

PLAGIARISM DETECTION AND REPORTING SYSTEM

**A proposal for the COEP Technological University Hackathon by
Team V6**

**Abhijeet Jadhav – 612203071 Aaryan Tokekar – 612211001 Kapil Tangsali – 612203177
Yash Pawar – 612203142 Soham Vaze – 612203187 Tanmayi Sulakhe - 612203173**



COEP Technological University
A Unitary Public University of Govt. of Maharashtra
Formerly College of Engineering Pune

PLAGIARISM DETECTION AND REPORTING SYSTEM (PDRS)

Approach with respect to the Problem Statement

- PDRS is designed to detect plagiarism in a large volume of files submitted to it on top of a pre-existing database
- Capable of cross-referencing a batch of files within themselves for plagiarism but also references them against several online sources
- It provides a comprehensive report to a user which is customizable and save-able for future references



COEP Technological University

A Unitary Public University of Govt. of Maharashtra

Formerly College of Engineering Pune

PLAGIARISM DETECTION AND REPORTING SYSTEM (PDRS)

Tech Stack Overview

- Flask: Lightweight web framework for building scalable web applications.
- SQLAlchemy: Python SQL toolkit and Object-Relational Mapping (ORM) library for database management.
- HTML-CSS: Markup and styling languages for creating structured and visually appealing web pages.
- JavaScript: Versatile scripting language for adding interactivity and dynamic content to web applications.
- Python: High-level programming language known for its simplicity and versatility, used for backend logic and effective file processing tasks
- Selenium: A robust automated testing framework, augments our tech stack, enabling us to bypass OpenAI API



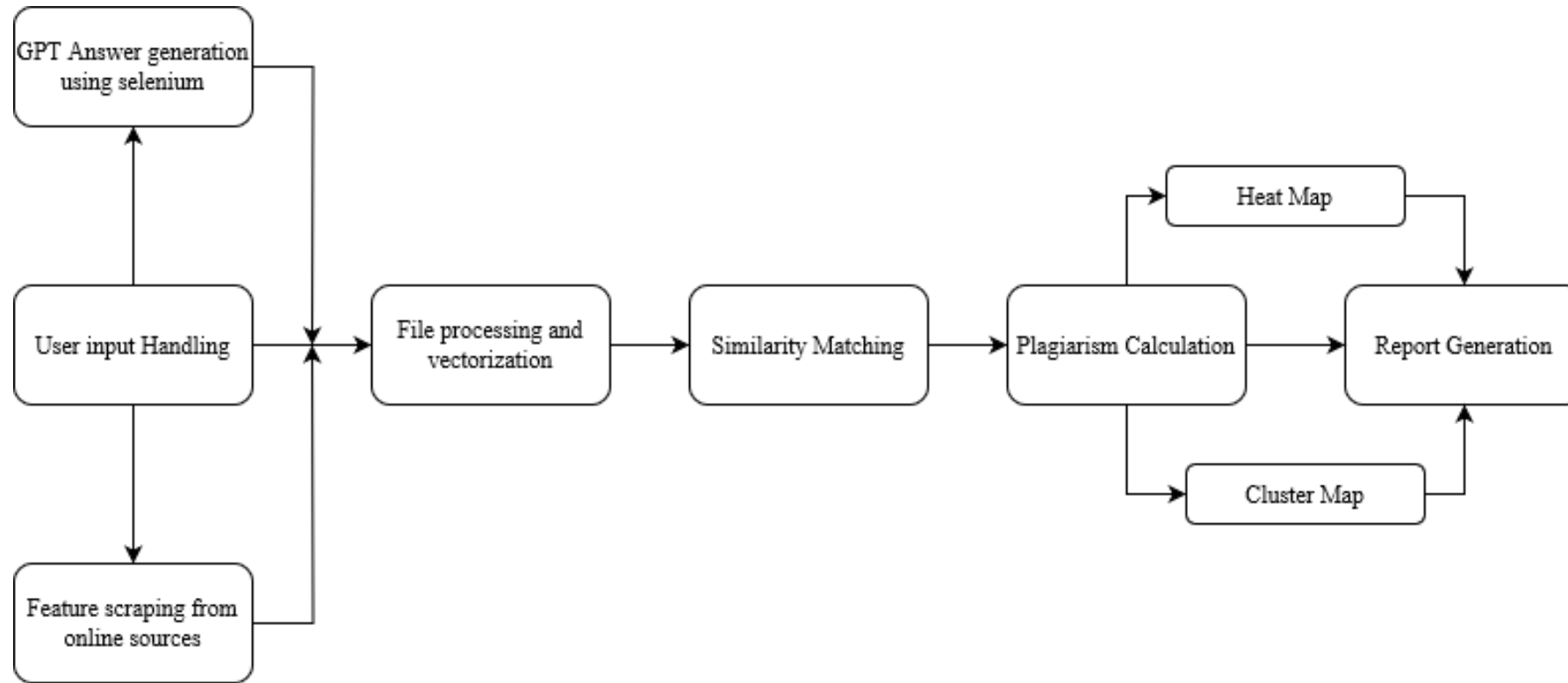
COEP Technological University

A Unitary Public University of Govt. of Maharashtra

Formerly College of Engineering Pune

PLAGIARISM DETECTION AND REPORTING SYSTEM (PDRS)

Implementation and Algorithm Design



PLAGIARISM DETECTION AND REPORTING SYSTEM (PDRS)

Algorithm for better Plagiarism Calculation

- Our algorithm is a self developed algorithm largely based on Cosine Similarity
- It improves upon the effectiveness of calculating Cosine Similarity between two vectors by including multiple words (bigrams) for a single value in the Term Frequency – Inverse Document Frequency calculation
- TF-IDF Vectorization helps us to understand the relevance of a document's feature words relative to the whole corpus
- By including bigrams we can identify semantic relationships between words and identify important phrases in documents

$$w_{x,y} = tf_{x,y} \times \log \left(\frac{N}{df_x} \right)$$

TF-IDF

Term x within document y

$tf_{x,y}$ = frequency of x in y

df_x = number of documents containing x

N = total number of documents



COEP Technological University

A Unitary Public University of Govt. of Maharashtra

Formerly College of Engineering Pune

PLAGIARISM DETECTION AND REPORTING SYSTEM (PDRS)

UI Design and Functionality

Plagiarism Detection



Quick and easy plagiarism detection for a wide range of programming languages.

Browse...

No file selected.

Analysis Name

Describe the assignment in short

Programming Language :

Subjective



Detailed [Heat Map](#) [Cluster](#) [Top Words](#)

#	Submission 1	Submission 2	<input type="checkbox"/> Percentage	DIFF
1	rust1.rs	rust2.rs	54.69	Compare
2	gfg1.java	gfg2.java	36.1	Compare
3	gfg3.java	gfg4.txt	29.79	Compare
4	bulbs.py	bulbs2.py	21.55	Compare
5	gfg2.java	gfg3.java	16.07	Compare
6	gfg1.java	gfg3.java	13.1	Compare



COEP Technological University
A Unitary Public University of Govt. of Maharashtra
Formerly College of Engineering Pune

PLAGIARISM DETECTION AND REPORTING SYSTEM (PDRS)

UI Design and Functionality

DetailedHeat MapCluster

rust1.rs

rust2.rs

```
// Inserting in HashMap Rust
use std::collections::HashMap;

fn main() {

// initialize the HashMap
// mut means we can reassign to something else
let mut gfg=HashMap::new();

// inserting records
gfg.insert("Data Structures","90");
gfg.insert("Algorithms","99");
gfg.insert("Interview Preparations","100");
gfg.insert("FAANG","97");
gfg.insert("CP","99");

// for printing all the records "{:?}" this is must
println!("{:?}.gfg");

// Rust Program to Iterating over HashMap
// import HashMap
use std::collections::HashMap;
fn main() {

// create HashMap
let mut gfg=HashMap::new();

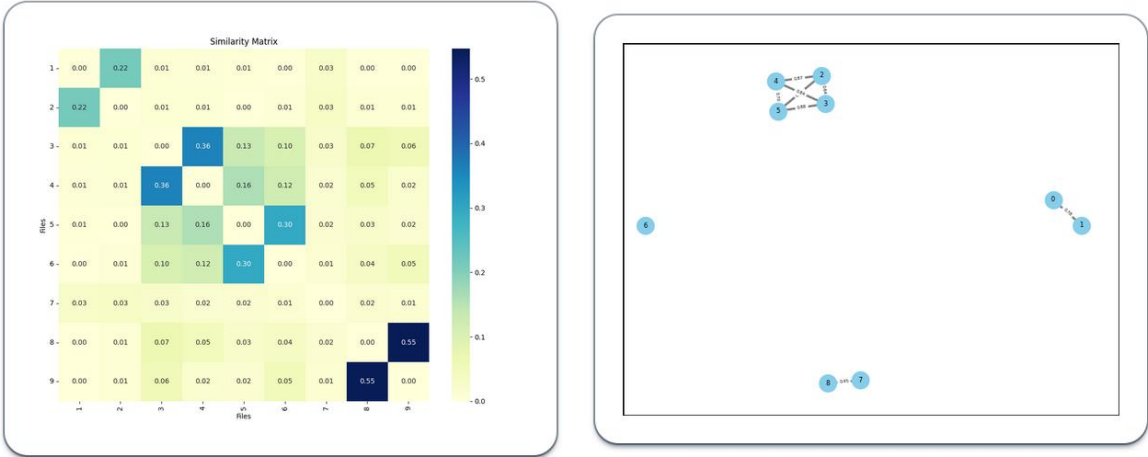
// inserting over
gfg.insert("Data Structures","90");
gfg.insert("Algorithms","99");
gfg.insert("Interview Preparations","100");
gfg.insert("FAANG","97");
gfg.insert("CP","99");

// Iterating using iter() method on gfg
for (key, val) in gfg.iter() {
```

Top Plagiarism Flagged : 54.69 %

Generate Report

View Detailed Report



#	Submission 1	Submission 2	Percentage	DIFF
1	rust1.rs	rust2.rs	54.69	Compare
2	gfg1.java	gfg2.java	36.1	Compare



COEP Technological University
A Unitary Public University of Govt. of Maharashtra
Formerly College of Engineering Pune

PLAGIARISM DETECTION AND REPORTING SYSTEM (PDRS)

Report Generation

- We have taken major strides to enable easy identification of plagiarism once the corpus has been processed
- Key visual aids are a heatmap correlation matrix, a cluster plot and 1:1 comparison between a pair of documents
- These aids combined with a readily available comprehensive report on the dashboard enable the user to quickly identify and help them make a well informed decision



COEP Technological University

**A Unitary Public University of Govt. of Maharashtra
Formerly College of Engineering Pune**