FAKULTI TEKNOLOGI MAKLUMAT DAN KOMUNIKASI

SEMESTER 1 2022/2023

BITI3533

ARTIFICIAL INTELLIGENCE PROJECT MANAGEMENT

PROJECT TITLE:

Fake News Detection System

PREPARED BY:

Group Member	Matric No
LIEW SZE WEN	B032010178
ADELLA JAVA DIRGANTARI	B032010460
KEN PRAMESWARI CAESARELLA ARYAPUTRI	B032010461

PREPARED FOR:

PROFESOR TS. DR. BURHANUDDIN BIN MOHD ABOOBAIDER

1.0 Forum on GitHub

1. **What you understand about GitHub? Why do you think it is useful to manage the project?**

   It's a complicated platform that helps developers work together and talk to each other. It is an open-source project that makes version control simpler for developers, facilitating easier collaboration and programme creation.

2. **How GitHub can be used to manage project related to artificial intelligence and software development?**

   A common method by which software developers track and coordinate the various activities involved in the development of different types of software. Developers on open-source projects can work together and share and collaborate on the source code using artificial intelligence and collaboration tools.

3. **List down other alternative tools can be used for AI project management like GitHub.**

   a. Gitlab
   b. Bitbucket
   c. Source Forge
   d. Google Cloud Source Repositories

4. **Rank the alternative tools given in Question 3 and which is the best?**

   1. Gitlab
   2. Bitbucket
   3. Source Forge
   4. Google Cloud Source Repositories

   The best alternative tools: Gitlab

5. **Justify your answer given in Question 4.**

   Gitlab has the largest number of users and the highest user rating compared to other repositories. Gitlab is the finest due to its self-monitoring features, which simplify development and are beneficial for deployment and maintenance.

2.0 ReadMe on GitHub

Fake News Detection System

Project Introduction

This is an initiative to identify fake news. Due to its destructive potential to cause significant social and national harm, widespread false news on social media and other media outlets is of grave concern. The system for detecting fake news has been developed using Artificial Intelligence (AI) techniques, including Support Vector Machines, Naive Bayes, and MaxEnt Classifiers.

The project is designed following a Project Management Plan (PMP) to organize the project's lifecycle more effectively. As a result of the Project Management Plan, we can deliver solutions in a timely and cost-effective manner, save money, and increase client satisfaction.

Generally, a Project Management Plan (PMP) consists of five phases:

- Project Initiating
- Project Planning
- Project Executing
- Project Monitoring and Controlling
- Project Closing

Project Management Plan (PMP)

Project Overview

The Project Overview provides an outline of the project's objectives and team members.

Project Initiating

The project starts with the Project Initiating. The objective of project initiation is to define the project broadly. Typically, the project charter and stakeholders are incorporated into this process.

Project Planning

Project Planning phase is essential to effective project management and focuses on creating a road map for the team. The project's scope is specified, and a plan for project management is developed. Work Breakdown Structure (WBS), Gantt Chart, and Scope Statement (PMP) are included in the Project Management Plan.

Project Executing

Project Executing is the phase in which the work is completed, and the project objectives are met. The result, coding blocks, and technical implementation are defined and documented.

Project Monitoring and Controlling

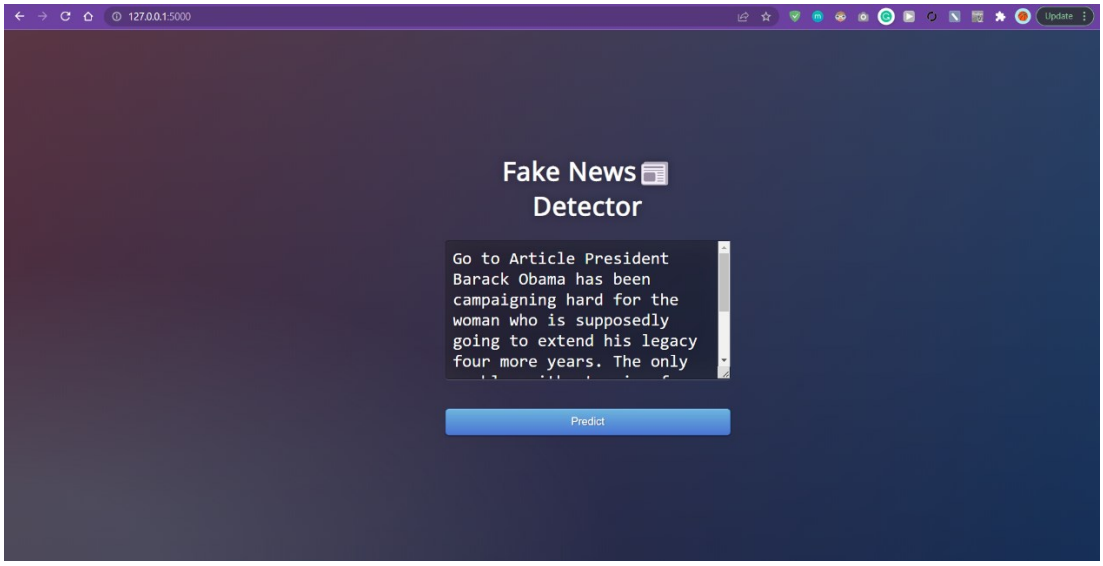
The objective of Project Monitoring and Controlling is to measure and evaluate project progress and performance in order to manage variation and change.

Project Closing

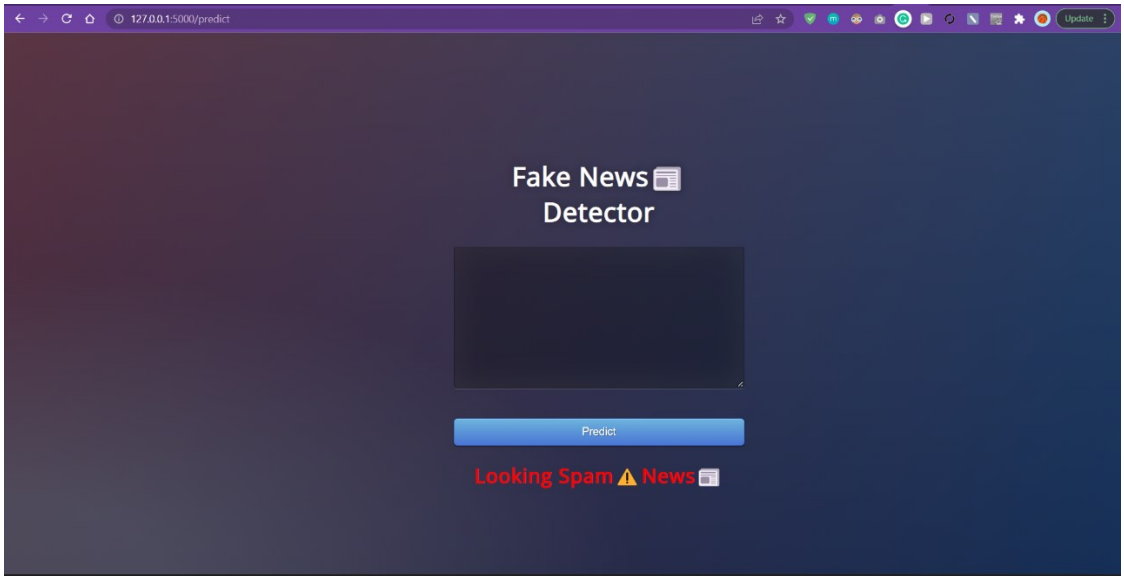
Project Closing phase is undertaken to complete all activities and formally finish the project or phase with a closing document and a report on lessons learned.

Result

Detect News



Detection Result



PROJECT OVERVIEW

Project Summary

In our society dominated by the internet, everyone receives news online. Facebook, Twitter, and other social media platforms rapidly distribute news to millions of people. False news propagates bias, which can affect a person.

Our Fake News Detection System classifies news stories using AI, NLP, and Machine Learning; the news detection and classification module is the primary focus. Users can enter the news on our website, and the website will automatically recognize and display the results.

Project Title

Fake News Detection System

Customer

ABC News Company

Project Objectives:

1. To create an Artificial Intelligent (AI) system that can detect the veracity of news.
2. To develop a system that can differentiate between "Real" news and "Fake" news.
3. To reduce crowd confusion induced by false news beliefs.

Team Members:

Members	Matric No
1. LIEW SZE WEN	B032010178
2. ADELLA JAVA DIRGANTARI	B032010460
3. KEN PRAMESWARI CAESARELLA ARYAPUTRI	B032010461

PROJECT INITIATING

Several tasks were stated in the initiation procedure: defining the project's goal, preparing the project charter, identifying the project's stakeholders, appointing the project team, and holding a kick-off meeting.

1. Project Goal

To attain the highest feasible levels of accuracy in detecting fraudulent or misleading news.

2. Project Stakeholders

Types	**Name**
A. Customer	ABC News Company
B. Project Leader	Liew Sze Wen
C. Resource Managers	Adella Java Dirgantari
	Ken Prameswari Caesarella Aryaputri
D. Project Teams	Front-end Developers
	Back-end Developers

3. Project Charter

In the initiation phase, the project charter is the most significant deliverable. The project charter plays a crucial role in the project's development since it is the first formal definition of the project. Project charters establish the project manager's legal authority, define the project's high-level requirements, milestones, and success criteria for the project, as well as the project manager's authority to take on the project.

The project charter must contain the following:

- Problem definition
- Project description (high-level overview of the work)
- Project objectives (what is the project's purpose)
- Objectives and outcomes
- scope (overview of what's in, out, or uncertain)
- Stakeholder roles, responsibilities, and involvement
- Major deliverables
- High-level milestones
- Time frames
- Funding authority
- Identification of the project team
- Assumption

Project Planning

Kick-off Meeting

The primary purpose of a kick-off meeting is to ensure that everyone is on the same page and off to a strong start. To get work started as quickly as possible, this is a chance to introduce people to the team and provide more information about the project.

KICKOFF MEETING MINUTES

LOCATION	DATE	TIME
Meeting Room 1, LAE IT Company	28/9/2022	10: 00 a.m.
MEETING / PROJECT NAME	MINUTES PREPARED BY	
Fake News Detection System	Liew Sze Wen	

1. ATTENDEES PRESENT			
NAME	ROLL IN PROJECT	EMAIL	PHONE
Liew Sze Wen	Project Manager	Liew123@gmail.com	012-3456789
Adella Java Dirgantari	Resource Manager	Adella123@gmail.com	015-6328564
Ken Prameswari Caesarella Aryaputri	Resource Manager	Ella234@gmail.com	017-5695424
Felicia	Client, Sponsor	Felicia_abcnews@gmail.com	013-2546985

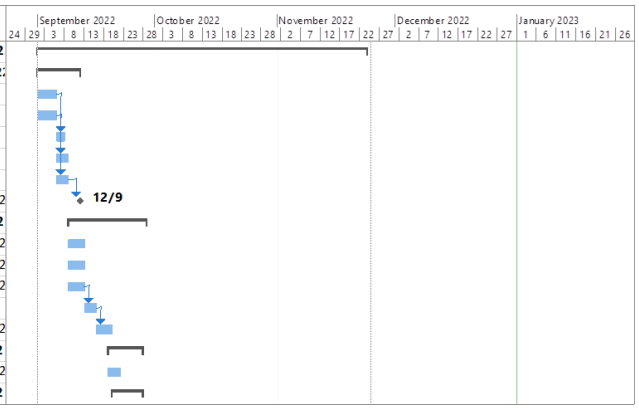
2. AGENDA ITEMS	NOTES	OWNER / PRESENTED BY	TIME ALLOCATED
INTRODUCTION	It is challenging to determine the veracity of the news.	Liew Sze Wen	10 minutes
PROJECT PURPOSE	To attain the highest feasible levels of accuracy in detecting fraudulent or misleading news.	Liew Sze Wen	10 Minutes
PROJECT OBJECTIVES	• To create an Artificial Intelligent (AI) system that can detect the veracity of news. • To develop a system that can differentiate between "Real" news and "Fake" news. • To reduce crowd confusion induced by false news beliefs.	Liew Sze Wen	10 Minutes
ROLES AND RESPONSIBILITIES	Resource Manager • Including several types of managers Front-end / Back-end Developers • Develop the system in the given time	Liew Sze Wen	20 Minutes
PROJECT SCHEDULE	Start Date: 27/11/2022 End Date: 31/12/2022 Work Breakdown Structure: • Initiating Phase (1 Week) • Planning Phase (1 Week) • Executing Phase (1 Week) • Controlling and Monitoring Phase (1 Week) • Closing Phase (1 Week)	Liew Sze Wen	20 Minutes
COMMUNICATION PLAN	1. Budget Process 2. Progress Report	Liew Sze Wen	10 Minutes

Project Management Life Cycle

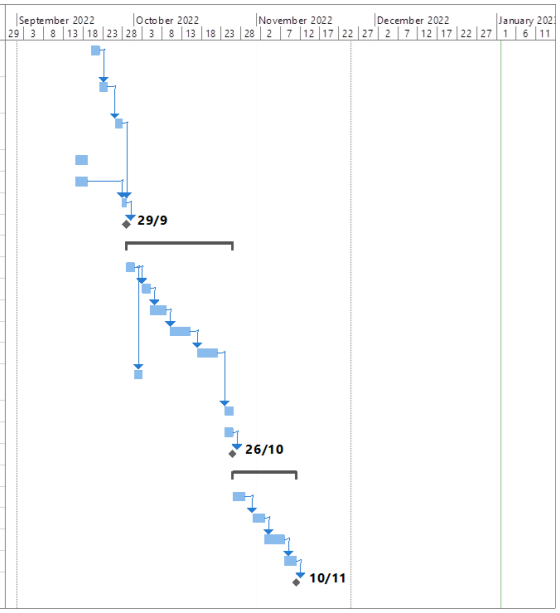
In order to adhere to the guidelines and achieve milestones on a regular basis, the project management life cycle is outlined and documented in Gantt charts. Each member's tasks and work are broken down into several modules by the project life cycle (WBS). The WBS outlines the individual roles and responsibilities of each member during each stage of the lifecycle.

Gantt Chart

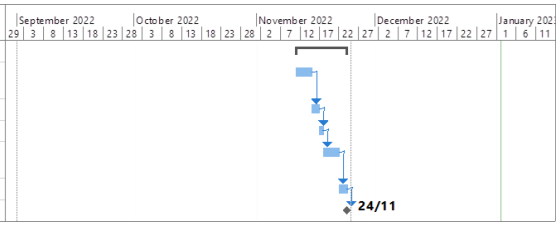
ID	Task Mode	Outline Number	Task Name	Duration	Start	Finish
1		**1**	**Fake News System Detection**	**70 days**	**Thu 1/9/22**	**Thu 24/11/2**
2		**1.1**	**Initiating**	**8 days**	**Thu 1/9/22**	**Mon 12/9/2**
3		1.1.1	Project Goal	3 days	Thu 1/9/22	Mon 5/9/22
4		1.1.2	Project Charter	3 days	Thu 1/9/22	Mon 5/9/22
5		1.1.3	Project Charter Revisior	2 days	Tue 6/9/22	Wed 7/9/22
6		1.1.4	Key Skateholders	3 days	Tue 6/9/22	Thu 8/9/22
7		1.1.5	Project Team	3 days	Tue 6/9/22	Thu 8/9/22
8		1.1.6	Project Initiation	0 days	Mon 12/9/22	Mon 12/9/22
9		**1.2**	**Planning**	**19 days**	**Fri 9/9/22**	**Thu 29/9/22**
10		1.2.1	Define Scope	3 days	Fri 9/9/22	Mon 12/9/22
11		1.2.2	Define Requirements	3 days	Fri 9/9/22	Mon 12/9/22
12		1.2.3	Define Resources	3 days	Fri 9/9/22	Mon 12/9/22
13		1.2.4	Roles and Responsibilitie	3 days	Tue 13/9/22	Thu 15/9/22
14		1.2.5	Risk Analysis	4 days	Fri 16/9/22	Mon 19/9/22
15		**1.2.6**	**Project Plan**	**9 days**	**Mon 19/9/2**	**Tue 27/9/22**
16		1.2.6.1	Prepare WBS	3 days	Mon 19/9/22	Wed 21/9/22
17		**1.2.6.2**	**Prepare Schedule**	**8 days**	**Tue 20/9/22**	**Tue 27/9/22**



ID	Task Mode	Outline Number	Task Name	Duration	Start	Finish
18		1.2.6.2.1	Determine Task Duration	2 days	Tue 20/9/22	Wed 21/9/22
19		1.2.6.2.2	Create Draft Gantt Chart	2 days	Thu 22/9/22	Fri 23/9/22
20		1.2.6.2.3	Review and Finalize the Gantt	2 days	Mon 26/9/22	Tue 27/9/22
21		1.2.7	Verify Scope	3 days	Fri 16/9/22	Sun 18/9/22
22		1.2.8	Control Scope	3 days	Fri 16/9/22	Sun 18/9/22
23		1.2.9	Project Kick-Off Meetin	1 day	Wed 28/9/22	Wed 28/9/22
24		1.2.10	Project Planning	0 days	Thu 29/9/22	Thu 29/9/22
25		**1.3**	**Execution**	**22 days**	**Thu 29/9/22**	**Wed 26/10/22**
26		1.3.1	Data Collect & Analysis	2 days	Thu 29/9/22	Fri 30/9/22
27		1.3.2	Database	2 days	Mon 3/10/22	Tue 4/10/22
28		1.3.3	Interface Design	4 days	Wed 5/10/22	Sat 8/10/22
29		1.3.4	Integration	5 days	Mon 10/10/22	Fri 14/10/22
30		1.3.5	Testing	5 days	Mon 17/10/22	Fri 21/10/22
31		1.3.6	Project Benefits Measurement	2 days	Sat 1/10/22	Sun 2/10/22
32		1.3.7	Project Updates	2 days	Mon 24/10/22	Tue 25/10/22
33		1.3.8	Chart Updates	2 days	Mon 24/10/22	Tue 25/10/22
34		1.3.9	Project Execution	0 days	Wed 26/10/22	Wed 26/10/22
35		**1.4**	**Monitoring and Controllin**	**12 days**	**Wed 26/10/22**	**Thu 10/11/22**
36		1.4.1	Project Objectives	3 days	Wed 26/10/22	Fri 28/10/22
37		1.4.2	Quality Deliverables	3 days	Mon 31/10/22	Wed 2/11/22
38		1.4.3	Effort & Cost Tracking	3 days	Thu 3/11/22	Mon 7/11/22
39		1.4.4	Project Status Report	3 days	Tue 8/11/22	Thu 10/11/22
40		1.4.5	Project Monitoring and Controlling	0 days	Thu 10/11/22	Thu 10/11/22



ID	Task Mode	Outline Number	Task Name	Duration	Start	Finish
41		**1.5**	**Closing**	**11 days**	**Fri 11/11/22**	**Thu 24/11/22**
42		1.5.1	Acceptance of Project Deliverables	4 days	Fri 11/11/22	Mon 14/11/22
43		1.5.2	Final Project Report	2 days	Tue 15/11/22	Wed 16/11/22
44		1.5.3	Final Project Presentatic	1 day	Thu 17/11/22	Thu 17/11/22
45		1.5.4	Document the Lesson Learned	2 days	Fri 18/11/22	Mon 21/11/22
46		1.5.5	Formalize Closure	2 days	Tue 22/11/22	Wed 23/11/22
47		1.5.6	Project Closing	0 days	Thu 24/11/22	Thu 24/11/22



Work Breakdown Structure (WBS)

	Task Mode	Outline Number	Task Name	Duration	Start	Finish	Predecessors
1		**1**	**Fake News System Detection**	**70 days**	**Thu 1/9/22**	**Thu 24/11/22**	
2		**1.1**	**Initiating**	**8 days**	**Thu 1/9/22**	**Mon 12/9/22**	
3		1.1.1	Project Goal	3 days	Thu 1/9/22	Mon 5/9/22	
4		1.1.2	Project Charter	3 days	Thu 1/9/22	Mon 5/9/22	
5		1.1.3	Project Charter Revision	2 days	Tue 6/9/22	Wed 7/9/22	4
6		1.1.4	Key Skateholders	3 days	Tue 6/9/22	Thu 8/9/22	4
7		1.1.5	Project Team	3 days	Tue 6/9/22	Thu 8/9/22	3
8		1.1.6	Project Initiation	0 days	Mon 12/9/22	Mon 12/9/22	7
9		**1.2**	**Planning**	**19 days**	**Fri 9/9/22**	**Thu 29/9/22**	
10		1.2.1	Define Scope	3 days	Fri 9/9/22	Mon 12/9/22	
11		1.2.2	Define Requirements	3 days	Fri 9/9/22	Mon 12/9/22	
12		1.2.3	Define Resources	3 days	Fri 9/9/22	Mon 12/9/22	
13		1.2.4	Roles and Responsibilities	3 days	Tue 13/9/22	Thu 15/9/22	12
14		1.2.5	Risk Analysis	4 days	Fri 16/9/22	Mon 19/9/22	13
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16		1.2.6.1	Prepare WBS	3 days	Mon 19/9/22	Wed 21/9/22	
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19		1.2.6.2.2	Create Draft Gantt Chart	2 days	Thu 22/9/22	Fri 23/9/22	18
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21		1.2.7	Verify Scope	3 days	Fri 16/9/22	Sun 18/9/22	13
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23		1.2.9	Project Kick-Off Meeting	1 day	Wed 28/9/22	Wed 28/9/22	20,22
24		1.2.10	Project Planning	0 days	Thu 29/9/22	Thu 29/9/22	23
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27		1.3.2	Database	2 days	Mon 3/10/22	Tue 4/10/22	26
28		1.3.3	Interface Design	4 days	Wed 5/10/22	Sat 8/10/22	27
29		1.3.4	Integration	5 days	Mon 10/10/22	Fri 14/10/22	28
30		1.3.5	Testing	5 days	Mon 17/10/22	Fri 21/10/22	29
31		1.3.6	Project Benefits Measurement	2 days	Sat 1/10/22	Sun 2/10/22	26
32		1.3.7	Project Updates	2 days	Mon 24/10/22	Tue 25/10/22	30
33		1.3.8	Chart Updates	2 days	Mon 24/10/22	Tue 25/10/22	
34		1.3.9	Project Execution	0 days	Wed 26/10/22	Wed 26/10/22	33
35		**1.4**	**Monitoring and Controlling**	**12 days**	**Wed 26/10/22**	**Thu 10/11/22**	
36		1.4.1	Project Objectives	3 days	Wed 26/10/22	Fri 28/10/22	
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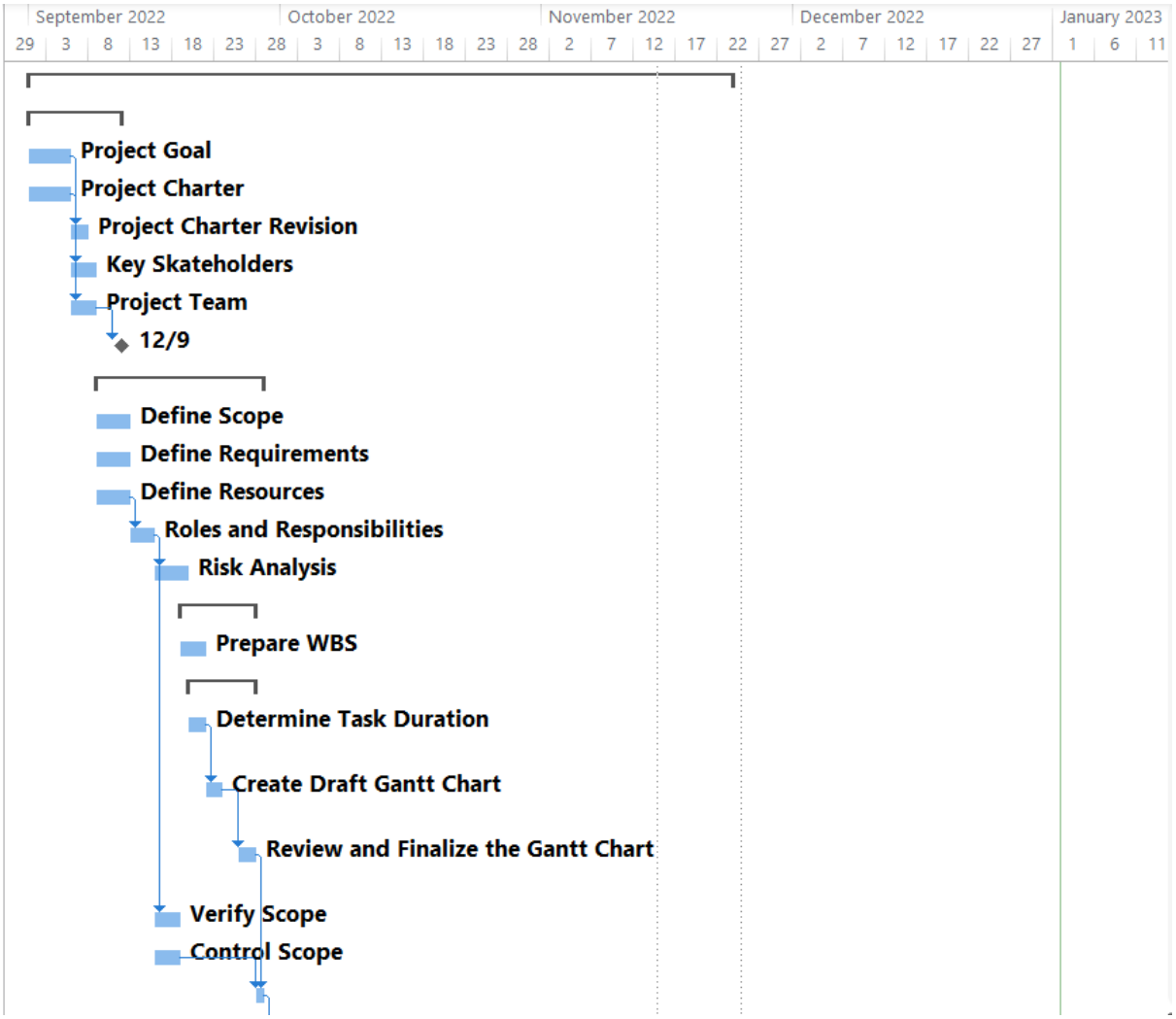
46		1.5.5	Formalize Closure	2 days	Tue 22/11/22	Wed 23/11/22	45
47		1.5.6	Project Closing	0 days	Thu 24/11/22	Thu 24/11/22	46

Schedule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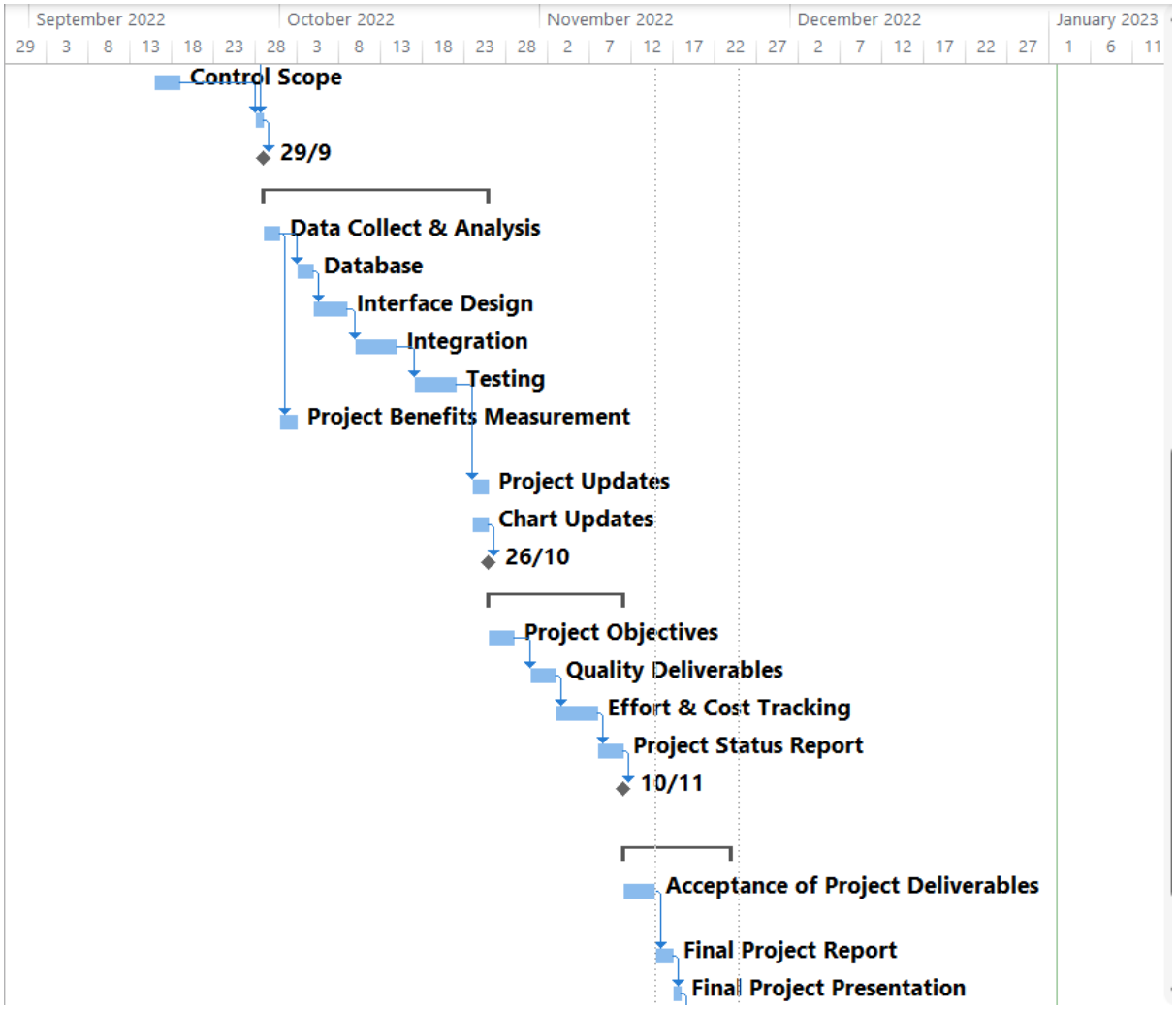
October 2022
November 2022
December 2022
January 2023
29 3 8 13 18 23 28 3 8 13 18 23 28 2 7 12 17 22 27 2 7 12 17 22 27 1 6 11
Project Goal
Project Charter
Project Charter Revision
Key Skateholders
Project Team
12/9
Define Scope
Define Requirements
Define Resources
Roles and Responsibilities
Risk Analysis
Prepare WBS
Determine Task Duration
Create Draft Gantt Chart
Review and Finalize the Gantt Chart
Verify Scope
Control Scope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Control Scope
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Chart Updates
26/10
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Project Status Report
10/11
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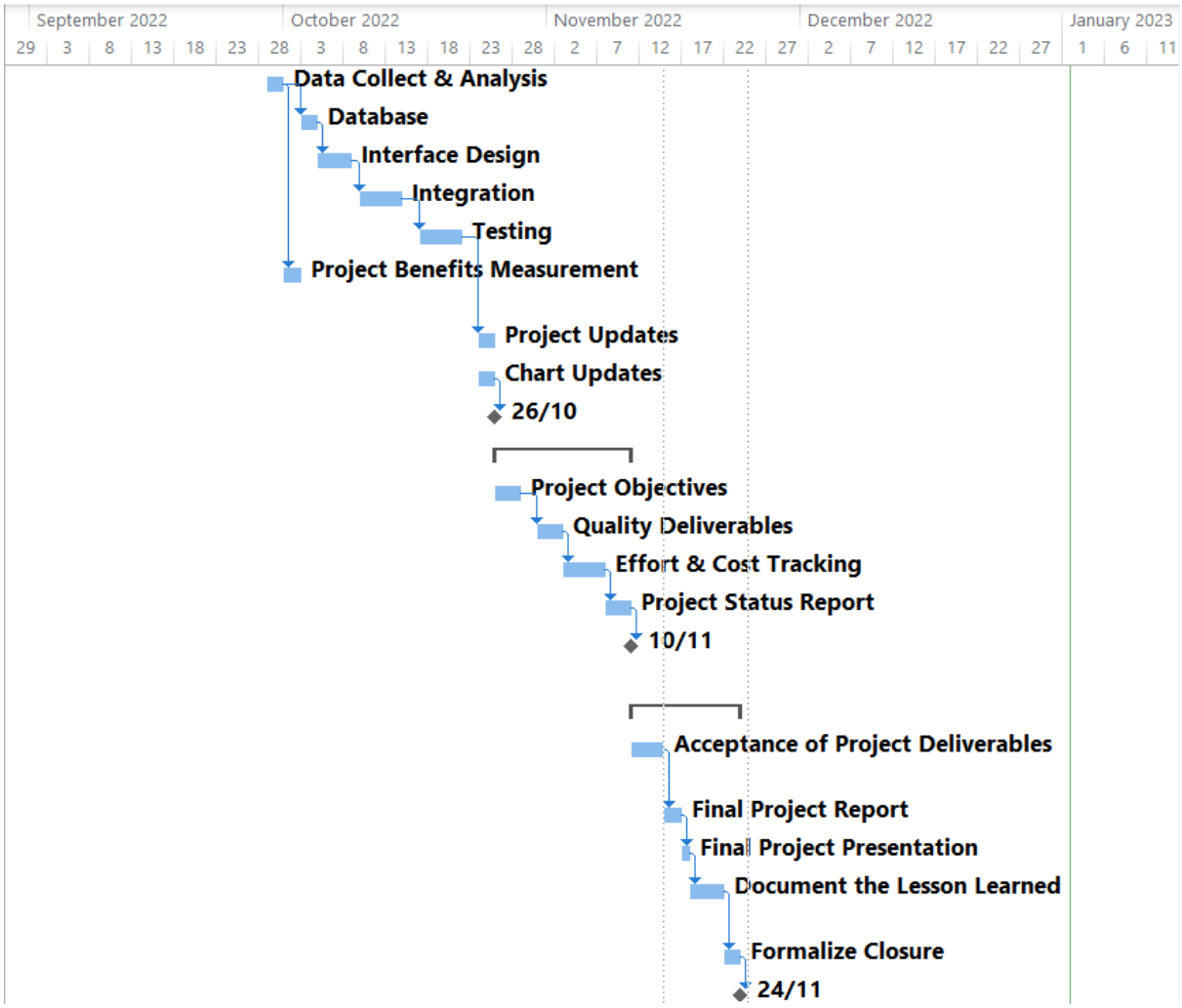
Final Project Report
Final Project Presentation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Effort & Cost Tracking
Project Status Report
10/11
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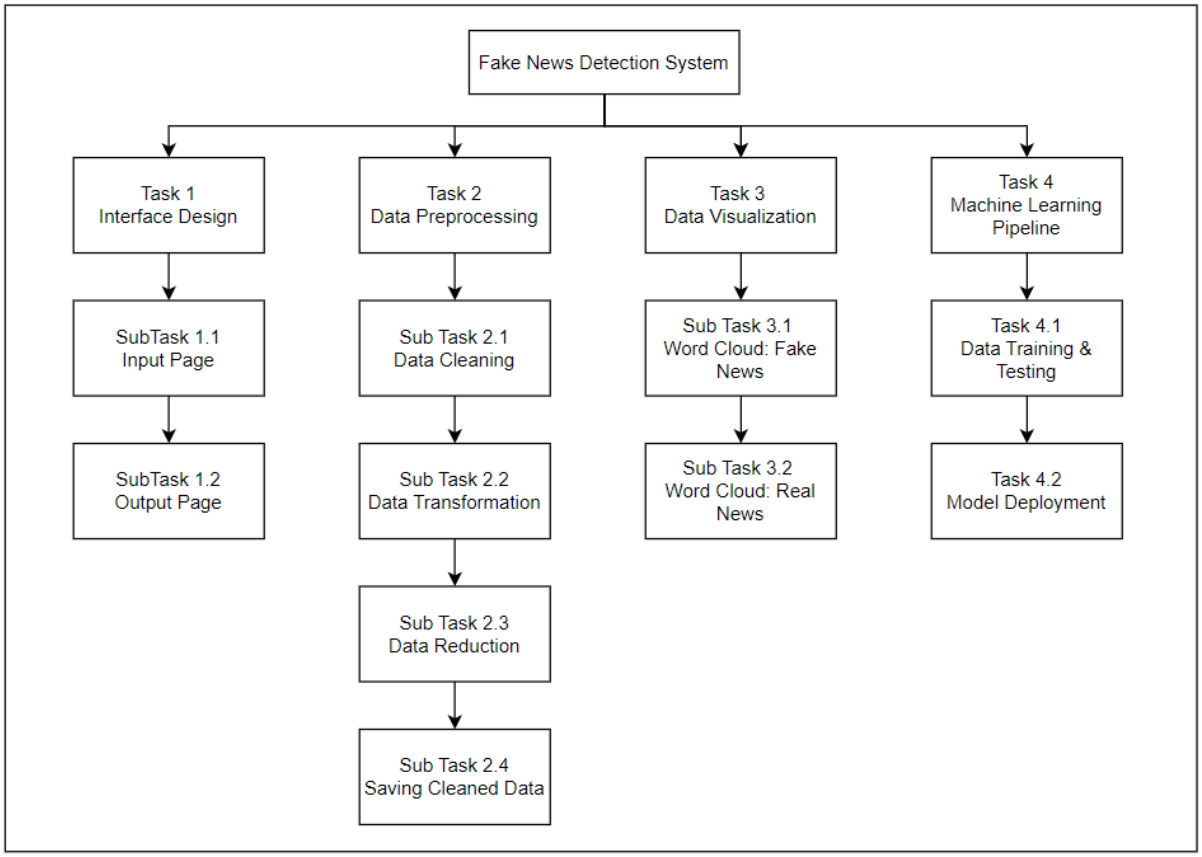
Final Project Report
Final Project Presentation
Document the Lesson Learned
Formalize Closure
24/11

Work Breakdown Structure (WBS): Technical Part



Scope

Establishing the boundaries of a project's purview is of the utmost significance. As a result, in this project, to detect fake news, this system will only recognise the news, not the story or the chat. For instance, the system will display an error warning if a user enters stories or conversations into the text field.

Roles and Responsibilities

Roles	Person In Charge	Responsibilities
Project Manager	Liew Sze Wen	A project manager is responsible for delivering the project. As the project manager of the Fake News Detection System Project, the project manager leads and manages the project team with the authority and responsibility of the project board.

		Responsibilities include: • Developing and implementing project management standards. • Produce deliverables according to the requirements. • Planning and monitoring the project. • Identifying any delegation needed and implementing roles for project assurance within the agreed reporting structure. • Planning and maintaining project, stage, and exception plans as needed. • Managing project risks. • Assisting program management and related projects to ensure that work is noticed and duplicated. • Monitoring overall progress and use of resources, initiating corrective action where necessary. • Applying change control and configuration management processes. • Reporting through agreed-upon lines on project progress through highlight reports and end-stage assessments. • Liaison with the appointed project assurance representatives to ensure the overall direction and integrity of the project. • Maintaining an awareness of potential interdependencies with other projects and their impacts. • Developing and implementing appropriate technical and quality strategies and standards.

		• Identifying and obtaining the support and advice required for the project's management, planning, and control. • Managing project administration. • Performing a project evaluation review to determine the effectiveness of project management.
Procurement Manager	Adella Java Dirgantari	The procurement manager is an expert purchaser responsible for acquiring all the goods and services required to operate or expand a business. **Responsibilities:** • Meet with supervisors and department leaders to determine the company's needs. • Forecast supply and demand. • Requests for Proposals (RFPs). • Evaluate and negotiate vendor and supplier contracts. • Assign responsibilities to the procurement team. **Day-to-Day Duties:** • Research suppliers and vendors that align with the company's objectives. • Find suppliers with the necessary certificates, accreditations, and insurance, as well as a consistent supply of materials that fit within your budget. • Manage inventory. • Ensure partners continue to meet the demands of the company. • Collect and analyse data to ensure that the organization makes the best decisions possible.

		• Align departmental budgets with requirements.
Risk Manager	Liew Sze Wen	The risk manager is accountable for minimising the negative impact of losses on achieving an organisation's objectives and managing the organisation's risks. Every step of this project may encounter unforeseen difficulties. Therefore, the risk manager must list every risk to avoid it and take action to ensure the problem does not occur. **Responsibilities include:** • Identify the potential risks that could affect the project. • Assign each identified threat or opportunity to a team member responsible for monitoring it. • Analyse each risk to appreciate its underlying causes and potential repercussions. • Prioritise project risks according to their immediacy and potential degree of impact. • The risk management strategy responds to the identified risks by either preventing the risk event from occurring or mitigating its impact if it does occur. • Monitor the risk management plan and modify it as necessary.
Administrative Manager	Ken Prameswari Caesarella Aryaputri	**Responsibilities includes:** • Supervise the administrative staff. • Coordinate training on tools and services. • Ensure adherence to processes and policies. • Sponsoring cost budgeting and tracking activities.

		• Facilitate communication on fiscal status. • Ensure the project cost tool. • Update on the project's budget and expenditures. • Compile a list of all conceivable items that can be included in the documentation form.
Financial Analyst	Adella Java Dirgantari	The Financial Analyst is responsible for providing administrative support to the Administrative Manager. **Responsibilities includes:** • Manage and track the Fake News Detection System project budgets and costs. • Coordinate and prepare a variety of budgetary documents. • Provide support for project solicitations, evaluations, and awarding. • Comb through data to uncover opportunities.
Project Scheduler	Liew Sze Wen	**Responsibilities includes:** • Track progress against the project schedule. • Merge and detect dependencies and risks between the project schedules. • Track progress against the prime contractors and counties' timetables.
Quality Manager	Adella Java Dirgantari	**Responsibilities includes:** • Manage and assure the quality of the Fake News Detection System and the prime contractor • Exam the conformance of process and product activities to standards and plans.

		• Give insight into the project and contractor's business practises. • Evaluate the final output by reviewing the system's overall quality. • Conduct a report (quality standard issues) to upper management.

Responsibility Assignment Matrices (RAM)

R – Responsible (The person(s) completing the task)
A – Accountable (The team member coordinating the actions, making decisions, and delegating to those responsible for the task)
C – Consulted (The person(s) who will be communicated with regarding decisions and tasks)
I – Informed (The person(s) who will be updated during the project and upon completion)

Resource Responsibility	Project Manager	Procurement Manager	Risk Manager	Administrative Manager	Financial Analyst	Project Scheduler	Quality Manager
Initiating							
1. Project Goal	R	A	A	A	A	A	I
2. Project Charter	R	A	A	C	C	C	I
3. Project Charter Revision	R	A	C	C	C	C	I
4. Key Stakeholders	R	A	A	A	A	C	I
5. Project Team	R	C	C	C	C	C	I
6. Project Initiation	R	C	C	A	C	I	I
Planning							
1. Define Scope	I	R	A	A	C	C	C
2. Define Requirement	I	R	A	A	C	C	C
3. Define Resources	I	R	A	A	C	C	C
4. Roles and Responsibilities	C	R	A	A	A	A	A
5. Risk Analysis	C	A	R	A	A	A	I
6. Project Plan	A	A	A	A	A	R	C
7. Verify Scope	R	A	A	A	C	C	C
8. Control Scope	I	A	A	R	C	C	A
9. Project Kick-Off Meeting	R	I	I	I	I	I	I
10. Project Planning	C	A	C	A	A	R	I
Execution							
1. Data Collect & Analysis	I	A	A	R	C	C	C
2. Database	I	C	I	R	C	C	C
3. Interface Design	I	C	C	R	I	A	C
4. Integration	I	A	A	R	I	A	C

5. Testing	C	A	C	R	C	A	C
6. Project Benefits Measurement	C	A	C	R	A	A	C
7. Project Updates	I	A	A	R	C	C	C
8. Chart Update	I	I	A	R	A	A	C
9. Project Execution	I	I	A	A	I	C	R
Monitoring and Controlling							
1. Project Objectives	C	A	R	A	A	I	A
2. Quality Deliverables	A	A	A	C	C	I	R
3. Effort & Cost Tracking	A	A	C	A	R	A	A
4. Project Status Report	I	C	C	R	A	A	A
5. Project Monitoring and Controlling	I	A	A	C	C	A	R
Closing							
1. Acceptance of Project Deliverables	C	C	I	A	I	I	R
2. Final Project Report	C	A	C	A	A	I	R
3. Final Project Presentation	R	I	I	I	I	I	C
4. Document the Lesson Learned	R	A	A	C	C	C	I
5. Formalize Closure	I	C	A	A	C	I	R
6. Project Closing	A	A	C	C	I	A	R

Responsibility Assignment Matrices (RAM)

Control Element	What is likely to go wrong?	How will we know?	What will we do about it?
Quality	The quality result is very different from what was designed.	During the unit testing phase, the quality issue will be determined.	Assign quality managers to monitor and control the quality of the Fake News Detection System and evaluate the final output
Cost	The actual cost exceeds the estimated cost.	The monthly bills show an unexpected extra charge.	Assign financial analyst to manage and track the Fake News Detection System project budgets and costs.
Time	The project was unable to meet the milestones specified in the Gantt Chart.	There are many problems and member got stuck in the project.	Other members need to help each other to avoid stuck on Fake News Detection System.

PROJECT EXECUTING

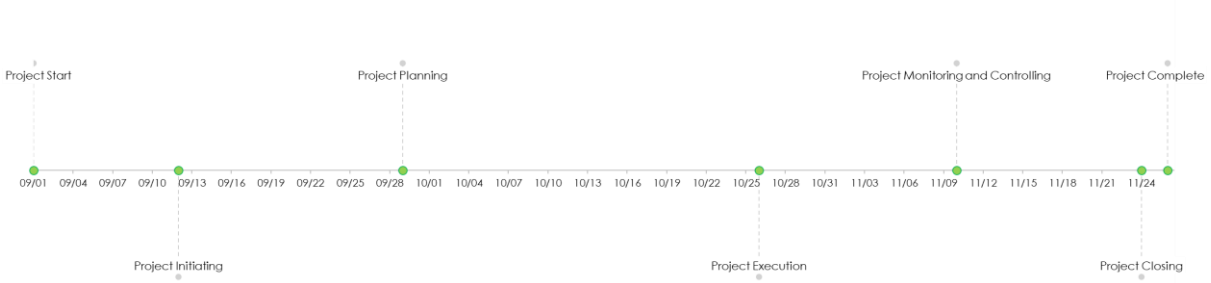
Software Requirement

- Python Language
- Hyper Text Markup Language (HTML)

Task and Estimated Cost

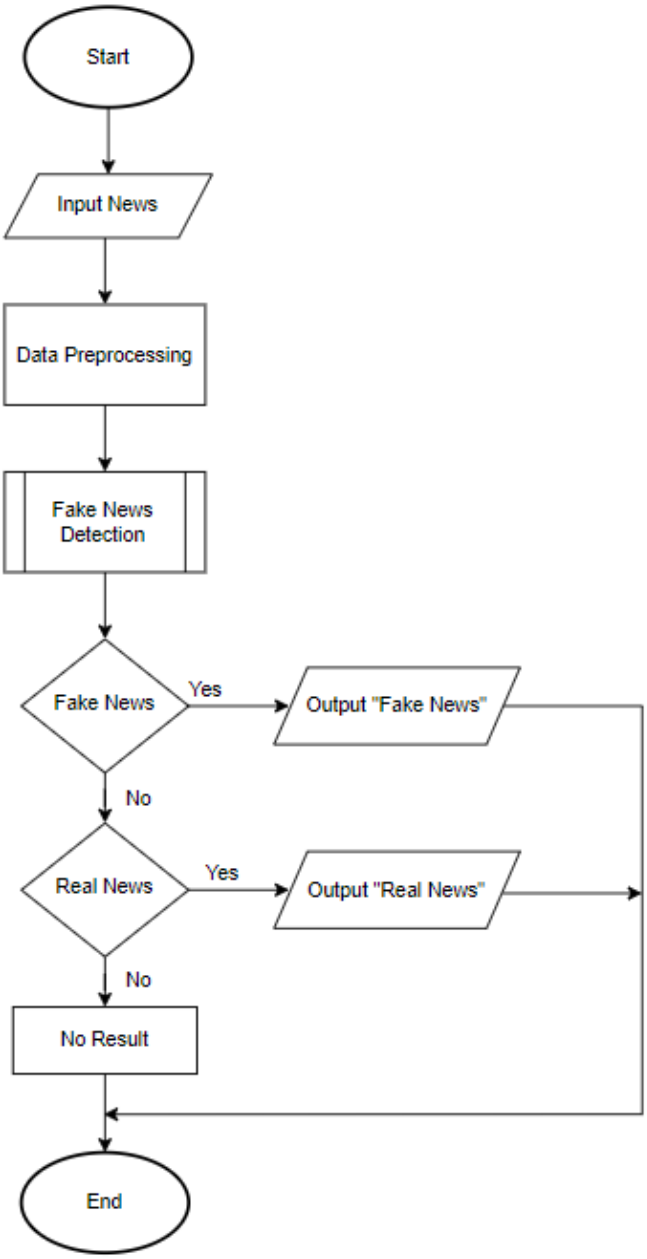
Task	**Estimated Cost**
Project Manager	RM5000
Project Team Members	
1. Procurement Manager	RM3500
2. Risk Manager	RM3500
3. Administrative Manager	RM3500
4. Financial Analyst	RM2500
5. Project Scheduler	RM2500
6. Quality Manager	RM3500
Installation Software	RM5500
Licensed Software	RM4000
Testing	RM13000
System maintenance	RM10000
Total Project	RM56500

Milestone Chart



DATE	MILESTONE
09/01	Project Start
09/12	Project Initiating
09/29	Project Planning
10/26	Project Execution
11/10	Project Monitoring and Controlling
11/24	Project Closing
11/26	Project Complete

Flowchart



Description: File, Coding, and Implementation

1. Dataset

This folder contains dataset named News.csv. This project's dataset was obtained via the Kaggle platform at https://www.kaggle.com/techykajal/fakereal-news. This dataset has six attributes, with News Headline being the most crucial for classifying news as FALSE or TRUE.

Attributes	Responsibilities
News Headline	Include data requiring analysis.
Link Of News	The URL of the news headline given in the first column.
Source	This column lists the names of the individuals who posted the news on Facebook, Instagram, Twitter, or any other social media platform.
Stated On	The date on which the authors published the news on various social media channels.
Date	This column indicates the date on which the PolitiFact fact-checking team investigated the information to determine whether it was FALSE or TRUE.
Label	This column has five class labels: True, Mostly-True, Half-True, Barely-True, False, and Pants on Fire.

2. Data Preprocessing

Preprocessing data is an important step for data analysis.

- It improves accuracy and reliability. It can improve the accuracy and quality of a dataset by removing inconsistent or missing data values due to human or computer error.
- It makes data consistent. In the process of collecting data, duplicates are possible. Discarding them during preprocessing is an effective way to ensure that the
- The algorithm becomes easier to read as a result. Preprocessing data enhances its quality and makes it easier for machine learning algorithms to read, use, and interpret it.

This folder includes one Python script and one csv file:

1. **Text Pre-processing with stopwords.ipynb**

   Libraries and Packages Required:

Before analysing the data, there several preprocessing steps need to be done.

- Remove Emojis

Remove Emojis

In [8]:
```
def remove_Emojis(text):
    '''
    This function will remove all the emojis comes in the text.

    Input: This dog 🤩
    Output: This dog

    '''
    emoji_pattern = re.compile("["
            u"\U0001F600-\U0001F64F"  # emoticons
            u"\U0001F300-\U0001F5FF"  # symbols & pictographs
            u"\U0001F680-\U0001F6FF"  # transport & map symbols
            u"\U0001F1E0-\U0001F1FF"  # flags (iOS)
                               "]+", flags=re.UNICODE)
    result = emoji_pattern.sub(r'', text)
    return  result # no emoji
```

- Remove NewLines & Tabs

Remove newlines & tabs

In [9]:
```
def remove_newlines_tabs(text):
    """
    This function will remove all the occurrences of newlines, tabs, and combinations like: \\n, \\.

    arguments:
        input_text: "text" of type "String".

    return:
        value: "text" after removal of newlines, tabs, \\n, \\ characters.

    Example:
    Input : This is her \\ first day at this place.\n Please,\t Be nice to her.\\n
    Output : This is her first day at this place. Please, Be nice to her.

    """

    # Replacing all the occurrences of \n,\\n,\t,\\ with a space.
    Formatted_text = text.replace('\\n', ' ').replace('\n', ' ').replace('\r',' ').replace('\t',' ').replace('\\', ' ').replace('. com', '.com')
    return Formatted_text
# len of data :- 1618647 lac words
```

- Remove Strip HTML Tags

Strip Html Tags

In [10]:
```
def strip_html_tags(text):
    """
    This function will remove all the occurrences of html tags from the text.

    arguments:
        input_text: "text" of type "String".

    return:
        value: "text" after removal of html tags.

    Example:
    Input : This is a nice place to live.
    Output : This is a nice place to live.
    """
    # Initiating BeautifulSoup object soup.
    soup = BeautifulSoup(text, "html.parser")
    # Get all the text other than html tags.
    stripped_text = soup.get_text(separator=" ")
    return stripped_text
# len of string:- 1616053 lac words
```

- Remove Links

Remove Links

In [11]:
```
def remove_links(text):
    """
    This function will remove all the occurrences of links.

    arguments:
        input_text: "text" of type "String".

    return:
        value: "text" after removal of all types of links.

    Example:
    Input : To know more about cats and food & website: catster.com  visit: https://catster.com//how-to-feed-cats
    Output : To know more about cats and food & website: visit:

    """

    # Removing all the occurrences of links that starts with https
    remove_https = re.sub(r'http\S+', '', text)
    # Remove all the occurrences of text that ends with .com
    remove_com = re.sub(r"\ [A-Za-z]*\.com", " ", remove_https)
    return remove_com
# len of words:- 1616053
```

- Remove WhiteSpaces.

Remove WhiteSpaces

In [12]:
```
def remove_whitespace(text):
    """ This function will remove
        extra whitespaces from the text
    arguments:
        input_text: "text" of type "String".

    return:
        value: "text" after extra whitespaces removed .

    Example:
    Input : How   are   you   doing   ?
    Output : How are you doing ?

    """
    pattern = re.compile(r'\s+')
    Without_whitespace = re.sub(pattern, ' ', text)
    # There are some instances where there is no space after '?' & ')',
    # So I am replacing these with one space so that It will not consider two words as one token.
#     text = Without_whitespace.replace('?', ' ? ').replace(')', ') ')
    return text
# len of words:- 1596248 lac words
```

- Remove Accented Characters, Case Conversion (to lowercase)

Step1: Remove Accented Characters

In [13]:
```
# Code for accented characters removal
def accented_characters_removal(text):
    # this is a docstring
    """
    The function will remove accented characters from the
    text contained within the Dataset.

    arguments:
        input_text: "text" of type "String".

    return:
        value: "text" with removed accented characters.

    Example:
    Input : Málaga, àéêöhello
    Output : Malaga, aeeohello

    """
    # Remove accented characters from text using unidecode.
    # Unidecode() - It takes unicode data & tries to represent it to ASCII characters.
    text = unidecode.unidecode(text)
    return text
# Len of data:- 1593952 lac of words
```

Step2: Case Conversion

In [14]:
```
# Code for text lowercasing
def lower_casing_text(text):

    """
    The function will convert text into lower case.

    arguments:
         input_text: "text" of type "String".

    return:
         value: text in lowercase

    Example:
    Input : The World is Full of Surprises!
    Output : the world is full of surprises!

    """
    # Convert text to lower case
    # lower() - It converts all upperase letter of given string to lowercase.
    text = text.lower()
    return text
```

- Reduce Repeated Characters and Punctuations

Step3: Reduce repeated characters and punctuations¶

In [15]:
```
# Code for removing repeated characters and punctuations

def reducing_incorrect_character_repeatation(text):
    """
    This Function will reduce repeatition to two characters
    for alphabets and to one character for punctuations.

    arguments:
         input_text: "text" of type "String".

    return:
        value: Finally formatted text with alphabets repeating to
        two characters & punctuations limited to one repeatition

    Example:
    Input : Reallllllllyyyyy,        Greeeeaaaatttt   !!!!?....;;;;:)
    Output : Reallyy, Greeaatt !?.;:)

    """
    # Pattern matching for all case alphabets
    Pattern_alpha = re.compile(r"([A-Za-z])\1{1,}", re.DOTALL)

    # Limiting all the  repeatation to two characters.
    Formatted_text = Pattern_alpha.sub(r"\1\1", text)

    # Pattern matching for all the punctuations that can occur
    Pattern_Punct = re.compile(r'([.,/#!$%^&*?;:{}=_`~()+-])\1{1,}')

    # Limiting punctuations in previously formatted string to only one.
    Combined_Formatted = Pattern_Punct.sub(r'\1', Formatted_text)

    # The below statement is replacing repeatation of spaces that occur more than two times with that of one occurrence.
    Final_Formatted = re.sub(' {2,}',' ', Combined_Formatted)
    return Final_Formatted
```

Explanation for using some symbols in above regex expression:

Symbols	Description
\1	Is equivalent to re.search(...). group(1). It Refers to first capturing group. \1 matches the exact same text that was matched by the first capturing group.
{1,}	It means we are matching for repetition that occurs more than one times.
DOTALL	It matches newline character as well unlike dot operator which matches everything in the given text except newline character.
sub()	This function is used to replace occurrences of a particular sub-string with another sub-string. This function takes as input the following: The sub-string to replace. The sub-string to replace with.
r'\1\1'	It limits all the repetition to two characters.
r'\1'	Limits all the repetition to only one character.
{2,}	It means to match for repetition that occurs more than two times.

- Expand Contraction Words

Step4: Expand contraction words

In [16]:

```
CONTRACTION_MAP = {
"ain't": "is not",
"aren't": "are not",
"can't": "cannot",
"can't've": "cannot have",
"'cause": "because",
"could've": "could have",
"couldn't": "could not",
"couldn't've": "could not have",
"didn't": "did not",
"doesn't": "does not",
"don't": "do not",
"hadn't": "had not",
"hadn't've": "had not have",
"hasn't": "has not",
"haven't": "have not",
"he'd": "he would",
"he'd've": "he would have",
"he'll": "he will",
"he'll've": "he he will have",
"he's": "he is",
"how'd": "how did",
"how'd'y": "how do you",
"how'll": "how will",
"how's": "how is",
"i'd": "i would",
"i'd've": "i would have",
"i'll": "i will",
"i'll've": "i will have",
"i'm": "i am",
"i've": "i have",
"isn't": "is not",
"it'd": "it would",
"it'd've": "it would have",
"it'll": "it will",
"it'll've": "it will have",
"it's": "it is",
"let's": "let us",
"ma'am": "madam",
"mayn't": "may not",
"might've": "might have",
"mightn't": "might not",
"mightn't've": "might not have",
"must've": "must have",
"mustn't": "must not",
"mustn't've": "must not have",
"needn't": "need not",
"needn't've": "need not have",
"o'clock": "of the clock",
```

```
"oughtn't": "ought not",
"oughtn't've": "ought not have",
"shan't": "shall not",
"sha'n't": "shall not",
"shan't've": "shall not have",
"she'd": "she would",
"she'd've": "she would have",
"she'll": "she will",
"she'll've": "she will have",
"she's": "she is",
"should've": "should have",
"shouldn't": "should not",
"shouldn't've": "should not have",
"so've": "so have",
"so's": "so as",
"that'd": "that would",
"that'd've": "that would have",
"that's": "that is",
"there'd": "there would",
"there'd've": "there would have",
"there's": "there is",
"they'd": "they would",
"they'd've": "they would have",
"they'll": "they will",
"they'll've": "they will have",
"they're": "they are",
"they've": "they have",
"to've": "to have",
"wasn't": "was not",
"we'd": "we would",
"we'd've": "we would have",
"we'll": "we will",
"we'll've": "we will have",
"we're": "we are",
"we've": "we have",
"weren't": "were not",
"what'll": "what will",
"what'll've": "what will have",
"what're": "what are",
"what's": "what is",
"what've": "what have",
"when's": "when is",
"when've": "when have",
"where'd": "where did",
"where's": "where is",
"where've": "where have",
"who'll": "who will",
"who'll've": "who will have",
"who's": "who is",
"who've": "who have",
"why's": "why is",
"why've": "why have",
"will've": "will have",
"won't": "will not",
"won't've": "will not have",
"would've": "would have",
"wouldn't": "would not",
"wouldn't've": "would not have",
"y'all": "you all",
"y'all'd": "you all would",
"y'all'd've": "you all would have",
"y'all're": "you all are",
"y'all've": "you all have",
"you'd": "you would",
"you'd've": "you would have",
```

```
"you'd": "you would",
"you'd've": "you would have",
"you'll": "you will",
"you'll've": "you will have",
"you're": "you are",
"you've": "you have",
}
# The code for expanding contraction words
def expand_contractions(text, contraction_mapping =  CONTRACTION_MAP):
    """expand shortened words to the actual form.
       e.g. don't to do not

       arguments:
            input_text: "text" of type "String".

       return:
            value: Text with expanded form of shorthened words.

       Example:
       Input : ain't, aren't, can't, cause, can't've
       Output :  is not, are not, cannot, because, cannot have

     """
    # Tokenizing text into tokens.
    list_Of_tokens = text.split(' ')

    # Checking for whether the given token matches with the Key & replacing word with key's value.

    # Check whether Word is in lidt_Of_tokens or not.
    for Word in list_Of_tokens:
        # Check whether found word is in dictionary "Contraction Map" or not as a key.
         if Word in CONTRACTION_MAP:
               # If Word is present in both dictionary & list_Of_tokens, replace that word with the key value.
               list_Of_tokens = [item.replace(Word, CONTRACTION_MAP[Word]) for item in list_Of_tokens]

    # Converting list of tokens to String.
    String_Of_tokens = ' '.join(str(e) for e in list_Of_tokens)
    return String_Of_tokens
```

- Remove Special Characters

Step5: Remove special characters

In [17]:
```
# The code for removing special characters
def removing_special_characters(text):
    """Removing all the special characters except the one that is passed within
       the regex to match, as they have imp meaning in the text provided.


    arguments:
         input_text: "text" of type "String".

    return:
        value: Text with removed special characters that don't require.

    Example:
    Input : Hello, K-a-j-a-l. Thi*s is $100.05 : the payment that you will recieve! (Is this okay?)
    Output :  Hello, Kajal. This is $100.05 : the payment that you will recieve! Is this okay?

    """
    # The formatted text after removing not necessary punctuations.
    Formatted_Text = re.sub(r"[^a-zA-Z0-9:$-,%.?!]+", ' ', text)
    # In the above regex expression,I am providing necessary set of punctuations that are frequent in this particular dataset.
    return Formatted_Text
```

Punctuation	Description
,.?!	These are some frequent punctuations that occurs a lot and needed to preserve as to understand the context of text.
:	This one is also frequent as per the Dataset. It is important to keep because it is giving sense whenever there is an occurrence of time like: 9:05 p.m.
%	This one is also frequently used in many articles and talking more precisely about the data, facts & figures.
$	This one is used in many articles where prices are considered. So, omitting this symbol will not give much sense about those prices that left as just some numbers only.

- Remove Stopwords

Step6: Remove stopwords

In [18]:
```
# The code for removing stopwords
stoplist = stopwords.words('english')
stoplist = set(stoplist)
def removing_stopwords(text):
    """This function will remove stopwords which doesn't add much meaning to a sentence
       & they can be remove safely without comprimising meaning of the sentence.

    arguments:
         input_text: "text" of type "String".

    return:
        value: Text after omitted all stopwords.

    Example:
    Input : This is Kajal from delhi who came here to study.
    Output : ["'This", 'Kajal', 'delhi', 'came', 'study', '.', "'"]

   """
    # repr() function actually gives the precise information about the string
    text = repr(text)
    # Text without stopwords
    No_StopWords = [word for word in word_tokenize(text) if word.lower() not in stoplist ]
    # Convert list of tokens_without_stopwords to String type.
    words_string = ' '.join(No_StopWords)
    return words_string
```

- Correct Mis-Spelled Words in Text

Step8: Correct mis-spelled words in text

In [19]:
```
# The code for spelling corrections
def spelling_correction(text):
    '''
    This function will correct spellings.

    arguments:
         input_text: "text" of type "String".

    return:
        value: Text after corrected spellings.

    Example:
    Input : This is Oberois from Dlhi who came heree to studdy.
    Output : This is Oberoi from Delhi who came here to study.


    '''
    # Check for spellings in English language
    spell = Speller(lang='en')
    Corrected_text = spell(text)
    return Corrected_text
```

- Lemmatization

Step7: Lemmatization

In [20]:
```
# The code for lemmatization
w_tokenizer = nltk.tokenize.WhitespaceTokenizer()
lemmatizer = nltk.stem.WordNetLemmatizer()
def lemmatization(text):
    """This function converts word to their root words
       without explicitely cut down as done in stemming.

    arguments:
         input_text: "text" of type "String".

    return:
        value: Text having root words only, no tense form, no plural forms

    Example:
    Input : text reduced
    Output :  text reduce

   """
    # Converting words to their root forms
    lemma = [lemmatizer.lemmatize(w,'v') for w in w_tokenizer.tokenize(text)]
    return lemma
```

After we defined these *Data Normalization* techniques, we combine them into a single function.

Step9: Putting all in single function

In [21]:

```
# Writing main function to merge all the preprocessing steps.
def text_preprocessing(text, emoticons=True,accented_chars=True, contractions=True, lemma = False,
                       extra_whitespace=True, newlines_tabs=True, repeatition=True,
                      lowercase=True, punctuations=False, mis_spell=False,
                      remove_html=True, links=True,  special_chars=False,
                      stop_words=False):
    """
    This function will preprocess input text and return
    the clean text.
    """
    if emoticons == True: #remove emojis
        Data = remove_Emojis(text)

    if newlines_tabs == True: #remove newlines & tabs.
        Data = remove_newlines_tabs(Data)

    if remove_html == True: #remove html tags
        Data = strip_html_tags(Data)

    if links == True: #remove links
        Data = remove_links(Data)

    if extra_whitespace == True: #remove extra whitespaces
        Data = remove_whitespace(Data)

    if accented_chars == True: #remove accented characters
        Data = accented_characters_removal(Data)

    if lowercase == True: #convert all characters to lowercase
        Data = lower_casing_text(Data)

    if repeatition == True: #Reduce repeatitions
        Data = reducing_incorrect_character_repeatation(Data)

    if contractions == True: #expand contractions
        Data = expand_contractions(Data)

    if punctuations == True: #remove punctuations
        Data = removing_special_characters(Data)

    stoplist = stopwords.words('english')
    stoplist = set(stoplist)

    if stop_words == True: #Remove stopwords
        Data = removing_stopwords(Data)

    spell = Speller(lang='en')

    if mis_spell == True: #Check for mis-spelled words & correct them.
        Data = spelling_correction(Data)

    w_tokenizer = nltk.tokenize.WhitespaceTokenizer()
    lemmatizer = nltk.stem.WordNetLemmatizer()

    if lemma == True: #Converts words to lemma form.
        Data = lemmatization(Data)


    return Data
```

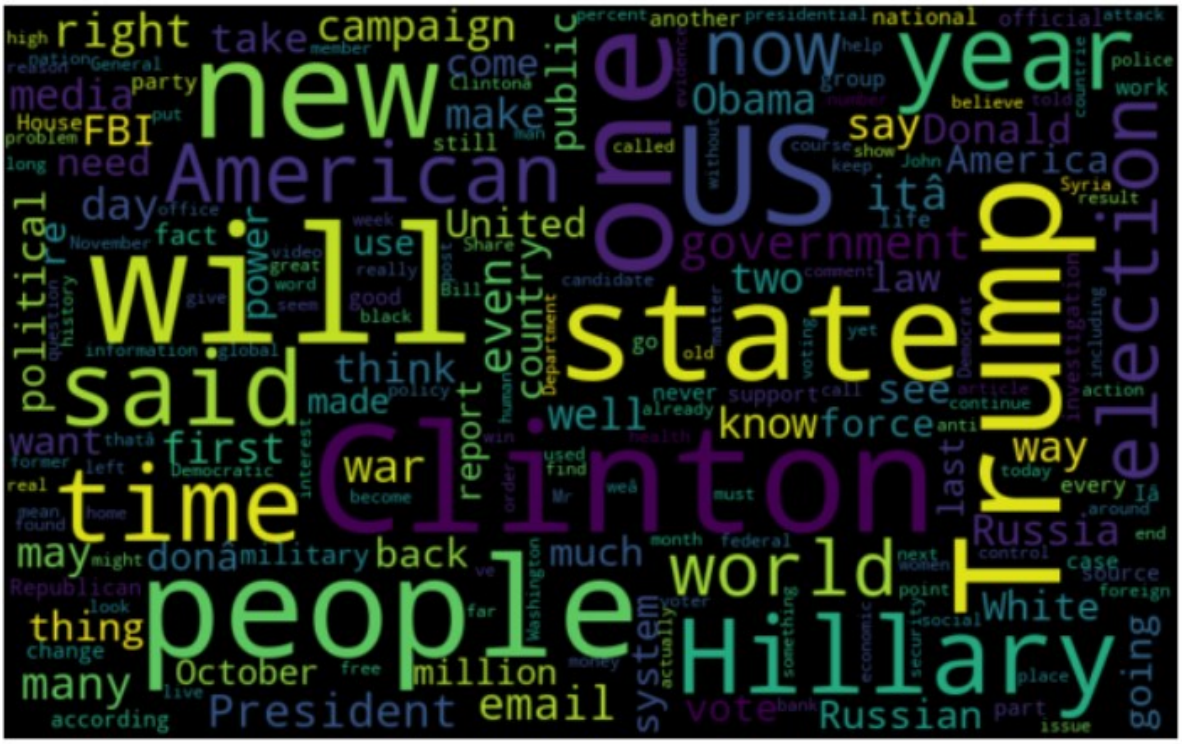
2. **Cleaned_Data.csv**
   This csv file contains 7754 data and is saved after the data is done preprocessing. This data will be used for data analysis.

	title	text	label	Processed_Content	Processed_Title
2	You Can Smell Hillaryâ€™s Fear	Daniel Greenfield, a	FAKE	daniel greenfield, a shill	you can smell hillary's fear
3	Watch The Exact Moment Paul Ryan Committed Pol	Google Pinterest Digg	FAKE	google pinterest digg lir	watch the exact moment paul ryan committed political suicide at a trump rally (video)
4	Kerry to go to Paris in gesture of sympathy	U.S. Secretary of State	REAL	u.s. secretary of state j	kerry to go to paris in gesture of sympathy
5	Bernie supporters on Twitter erupt in anger against t	â€" Kaydee King	FAKE	- kaydee king (@kaydee	bernie supporters on twitter erupt in anger against the dnc: 'we tried to warn you!'
6	The Battle of New York: Why This Primary Matters	It's primary day in New	REAL	it's primary day in new	the battle of new york: why this primary matters
7	Tehran, USA		FAKE	i'm not an immigrant, t	tehran, usa
8	Girl Horrified At What She Watches Boyfriend Do Af	Share This Baylee	FAKE	share this baylee lucian	girl horrified at what she watches boyfriend do after he left facetime on
9	â€˜Britainâ€™s Schindlerâ€™ Dies at 106	A Czech stockbroker wh	REAL	a czech stockbroker wh	'britain's schindler' dies at 106
10	Fact check: Trump and Clinton at the 'commander-i	Hillary Clinton and	REAL	hillary clinton and dona	fact check: trump and clinton at the 'commander-in-chief' forum
11	Iran reportedly makes new push for uranium conces	Iranian negotiators	REAL	iranian negotiators rep	iran reportedly makes new push for uranium concessions in nuclear talks
12	With all three Clintons in Iowa, a glimpse at the fire	CEDAR RAPIDS, Iowa	REAL	cedar rapids, iowa - "i i	with all three clintons in iowa, a glimpse at the fire that has eluded hillary clinton's campaign
13	Donald Trumpâ€™s Shockingly Weak Delegate Gam	Donald Trumpâ€™s	REAL	donald trump's organiz	donald trump's shockingly weak delegate game somehow got even worse
14	Strong Solar Storm, Tech Risks Today | S0 News Oct	Click Here To Learn	FAKE	click here to learn mor	strong solar storm, tech risks today | s0 news oct.26.2016 [video]
15	10 Ways America Is Preparing for World War 3	October 31, 2016 at	FAKE	october 31, 2016 at 4:5	10 ways america is preparing for world war 3
16	Trump takes on Cruz, but lightly	Killing Obama administr	REAL	killing obama administr	trump takes on cruz, but lightly
17	How women lead differently	As more women move	REAL	as more women move	how women lead differently
18	Shocking! Michele Obama & Hillary Caught Glamoriz	Shocking! Michele	FAKE	shocking! michele obar	shocking! michele obama & hillary caught glamorizing date rape promoters
19	Hillary Clinton in HUGE Trouble After America Notic	0	FAKE	0 hillary clinton has bar	hillary clinton in huge trouble after america noticed sick thing hidden in this picture. * liberty writers news
20	What's in that Iran bill that Obama doesn't like?	Washington (CNN) For	REAL	washington (cnn) for m	what's in that iran bill that obama doesn't like?
21	The 1 chart that explains everything you need to kn	While paging through	REAL	while paging through p	the 1 chart that explains everything you need to know about partisanship in america
22	The slippery slope to Trumpâ€™s proposed ban on M	With little fanfare this	REAL	with little fanfare this f	the slippery slope to trump's proposed ban on muslims
23	Episode #160 â€“ SUNDAY WIRE: â€˜Hail to the Dep	November 13, 2016 By	FAKE	november 13, 2016 by :	episode #160 - sunday wire: 'hail to the deplorables' with special guest randy j
24	Hillary Clinton Makes A Bipartisan Appeal on Staten	Hillary Clinton told a	REAL	hillary clinton told a sta	hillary clinton makes a bipartisan appeal on staten island
25	New Senate majority leaderâ€™s main goal for GOP	Mitch McConnell has	REAL	mitch mcconnell has ar	new senate majority leader's main goal for gop: don't be scary

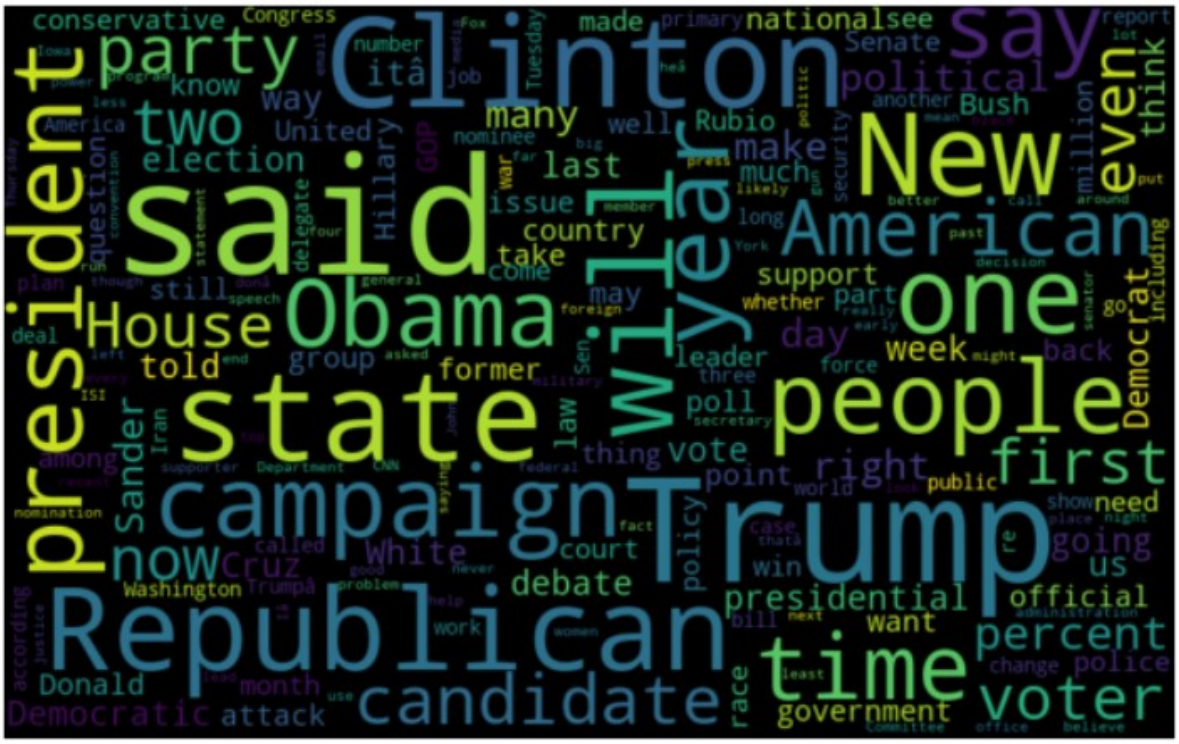
3. Data Visualization

This folder includes one Python script **"Visualization_with_Stopwords.ipynb"**. The primary purpose of this Python script is to explore the dataset's data analysis. This data analysis will provide information regarding the number of columns that contain valuable features, the significance of each feature concerning the problem statement you wish to solve, the distribution of the data per label, and the identification of frequent word counters in both instances labelled "Fake News" and "Real News."

Word Cloud: Fake News



Word Cloud: Real News



4. ML Pipeline & Deployment

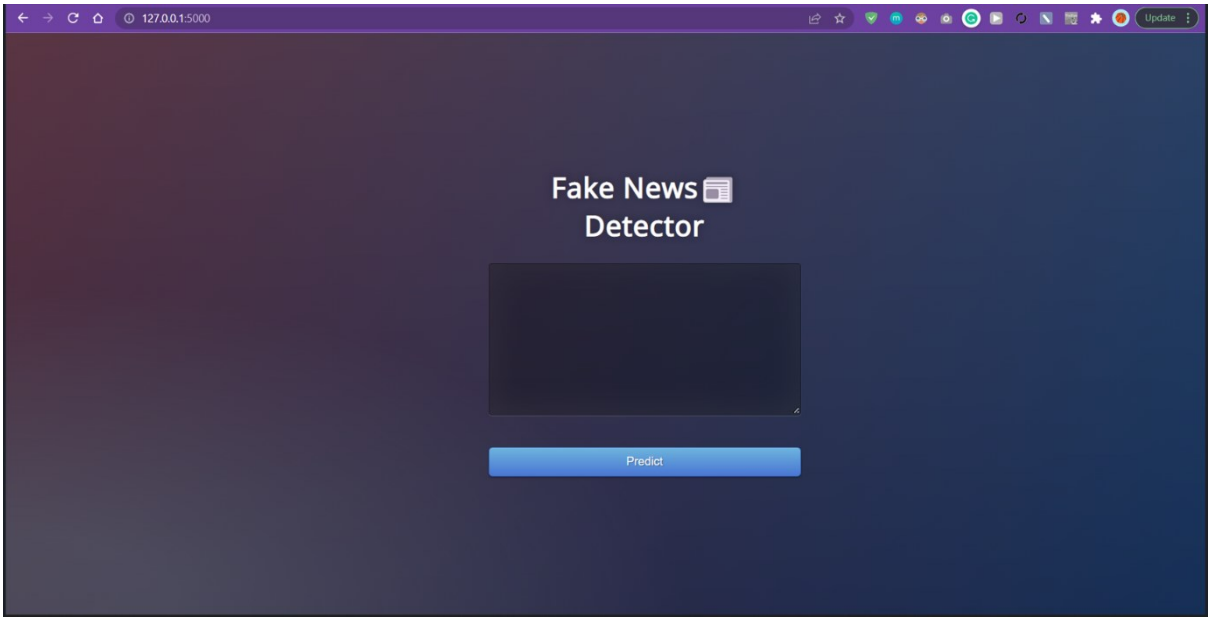
This folder includes two Python script, one pkl file and txt file:

1. Fake_News_Det.py
   The code is used to deployment purpose.
2. Modelling With Stopwords.ipynb
   This script consists of two sections for development purpose:
   - Constructing a machine-learning pipeline.
   - Selecting the most suitable Machine Learning models.
3. Model.pkl
   The final best model that was selected for the production in the deployment stage.
4. Requirements.txt
   The list of all the required libraries for the project.

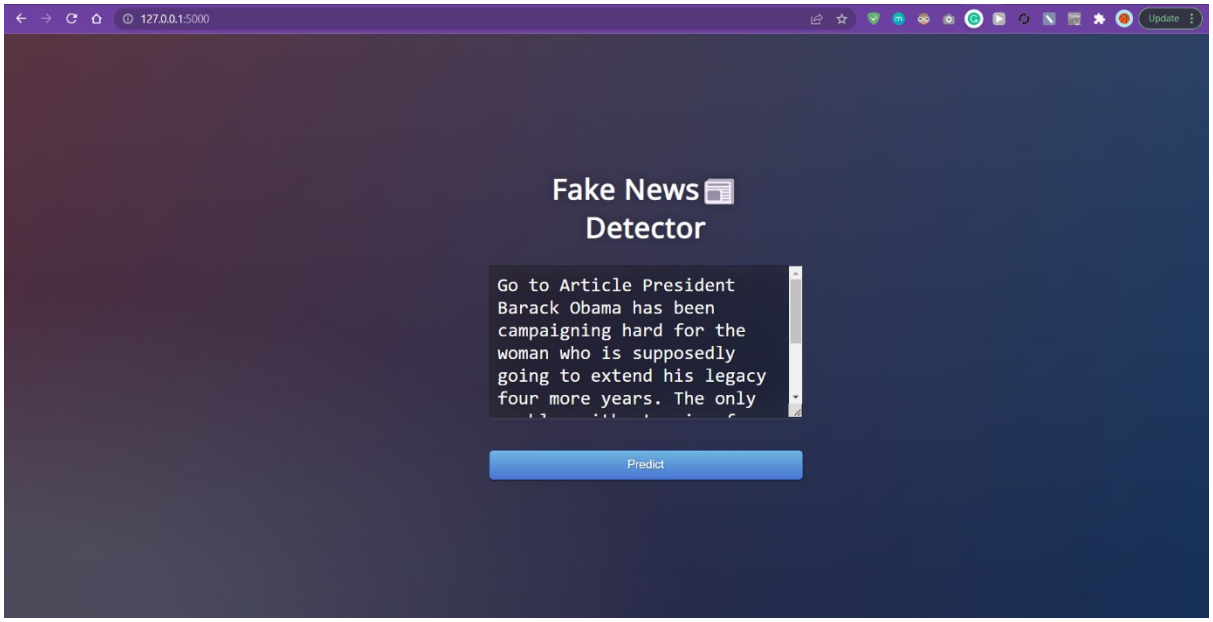
```
scikit-learn == 0.22.1
pandas
numpy
Flask
```

Result

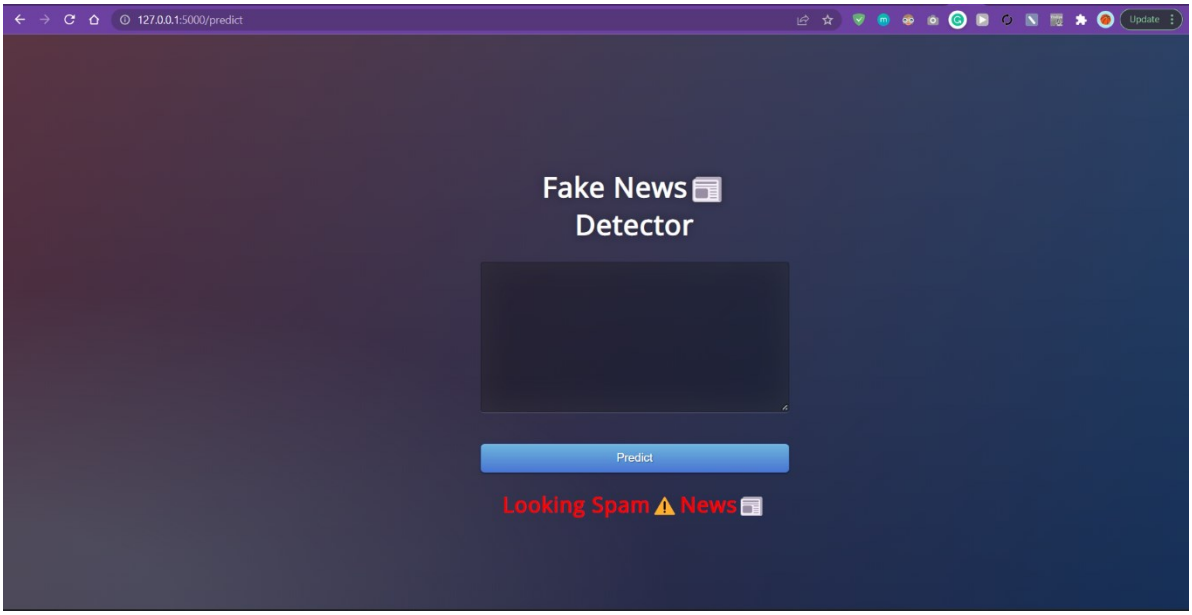
1. Running the **"Fake_News_Det.py"**. A interactive dashboard will appear like follows:



2. Input one part of the news for which you would like to see results:



3. "Fake News" or "Real News" will display.



7.0 Project Closing

PROJECT CLOSING

A. Customer Acceptance Form

LAE IT Company

CLIENT ACCEPTANCE FORM			
Project Name	Fake News Detection System		
Project Number	FNDC123450		
Project Sponsor	ABC News Company		
Project Manager	Liew Sze Wen	Liew123@gmail.com	012-3456789
	(name)	(email)	(phone number)
Project Description	Fake News Detection System classifies news stories using AI, NLP, and Machine Learning; the news detection and classification module is the primary focus. Users can enter the news on our website, and the website will automatically recognize and display the results.		

LIST OF CLIENT DELIVERABLES COMPLETED	
Deliverables	1. Budget Report 2. Progress Report 3. Process Efficiency 4. Faster Response Time 5. Website
Acceptance Response	☑ Accepted ☐ Not Accepted

PREPARED BY			
Project Manager	Liew Sze Wen		12-11-2022
	(name)	(signature)	(date)
REVIEWED BY			
Delivery Manager	Adella Java Dirgantari		12-11-2022
	(name)	(signature)	(date)

Page 1 of 2

APPROVED BY			
Sponsor	Felicia Chia		13-11-2022
	(name)	(signature)	(date)

B. Lesson Learned Document

LESSONS LEARNED REPORT

PROJECT TITLE	DATE OF REPORT
Fake News Detection System	19/11/2022

TEAM MEMBERS	PROJECT MANAGER
1. Adella Java Dirgantari 2. Ken Prameswari Caesarella Aryaputri	Liew Sze Wen

GOALS

What were our goals in this project?	Were those goals achieved? (Y / N)
To attain the highest feasible levels of accuracy in detecting fraudulent or misleading news.	Y

What new goals were added and achieved by the project's end?
To increase the length of the input news and the system is created more user-friendly.

LESSONS LEARNED

What went well on this project?	How would you improve these processes for next time, if applicable?	Assigned To
The system can detect the authenticity of the news with 98% accuracy.	Train and test more dataset to increase the accuracy.	Ken Prameswari Caesarella Aryaputri
The project is completed on time according to the Gantt Chart.	No improvements needed here.	N/A
User testing was better developed this sprint.	No improvements needed here.	N/A

What did not go well on this project?	How would you improve these processes for next time, if applicable?	Assigned To
Priorities were not clear, and members did not take them into account.	Create a new list prioritized by importance so that member can emphasize the priorities.	Adella Java Dirgantari
One of the back-end developers missed his coding because of computer breakdown.	Conduct the risk management to all possible problems, Back up the coding every time.	Ken Prameswari Caesarella Aryaputri

Further Comments	Overall, the system performs well. This system is also very easy to use.

C. Final Report

FAKE NEWS DETECTION SYSTEM

1.0 PROJECT OBJECTIVES

The purpose of LAE IT Company's false news detection system was to establish an Artificial Intelligence (AI) system capable of detecting the veracity of news items. Apart from that, we developed this system to identify "Fake" news from "Real" news.

2.0 PROJECT SCOPE

To attain the highest feasible levels of accuracy in detecting fraudulent or misleading news.

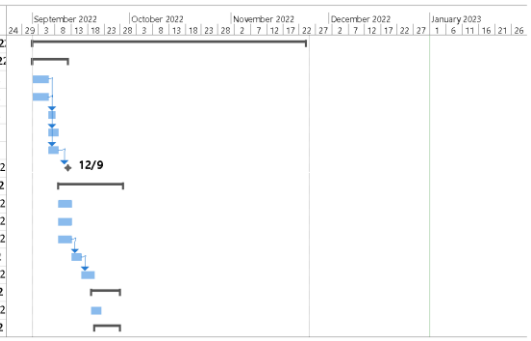
3.0 PROJECT RESULT SUMMARY

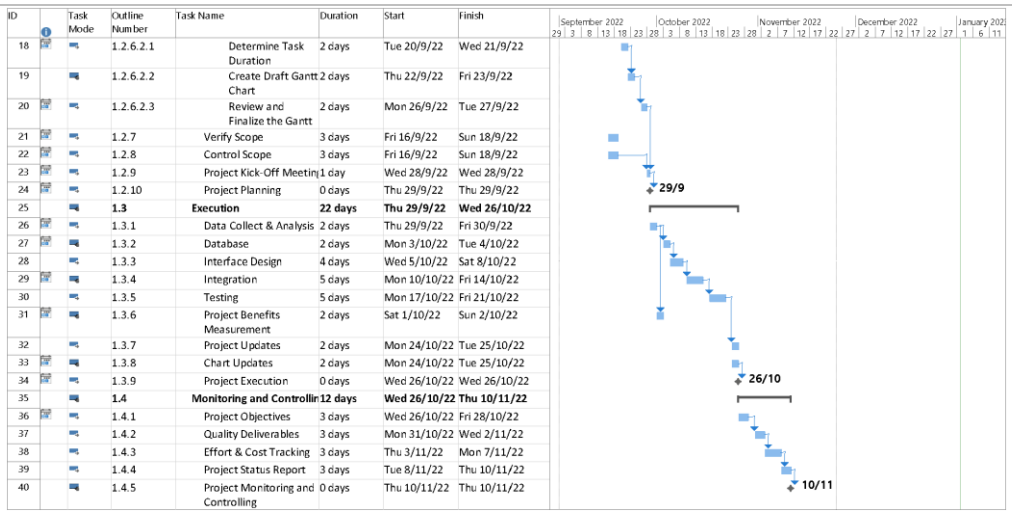
Fake News Detection System able to detect the "fake" news with the accuracy of 98%.

4.0 SCHEDULE

Throughout the project's progress, the actual timetable is identical to the Gantt chart schedule we created at the outset of the planning phase.

ID	Task Mode	Outline Number	Task Name	Duration	Start	Finish
1		1	**Fake News System Detection**	**70 days**	**Thu 1/9/22**	**Thu 24/11/22**
2		1.1	**Initiating**	**8 days**	**Thu 1/9/22**	**Mon 12/9/22**
3		1.1.1	Project Goal	3 days	Thu 1/9/22	Mon 5/9/22
4		1.1.2	Project Charter	3 days	Thu 1/9/22	Mon 5/9/22
5		1.1.3	Project Charter Revision	2 days	Tue 6/9/22	Wed 7/9/22
6		1.1.4	Key Skateholders	3 days	Tue 6/9/22	Thu 8/9/22
7		1.1.5	Project Team	3 days	Tue 6/9/22	Thu 8/9/22
8		1.1.6	Project Initiation	0 days	Mon 12/9/22	Mon 12/9/22
9		1.2	**Planning**	**19 days**	**Fri 9/9/22**	**Thu 29/9/22**
10		1.2.1	Define Scope	3 days	Fri 9/9/22	Mon 12/9/22
11		1.2.2	Define Requirements	3 days	Fri 9/9/22	Mon 12/9/22
12		1.2.3	Define Resources	3 days	Fri 9/9/22	Mon 12/9/22
13		1.2.4	Roles and Responsibiliti	3 days	Tue 13/9/22	Thu 15/9/22
14		1.2.5	Risk Analysis	4 days	Fri 16/9/22	Mon 19/9/22
15		1.2.6	**Project Plan**	**9 days**	**Mon 19/9/2**	**Tue 27/9/22**
16		1.2.6.1	Prepare WBS	3 days	Mon 19/9/22	Wed 21/9/22
17		1.2.6.2	**Prepare Schedule**	**8 days**	**Tue 20/9/22**	**Tue 27/9/22**





ID	Task Mode	Outline Number	Task Name	Duration	Start	Finish
18		1.2.6.2.1	Determine Task Duration	2 days	Tue 20/9/22	Wed 21/9/22
19		1.2.6.2.2	Create Draft Gantt Chart	2 days	Thu 22/9/22	Fri 23/9/22
20		1.2.6.2.3	Review and Finalize the Gantt	2 days	Mon 26/9/22	Tue 27/9/22
21		1.2.7	Verify Scope	3 days	Fri 16/9/22	Sun 18/9/22
22		1.2.8	Control Scope	3 days	Fri 16/9/22	Sun 18/9/22
23		1.2.9	Project Kick-Off Meeting	1 day	Wed 28/9/22	Wed 28/9/22
24		1.2.10	Project Planning	0 days	Thu 29/9/22	Thu 29/9/22
25		**1.3**	**Execution**	**22 days**	**Thu 29/9/22**	**Wed 26/10/22**
26		1.3.1	Data Collect & Analysis	2 days	Thu 29/9/22	Fri 30/9/22
27		1.3.2	Database	2 days	Mon 3/10/22	Tue 4/10/22
28		1.3.3	Interface Design	4 days	Wed 5/10/22	Sat 8/10/22
29		1.3.4	Integration	5 days	Mon 10/10/22	Fri 14/10/22
30		1.3.5	Testing	5 days	Mon 17/10/22	Fri 21/10/22
31		1.3.6	Project Benefits Measurement	2 days	Sat 1/10/22	Sun 2/10/22
32		1.3.7	Project Updates	2 days	Mon 24/10/22	Tue 25/10/22
33		1.3.8	Chart Updates	2 days	Mon 24/10/22	Tue 25/10/22
34		1.3.9	Project Execution	0 days	Wed 26/10/22	Wed 26/10/22
35		**1.4**	**Monitoring and Controllin**	**12 days**	**Wed 26/10/22**	**Thu 10/11/22**
36		1.4.1	Project Objectives	3 days	Wed 26/10/22	Fri 28/10/22
37		1.4.2	Quality Deliverables	3 days	Mon 31/10/22	Wed 2/11/22
38		1.4.3	Effort & Cost Tracking	3 days	Thu 3/11/22	Mon 7/11/22
39		1.4.4	Project Status Report	3 days	Tue 8/11/22	Thu 10/11/22
40		1.4.5	Project Monitoring and Controlling	0 days	Thu 10/11/22	Thu 10/11/22

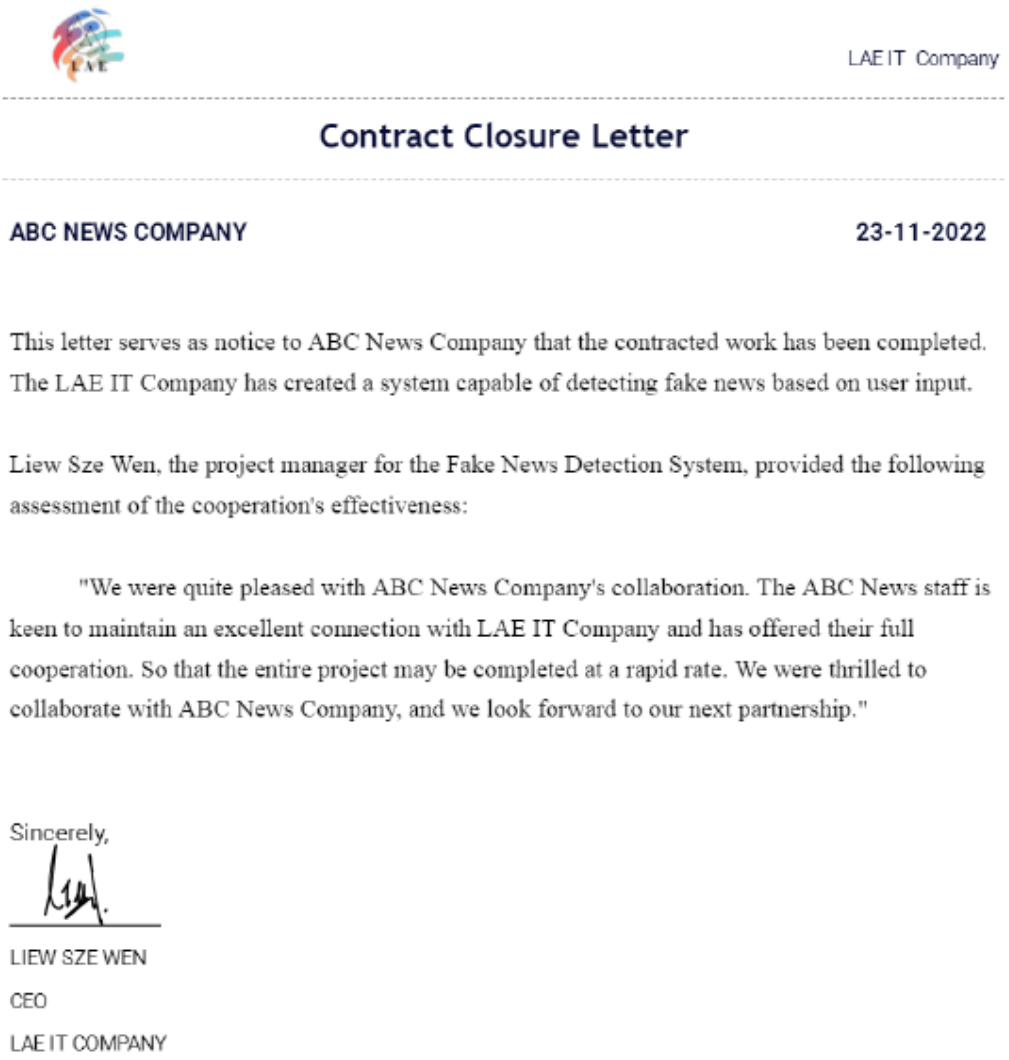
ID	Task Mode	Outline Number	Task Name	Duration	Start	Finish
41		**1.5**	**Closing**	**11 days**	**Fri 11/11/22**	**Thu 24/11/22**
42		1.5.1	Acceptance of Project Deliverables	4 days	Fri 11/11/22	Mon 14/11/22
43		1.5.2	Final Project Report	2 days	Tue 15/11/22	Wed 16/11/22
44		1.5.3	Final Project Presentatic	1 day	Thu 17/11/22	Thu 17/11/22
45		1.5.4	Document the Lesson Learned	2 days	Fri 18/11/22	Mon 21/11/22
46		1.5.5	Formalize Closure	2 days	Tue 22/11/22	Wed 23/11/22
47		1.5.6	Project Closing	0 days	Thu 24/11/22	Thu 24/11/22

5.0 BUDGET

Description	Estimated Cost	Overall Project
Project Manager	RM5000	RM5000
Project Team Members		
1. Procurement Manager	RM3500	RM3500
2. Risk Manager	RM3500	RM3500
3. Administrative Manager	RM3500	RM3500
4. Financial Analyst	RM2500	RM2500
5. Project Scheduler	RM2500	RM2500
6. Quality Manager	RM3500	RM3500
Installation Software	RM5500	RM5000
Licensed Software	RM4000	RM4000
Testing	RM13000	RM7500
System maintenance	RM10000	RM8000
TOTAL	RM56500	RM48500

6.0 TRANSITION PLAN
I. Timing maintenance system II. Handling errors and update of the system.

D. Close Contract



LAE IT Company

Contract Closure Letter

ABC NEWS COMPANY **23-11-2022**

This letter serves as notice to ABC News Company that the contracted work has been completed. The LAE IT Company has created a system capable of detecting fake news based on user input.

Liew Sze Wen, the project manager for the Fake News Detection System, provided the following assessment of the cooperation's effectiveness:

"We were quite pleased with ABC News Company's collaboration. The ABC News staff is keen to maintain an excellent connection with LAE IT Company and has offered their full cooperation. So that the entire project may be completed at a rapid rate. We were thrilled to collaborate with ABC News Company, and we look forward to our next partnership."

Sincerely,

LIEW SZE WEN

CEO

LAE IT COMPANY