TL25 Trust Indicator - Delivery Plan

1.Project Information

Project Title: Trust Indicator

Team Members: Juliang Xiao, Xinyang Li, Yushan Zhang, Kun Gong, Chu Zhang, Haifan Yang

Semester: S1 2025

Tutor: Peter Outteridge

Stakeholder (Client): Sabrina Caldwell

2.Project Overview

Architecture

- Flask-based web application with SQLite/SQL Alchemy database
- Modular design with separated routes, models, and services

Core Components

- AIGC Detector: Alibaba Cloud integration for AI-generated content detection
- Metadata Extractor: EXIF data extraction from images for authenticity analysis
- User System: Authentication, profiles, and trust preferences
- Database Models: User, Image, Trust Profile, and Feedback structures

Key Technical Features

- Image processing pipeline (upload → metadata extraction → AI detection → storage)
- RESTful API endpoints for frontend integration
- Binary image storage with metadata indexing
- Fallback mechanisms for API service disruptions

Technology Stack

- Backend: Python 3.8+, Flask, SQL Alchemy
- External APIs: Alibaba Cloud AIGC detection, ImgBB for image hosting
- Libraries: PIL/Pillow, Werkzeug, Flask extensions

3. MVP Definition and Scope

The Minimum Viable Product (MVP) will be a functional web application that demonstrates the core purpose of helping users evaluate image authenticity. It will include:

1. A simple web interface for users to upload and view images

2. Basic AIGC detection functionality using the third part API integration

3. Fundamental metadata extraction from uploaded images

4. Clear visual indicators showing AI probability and basic metadata completeness

5. Simple image gallery with credibility information display

4. Expected Deliverables

• Live project website (deployment URL)

• Technical documentation

• Source code (GitHub repository link)

• Meeting summary and handover confirmation from client

5. Task Checklists

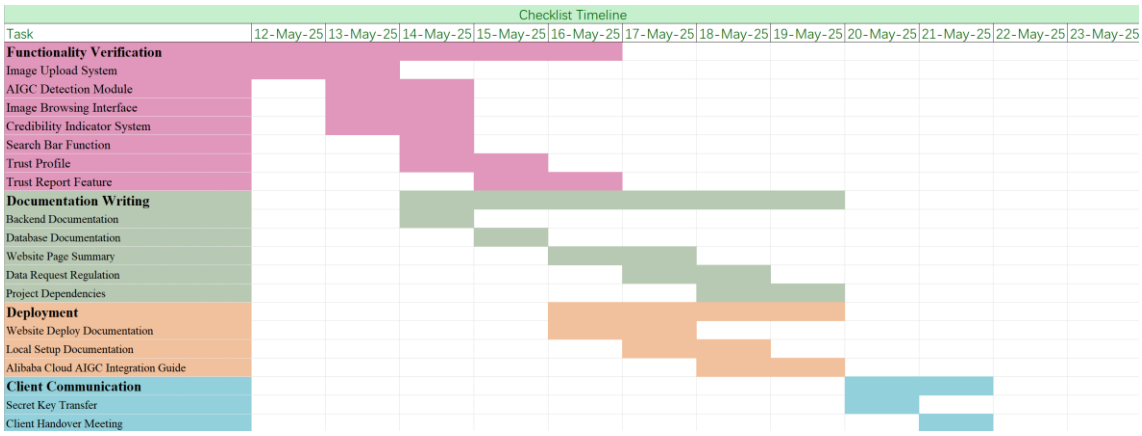
ID	Task Name	Description	Assignee	Deadline	Completion Criteria	Status
1	Image Upload System	Verify the process of image uploading, storage, and security	Xinyang Li	14/05/2025	Image upload and storage function operates correctly	☑/☐
2	AIGC Detection Module	Test API integration and AI-generated content detection	Juliang Xiao	14/05/2025	AIGC detection meets accuracy standards and returns correct results	☑/☐
3	Image Browsing Interface	Test the gallery and image detail page functionality	Yushan Zhang	14/05/2025	Browsing interface runs smoothly and displays information completely	☑/☐
4	Credibility Indicator System	Verify credibility scoring and visual indicators	Kun Gong	14/05/2025	Credibility indicators are calculated accurately and displayed clearly	☑/☐
5	Search Bar Function	Test image search	Chu Zhang	14/05/2025	Search responds	☑/

		function and accuracy of displayed results			correctly to user queries and shows relevant results	☐
6	Trust Profile	Users select trust indicators in their profile to personalize image credibility analysis.	Kun Gong	14/05/2025	Users save trust snippets and receive a customized Trust Report during image analysis.	☑/☐
7	Trust Report Feature	Test the generation and display of comprehensive trust reports	Yushan Zhang	14/05/2025	Trust reports contain complete information and are displayed correctly	☑/☐
8	Backend Documentation	Review and update all backend API endpoint documentation to match the code	Xinyang Li, Haifan Yang	16/05/2025	Backend API documentation is complete and accurate, covering all current endpoints	☑/☐
9	Database Documentation	Review and revise the database design documentation, update data models and schema diagrams	Xinyang Li	16/05/2025	Database docs reflect current data model structure with clear relationships	☑/☐
10	Website Page Summary	Update functional documentation for all UI pages and their features	Xinyang Li	16/05/2025	Page documentation is comprehensive and clearly describes all UI functionality	☑/☐
11	Data Request Regulation	Validate request type documentation to ensure correct formats and parameters	Xinyang Li	16/05/2025	Request type documentation is properly formatted with usable code examples	☑/☐

12	Project Dependencies	Document all Python library dependencies, version requirements, and install instructions	Yushan Zhang	16/05/2025	Dependency list is complete with clear, executable installation guidelines	☑/☐
13	Website Deploy Documentation	Update the deployment guide with server setup, environment variable configuration, and startup steps	Xinyang Li	19/05/2025	Deployment documentation is comprehensive with clear, executable steps	☑/☐
14	Local Setup Documentation	Create a local development setup guide including dependency installation and configuration	Xinyang Li	19/05/2025	Local setup guide is detailed, complete, and easy for newcomers to follow	☑/☐
15	Alibaba Cloud AIGC Integration Guide	Document API configuration, usage instructions, and result interpretation for AliCloud AIGC detection	Juliang Xiao	19/05/2025	Integration guide includes key setup, usage examples, and troubleshooting instructions	☑/☐
16	Secret Key Transfer	Review and consolidate all system keys, and deliver them to the client via secure email	Chuzhang	19/05/2025	All keys are verified, properly documented, and successfully sent to the client	☑/☐
17	Client Handover Meeting	Client Handover Meeting	All members	20/05/2025	Client Handover Meeting	☑/☐
18	Export All Jira PBIs	Implement functionality to export all Product	Xinyang Li	20/05/2025	1. Supports CSV/Excel/JSON formats 2. Includes all	☑/☐

		Backlog Items from Jira	key PBI fields 3. Handles large datasets

6.Timeline:



7. Risk Management

The following table lists identified risks, their potential impact, likelihood, and corresponding mitigation strategies for project delivery.

Risk ID	Risk Description	Potential Impact	Likelihood	Mitigation Strategy
R1	Dependency on Outside Cloud AIGC API service	Service unavailability or quota exceeded may block detection features	Medium	Implement local fallback or cache recent results to reduce API reliance
R2	Model inaccuracy from third-party API	Incorrect AI detection results may mislead users	Medium	Display a disclaimer and provide confidence levels with explanations
R3	Team members unavailable due to exams or personal commitments	Delay in task completion near deadlines	High	Reassign tasks early, cross-train team members on critical modules

R4	API key leakage or misuse	Security breach or service suspension	Low	Store sensitive keys appropriately, rotate keys regularly
R5	Incomplete testing due to time constraints	Undetected bugs	High	Allocate dedicated time for testing

Risk Review Process

- Risks will be reviewed and updated during the weekly team meetings.
- New risks or changes in likelihood/impact will be recorded.
- Mitigation progress will be tracked and reviewed by the project scrum master.

8. Non-Functional Requirements

In addition to delivering the required functionalities, the Trust Indicator system must meet specific non-functional requirements to ensure performance, reliability, security, and maintainability. These requirements define how the system should behave under various conditions.

Performance

The website should process uploaded images and return detection results within 5 seconds (95th percentile) under normal load.

Availability

The deployed website should maintain at least 99% uptime during the assessment period.

Security

User data must be securely stored and accessed using authentication and authorization mechanisms.

Maintainability

Documentation Quality:
All features accompanied by comprehensive documentation, including setup, usage, and troubleshooting guides.
Code Readability:
Codes include inline comments to improve readability and future maintenance.

Usability

The system's web interface should be intuitive and user-friendly, providing clear feedback on actions such as upload success or detection failure.

9. Handover

The following documentation has been prepared to support a smooth transition and future maintenance. Each document provides details about a specific module or deployment process of the Trust Indicator:

README.md : General project overview

AIGC_DETECTOR_README.md : Guide to the AI-generated content detection module

deploy.md : Trust Indicator Service Deployment Guide

docs-backend.md : Backend system architecture

docs-database.md : Database schema and operations

docs-page.md : Page structure

docs-request-type.md : Document the different request types supported by the Trust Indicator system and their usage scenarios