.

PROBLEM STATEMENT

- Keeping **precise** track of every language and remark may be a real pain at times.
- As a result, the story appears uninteresting and unfinished, and the author loses out on a potentially **lucrative opportunity**.
- The abuse of sources is a problem associated with plagiarism. Writers should be careful not to modify or misrepresent the original text material while utilizing and crediting **sources' ideas** in their essays.

METHODOLOGY



METHODOLOGY

- The **dataset** contains 4 different books written by different authors.
- We will then convert those dataset into **txt format** and will feed into the code or model which we have trained.
- After applying the vectorize and similarity algorithms in the dataset, we get back results in float format which if we multiply by 100 we get it into the percentage the dataset has been **plagiarized**.

IMPLEMENTATION

The algorithm we are using are:

- ***Vector embeddings*** are central to many NLP (Natural Language Processing), recommendation, and search algorithms.
- ***N-gram Language Model:*** An N-gram language model scores words based on the preceding window of context. For plagiarism, however, the emphasis is on copied sequences of words, not on similarities at an abstract level. A paraphrasing should not set off an alarm, but a direct copying should.
- ***Visualization:*** We can represent a book as a heatmap image where each pixel corresponds to the score of one word. This allows us to quickly gauge if plagiarism is likely, and which parts of a text were most likely to have been plagiarized.

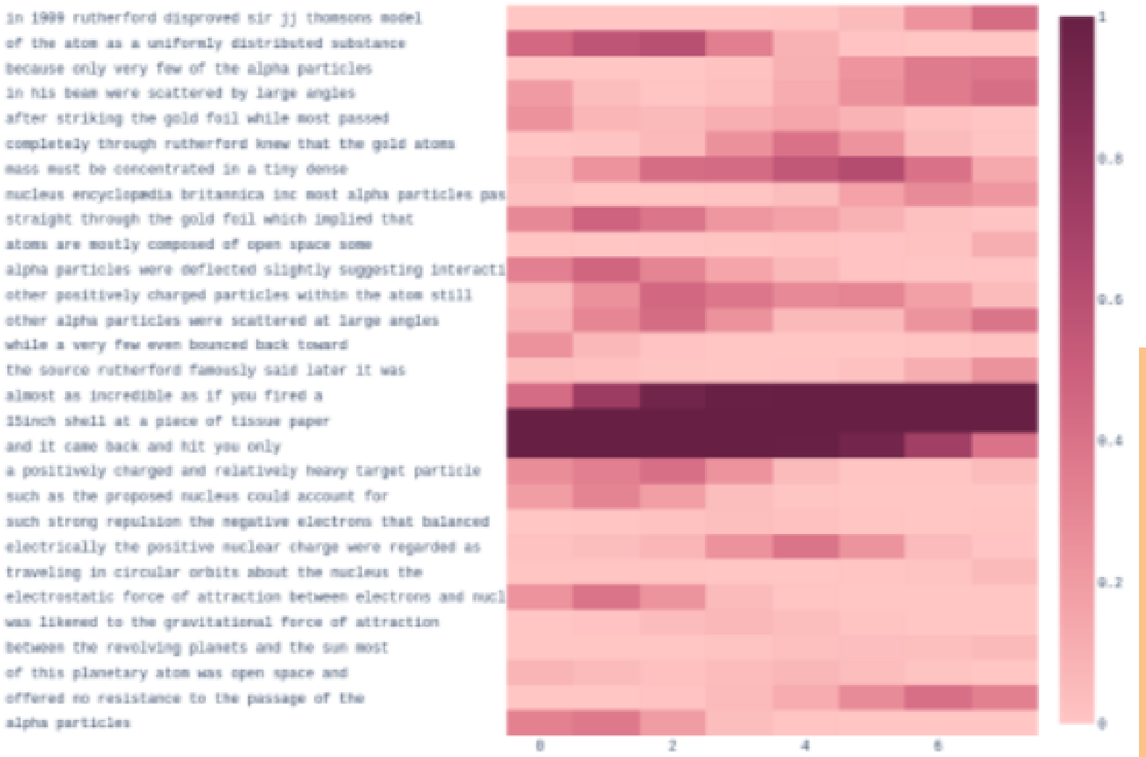
PERFORMANCE METRICS

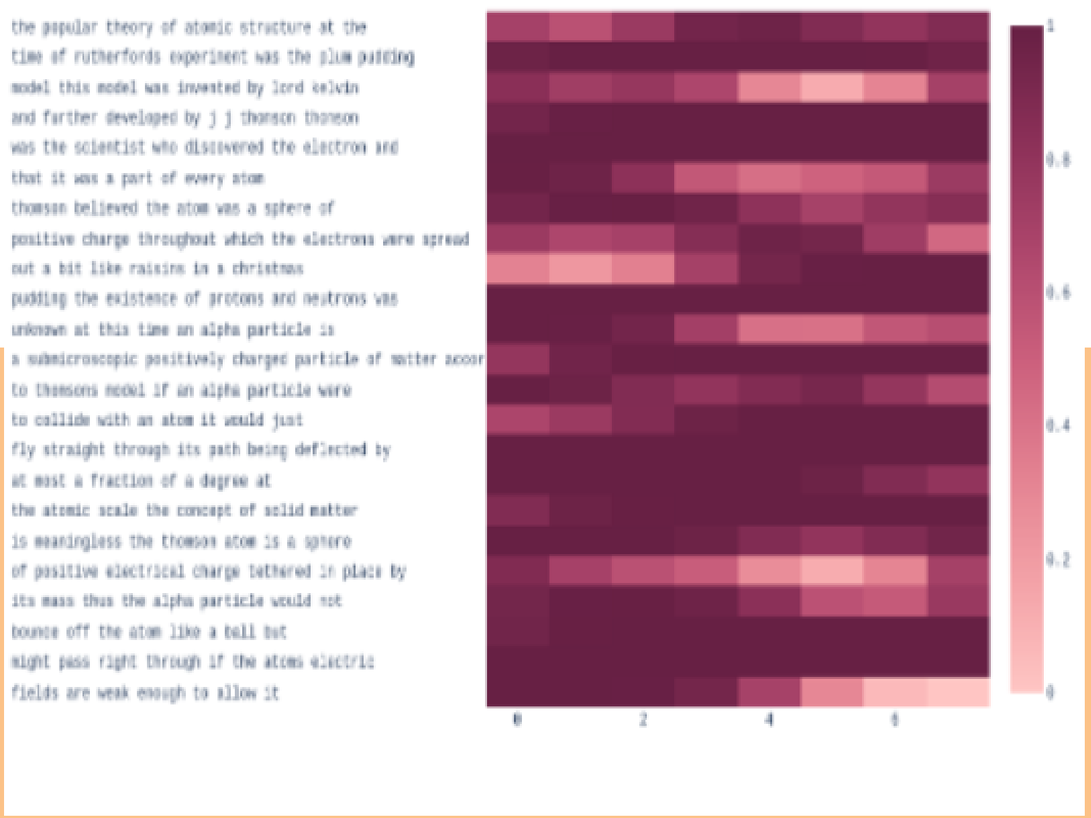
- The accuracy of our Plagiarism model is 89 % calculated using (TP+TN)/(TP+FP+TN+FN).
- Our model has a precision percentage of 97 % calculated using TP/(TP+FP).
- The recall percentage is 54 % calculated using TP/(TP+FN).

RESULT & DISCUSSIONS

- As the input for the task of **plagiarism detection** is passage-level text, the sentence-level paraphrase recognition system has been modified to handle passages.
- The source and suspicious passages are split into sentences. In order to determine the **closest matching source sentence** for the suspicious passage sentences, the extent of unigram overlap is computed between the sentences in both the passages.
- For every sentence in the suspicious passage, the source sentence, which has the **highest word overlap**, is paired with it.

RESULT & DISCUSSIONS





CONCLUSION

- We have developed a new system for the detection of plagiarism based on machine learning methods.
- It's interest is the extraction of characteristics without losing the sense of the document by using vector word embedding technique.
- The proposed system has the ability to detect not only that there is plagiarism but also the probabilities of the existence of each type of plagiarism.
- In future, we plan to further develop our website and add this detection system on our website like buttons, and add a grammatical checker and error checker to increase our resources to a greater extent, in order to help authors and developers to the best of our abilities.

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THANK YOU