|  | **Department of Computer Science**  **University of Management and Technology** |
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**Assignment Description File**

| Course Name: | **Software Engineering** | | |
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| Section: | V10 | | |
| Teacher: | **Fasiha Ashraf** | | |
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| Assignment No.: | 2 | Obtained Marks | /50 |
| Project Title | AIWrite Tech: Convert AI-Generated Content to Natural Language | | |

**NOTE: PLAGIARISED ASSIGNMENT EITHER FROM CLASSMATES OR INTERNET WILL BE MARKED STRAIGHT ZERO.NO ASSIGNMENT WILL BE ENTERTAINED AFTER DEADLINE.**

**FOLLOW THE TEMPLATE ATTACHED**

**Assignment Description:**

**Q1:** Give complete introduction about your project introduction should include (project overview, problem statement, customer, affected groups, assumptions, dependencies/external systems, goals)

**Q2:** Mention all the stakeholders of your project

**Q3:** Also tell how they are stakeholders of project

**Q4:** Do domain analysis of your project

**SEE THE TEMPLATE ATTACHED**

# Introduction

## Project Overview

**Problem or Overview Statement:**

AI content is more efficient and powerful than human-written content, but people often question the credibility and authenticity of AI-generated content. It often lacks the style and emotion of human writing, and this causes people to raise concerns about its credibility. Plus, tools like Originality mark it as AI, and this also makes people consider it bad.

**Customer:**

AIWrite Tech’s customers will be bloggers, writers, business and marketing agencies, and academic institutions who want quick and efficiently delivered content that doesn’t get flagged as AI-generated.

**Goals:**

Combine the technology of ChatGPT, Grammarly, and Originality to generate high-quality content that is close to natural language or is highly human-like. Moreover, our goal is to develop an intermediary algorithm that can convert AI-generated content to natural language, and it will convert line by line. Furthermore, we will integrate this system as a WordPress Plugin and Chrome extension so that customers can easily generate content and for the ease of deploying this system.

**System Functions:**

1. Integrating ChatGPT API for content generation.
2. Integrating Grammarly API for grammar, style, and plagiarism checks
3. Integrating Originality API to determine content authenticity and originality after content generation.
4. Develop an intermediary algorithm that processes AI generation content to convert to something close to human or natural language.
5. Design and development of a user-friendly software website interface, WordPress plugin, and Chrome extension

**System Attributes:**

1. User-friendly interface
2. Compatible across different devices and operating systems
3. Cloud-based processing and hosting for scalability and reliability
4. Back-up storage systems for security, etc.

## Problem Statement

The purpose of this project is to develop a software that converts AI-generated content into natural or human-like content, which goes undetected as AI in AI detection tools, thus increasing its credibility and appeal.

## Customer

AIWrite offers a robust content generation platform that combines human creativity with AI algorithms like ChatGPT. Our software enhances content quality, improves efficiency, and ensures consistency. It verifies content originality, enables scalable production, and helps businesses gain a competitive edge. Customer satisfaction, cost optimization, and data-driven insights are key benefits, making AIWrite a valuable asset for efficient and high-quality content creation.

## Affected Groups

* **Content Creators:** Content creators are at the forefront of content generation, using AI tools to assist them in content creation and potentially improving their efficiency and productivity.
* **Editors and Proofreaders:** Editors and proofreaders continue to have a crucial role in reviewing and refining the content created by content creators who use AI tools.
* **Management and Decision Makers:** Management and decision-makers oversee the integration of human-based AI tools into the content creation process.
* **Quality Control Teams:** Quality control teams ensure that the content generated by humans using AI tools meets quality and brand consistency standards.
* **Vendor or Service Providers:** Vendor or service providers supply the human-based AI tools and services, and their role is to support their clients in effectively using these tools.
* **Web Developers:** Web developers need to ensure that AI-generated content integrates seamlessly into websites and online platforms.

## Assumptions

1. The intermediary algorithm will effectively transform the AI-generated content into human-like or natural language.
2. People using this system will have basic knowledge of content generation and deployment tools.
3. Regular updates from ChatGPT, Grammarly, and Originality will be there for integration as they evolve and become better.

## Dependencies/ External Systems

Our project completion depends on the following external systems:

* **ChatGPT API:** For initial content generation
* **Grammarly API:** For grammar, spelling, and plagiarism checks
* **Originality API:** To ensure authentic and natural language content

## Definitions and Acronyms

* **AI (Artificial Intelligence):** Artificial Intelligence, in this context, involves replicating human-like intelligence in machines, especially computer systems, and is employed for content generation.
* **ChatGPT:** ChatGPT is a language model developed by OpenAI. It's a technology used for content generation and conversation.
* **Grammarly:** Grammarly is a popular writing assistant tool that provides grammar, style, and plagiarism checks. It's mentioned as one of the technologies to be integrated.
* **WordPress Plugin:** A WordPress Plugin is software that can be integrated into a WordPress website to enhance and expand its capabilities.
* **API (Application Programming Interface):** APIs establish guidelines for different software programs to communicate and interact seamlessly with each other.
* **Chrome Extension:** A Chrome Extension is a compact software application that enhances and expands the capabilities of the Google Chrome web browser.
* **Intermediary Algorithm:** An intermediary algorithm is a software component that processes AI-generated content to make it more human-like or natural in language.
* **User-friendly Interface:** A user-friendly interface is a design that makes it easy for users to interact with and navigate through the system.
* **Operating Systems:** These are operating systems that oversee both computer hardware and software resources, including Windows, macOS, and Linux.
* **Cloud-based Processing and Hosting:** Cloud-based services involve using remote servers and networks hosted on the Internet to process and store data.
* **Back-up Storage Systems:** These are systems for duplicating and safeguarding data to prevent data loss.
* **Scalability:** Scalability denotes a system or service's capacity to efficiently accommodate an increasing workload, data, or user base.
* **Prototyping Model:** The Prototyping Model is an approach in software development where preliminary versions of a system or software, known as prototypes, are built to better understand user needs and expectations. These prototypes serve as a tangible representation of the system's core functionality.
* **Iterative:** An iterative process involves repeating a sequence of steps or actions multiple times, with each repetition making incremental improvements or refinements based on feedback. In the context of the paragraph, it refers to the cycle of refining the prototype based on feedback.
* **Roadmap:** A roadmap is a visual representation or plan that outlines the steps, milestones, and timelines for a project. In this context, it refers to the plan for subsequent phases of development.

## Reference/ Source Documents

We will consult the following documents while making our software:

* OpenAI’s official ChatGPT documentation
* Grammarly API Integration Guide
* Originality content detection parameters and guidelines

## Goals

In a human-based AI content generation system, the main objectives are to improve content quality, increase efficiency, and maintain a consistent style and message. This system assists content creators by automating tasks and offering AI-powered suggestions, making content creation faster and more efficient. It also ensures that content is original and not duplicated to maintain uniqueness.

Scaling content production to meet rising demands is a key goal, and it helps organizations stay competitive by adopting innovative content creation practices. Ultimately, the system's aim is to enhance customer satisfaction, reduce operational costs, and provide data-driven insights for improved content strategies.

This comprehensive approach allows businesses to deliver high-quality content that aligns with their goals and meets customer expectations.

# STAKEHOLDERS

The stakeholders may include:

1. **Customers:** Bloggers, writers, business, and marketing agencies, and academic institutions using the software.

2. **End-users:** Individuals creating content using the AIWrite Tech software.

3. **Developers:** Those responsible for creating and maintaining the software and algorithms.

4. **Content Creators:**  Writers and bloggers who rely on the software for content creation.

5. **AI Technology Providers:** Companies or organizations supplying AI technology, like ChatGPT.

6. **AI Content Consumers:** Audiences who engage with content generated by AIWrite Tech.

7. **Regulatory Authorities:** Government bodies overseeing AI technology and content generation.

8. **Competitors:** Other companies in the AI content generation space.

9. **Investors:** Individuals or organizations providing funding for the project.

10. **Quality Assurance and Testing Teams:** Personnel responsible for ensuring the software's performance and quality.

11. **Marketing and Sales Teams:** Staff promoting and selling the AIWrite Tech solution.

12. **Legal and Compliance Teams:** Experts handling legal and compliance issues related to AI-generated content.

13. **User Support and Helpdesk Teams:** Personnel assisting users with software-related queries.

14. **Partnerships:** Companies or organizations collaborating with AIWrite Tech on technology or marketing.

15. **Content Consumers:** People who consume content generated using AIWrite Tech.

# DOMAIN ANALYSIS

The Prototyping model is the most suitable choice for our project of converting. In this approach, we begin by developing preliminary versions of the system, often in the form of prototypes, which demonstrate the core functionality of the AI content conversion. These prototypes serve as invaluable tools for understanding user needs and expectations early in the project.

By presenting tangible representations of the system's features, we can effectively gather feedback from stakeholders, including end-users, and ensure that the system aligns with evolving requirements.

The iterative nature of this model allows for continuous refinement based on this feedback, reducing the risk of building a solution that does not meet user expectations. Furthermore, Prototyping accelerates development by providing a clear roadmap for subsequent phases.