

**TOBB ETU**

**Economy & Technology University**

**BIL 481**

**Project Management Plan (PMP)**

**Group: EYAY**

**Project: HAYAI ET**

**EYAY**

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**Contents**

[1. Project Overview 3](#_Toc213424635)

[2. Organization and Roles 4](#_Toc213424654)

[3. Objectives 5](#_Toc213424655)

[4. Project Schedule 6](#_Toc213424656)

[5. Budget and Resources 7](#_Toc213424657)

[6. Risk Management 7](#_Toc213424658)

[7. Communication Plan 8](#_Toc213424659)

[8. Change Management Plan 9](#_Toc213424660)

[9. Budget Plan 11](#_Toc213424661)

[10.Document-Specific Task Matrix 13](#_Toc213424662)

## 1. Project Overview

## Goals

## The primary goal of the "HAYAI ET" project is to develop a child-friendly social media platform that combines creativity, artificial intelligence, and safe social interaction. The platform aims to:​

## Encourage artistic expression by providing children with a digital space to upload and showcase their hand-drawn artwork.​

## Enhance creative learning through AI-powered transformation of children's drawings into various artistic styles (anime, cartoon, etc.).​

## Foster safe social interaction by enabling children to discover, like, comment on, and share artwork within a controlled, moderated environment.​

## Provide parental oversight through a parent admin role that allows guardians to monitor and manage their children's activities on the platform.​

## Build a secure community where children can connect with friends, view profiles, and interact through predefined, age-appropriate communication methods.​

## Deliverables

## The project will produce the following deliverables:

## Fully Functional Website - A web application that implements all core features including user authentication, photo upload, AI-based image transformation, social features (explore, like, comment), profile management, friend management, content moderation, and parental controls.

## GitHub Repository - A public or private repository containing all project documentation, code, and clear commit history showing individual contributions from each team member.

## PAs, Final Report and Presentation – PAs will be written during development process, final report and presentation about the platform will be delivered to the course instructor at the end of the semester.

## Stakeholders

## The key stakeholders for this project include:

## Primary Users (Children) - The target audience who will use the platform to upload their drawings, interact with AI-generated transformations, and engage socially with peers.​

## Parents/Guardians - Secondary users who will have admin access to monitor their children's activities, manage permissions, and ensure safe usage of the platform.​

## Course Instructor - Academic stakeholder who oversees the project, evaluates deliverables, and provides guidance throughout the development process.​

## Development Team - Team members responsible for designing, developing, testing, and deploying the platform.

## 2. Organization and Roles

The project team for **“HAYAI ET”** consists of four AI Engineering students: **Esra Alparslan, Yağız Can Akay, Muhammed Yusuf Kartal, and Ali Türkücü**. Each member has specific responsibilities aligned with their expertise, ensuring efficient development and delivery of the platform that allows children to upload, reimagine, and share their artwork using AI.

**Esra Alparslan** serves as the **AI Developer & Frontend Developer**, focusing on integrating AI-driven artwork transformation modules and developing the user-facing interface. She ensures a responsive, accessible, and child-friendly design while maintaining documentation consistency.

**Yağız Can Akay**, the **System Designer & LLM Specialist**, leads architectural and backend–frontend integration design. He implements large language model (LLM)–based processing and AI communication frameworks to ensure accurate, context-aware transformations and optimization.

**Muhammed Yusuf Kartal** acts as the **Project Manager & Database Designer**, coordinating all project phases and managing scheduling. He designs and maintains the database schema, ensuring data integrity, scalability, and safety compliance, while also overseeing requirement validation and testing.

**Ali Türkücü**, the **Backend Developer & Quality Assurance Lead**, develops backend services including authentication, data management, and AI communication endpoints. He ensures system reliability through security implementation and oversees testing, bug tracking, and performance validation.

Together, the team collaborates across all project phases — from requirements gathering and system design to integration, testing, and delivery — ensuring a cohesive and reliable web application.

## Objectives

By the end of the "HAYAI ET" project, the objective is to launch a fully functional, secure, and engaging web platform for children that seamlessly integrates artistic creation with artificial intelligence and safe social networking. The specific functionalities to be achieved are detailed below.​

**Core Functionalities**

* User Authentication and Profiles: Implement a secure sign-up and login system for users. Each user will have a personal profile featuring a customizable avatar instead of a real photo.​
* Art Upload and AI Transformation: Users will be able to upload images of their physical drawings from their devices. The platform's core feature will be its ability to take these uploaded drawings and use AI to recreate them in various artistic styles, such as "anime" or "cartoon," which will be stored in the user's personal gallery.​
* Database Integration: All user data, including original and AI-generated images, will be securely stored and managed in a MongoDB database.​

**Social and Community Features**

* Content Discovery and Interaction: An "Explore" page will allow users to discover artwork shared by others. They will be able to interact with these posts by "liking" them and posting comments selected from a predefined, age-appropriate list.​
* Sharing: Users will have the option to share both their original drawings and the AI-recreated versions with others on the platform.​
* Friendship and Profiles: The platform will support a friendship system, allowing users to add friends. Users can view their own profiles as well as the profiles of their friends by searching for their accounts.​

**Safety, Moderation, and Parental Controls**

* Content Moderation: A robust moderation system will be in place. This includes a process for screening and filtering all uploaded photos to ensure they are appropriate for a children's platform. Research into "photo guardrails" will inform this system.​
* Reporting Mechanism: Users will be able to report photos that they find inappropriate, which will then be reviewed by moderators.​
* Parental Administration: A crucial safety feature will be the "Parent's admin role," giving parents or guardians the ability to oversee and manage their child's account and activities on the platform.​

## 4. Project Schedule

**Project Timeline**

| **Phase** | **Start Date** | **End Date** | **Key Deliverables** | **Status** |
| --- | --- | --- | --- | --- |
| Requirements & Planning | Sep 15, 2025 | Oct 19, 2025 | Project Definition, Requirements, and Plan Documents | Completed |
| Design & Architecture | Oct 6, 2025 | Oct 19, 2025 | System architecture, UI/UX mockups, MongoDB schema | Completed |
| Core Development (Sprint 1) | Oct 6, 2025 | Oct 26, 2025 | Backend API, AI integration, frontend, upload/gallery features | Completed |
| Authentication & Social | Oct 20, 2025 | Nov 23, 2025 | Login system, user search, add friend, like/comment/share | In Progress |
| Database Integration | Nov 24, 2025 | Dec 7, 2025 | NoSQL database integration | Not Started |
| Safety & Moderation | Dec 8, 2025 | Dec 21, 2025 | Content filtering, reporting, parent controls | Not Started |

**Key Milestones**

* Oct 26: Prototype with AI transformation completed
* Nov 23: Social features (like, comment, share) complete
* Dec 7: NoSQL Database integration complete
* Dec 21: All safety features implemented, final testing complete
* Project Closure: December 21, 2025

## 5. Budget and Resources

**Human Resources**

* Project Manager: Oversees planning, coordination, and reporting.
* Frontend Developer: Builds UI components (React).
* Backend Developer: Manages authentication, APIs, and database (Python FastAPI, etc.).
* AI Integration Engineer: Connects with external AI services (e.g., OpenAI API).
* UX/UI Designer: Designs child-friendly and accessible interface.
* QA Tester: Ensures the platform meets usability and security requirements.

**Software and Tools**

* Frontend: React.js
* Backend: Python FastAPI
* Database: MongoDB, NoSQL
* AI Services: OpenAI Image API
* Hosting: Vercel free hosting
* Version Control: GitHub
* Content Moderation API: Google SafeSearch / Hive.ai

**Budget Considerations**

* AI API usage costs (dependent on request volume).

## Risk Management

| **Risk** | **Impact** | **Mitigation Strategy** |
| --- | --- | --- |
| Exposure to Inappropriate Content | High | Implement AI-powered content moderation (OpenAI Moderation API), restrict uploads to drawings only, apply photo screening before display, enable reporting mechanism |
| Privacy Violations (Child Data) | High | Comply with COPPA/GDPR-K standards; store minimal user data (username, avatar only); implement parent consent and admin controls; no real photos for profiles |
| AI Bias or Inaccurate Recreation | Medium | Curate and test prompt templates thoroughly; implement quality checks; gather user feedback during testing phase |
| Technical Complexity (AI Integration) | Medium | Use well-documented OpenAI API; implement modular design for easy testing; maintain fallback mechanisms |
| Project Delays | Medium | Conduct weekly team meetings; maintain version control discipline; use milestone-based task tracking; create realistic timelines with buffer periods |
| Budget Overruns (API Costs) | Low | Use free-tier services during development; implement rate limiting; optimize image sizes to reduce API costs; monitor usage closely |
| Team Member Unavailability | Low | Document all code thoroughly; maintain clear commit messages; ensure knowledge sharing during meetings; keep README updated |

## 7. Communication Plan

**Internal Team Communication:**

* Weekly Team Meetings: In-person or virtual meetings every week to discuss progress, resolve blockers, and plan next steps​
* Daily Communication: WhatsApp group for quick questions, updates, and coordination​
* Code Collaboration: GitHub pull requests with peer reviews before merging to main branch​
* Documentation: Maintain updated README, code comments, and technical documentation for knowledge sharing​
* Task Tracking: GitHub Projects board to track issues, features, and progress

**Stakeholder Communication:**

* Course Instructor: Regular email updates and formal submissions of project deliverables on assignment deadlines​
* Progress Reporting: Weekly commit history on GitHub demonstrating development progress​
* Assignment Submissions: All documents and code submitted via GitHub repository as specified in course requirements​
* Presentations: Final project presentation to demonstrate the project

**Communication Schedule:**

* Team meetings: Every Monday at 7:00 PM
* Status updates: Posted in group chat every Friday
* Code reviews: Within 24 hours of pull request submission
* Instructor updates: Bi-weekly via email or as required

## 8. Change Management Plan

**Change Request Process:**

* Identification: Team member identifies need for change in requirements or scope during meetings or development
* Documentation: Change is documented with description, rationale, and potential impact on timeline/budget
* Team Discussion: All team members discuss the proposed change in weekly meeting​
* Impact Assessment: Evaluate how change affects project schedule, resources, and existing features
* Decision: Team reaches consensus on whether to accept, modify, or reject the change
* Implementation: If approved, update project documentation and assign tasks accordingly
* Communication: Inform course instructor of significant scope changes via email

**Change Categories:**

* Minor Changes: Bug fixes, UI tweaks - approved informally, implemented immediately
* Moderate Changes: New features within scope - discussed in weekly meeting, requires team consensus
* Major Changes: Significant scope modifications - requires formal documentation and instructor notification​

**Version Control:**

* All changes tracked through GitHub commits with clear messages describing modification

## 9. Budget Plan

1 PD (person-day) = 8 hours/day

| **Phase** | **Personnel Effort** | **Infrastructure Cost** | **Total Budget** |
| --- | --- | --- | --- |
| Requirements & Planning | 3 PD | $0 | $0 |
| Design & Architecture | 3 PD | $0 | $0 |
| Core Development (Backend + Frontend + AI) | 12 PD | $20 (API testing) | $20 |
| Database Integration | 3 PD | $0 (MongoDB Atlas free tier) | $0 |
| Safety Features | 2 PD | $10 (Moderation API) | $10 |
| Testing & Deployment | 2 PD | $0 | $0 |
| Total | 25 PD | $30 | $30 |

**Cost Breakdown:**

* OpenAI API: $10-$30 for image generation during development and testing​
* MongoDB Atlas: $0 (free tier)
* Content Moderation API: $5-$15 (OpenAI Moderation API or Google SafeSearch)
* Hosting: $0 (Vercel free hosting)​
* Domain/SSL: $0 (using free subdomain for prototype)

**Effort Distribution by Task:**

* Backend Development: 25% (50 hours)
* Frontend Development: 25% (50 hours)
* AI Integration: 20% (40 hours)
* Database & Security: 15% (30 hours)
* Testing & QA: 10% (20 hours)
* Documentation: 5% (10 hours)

**Cost Management Strategies:**

* Utilize free tiers and student credits for all cloud services​
* Implement rate limiting to control API costs​
* Optimize image sizes before API calls to reduce processing costs
* Monitor spending weekly to avoid budget overruns
* Use open-source alternatives where possible to minimize licensing costs

## 10. Document-Specific Task Matrix

| **Document Task** | **Esra** | **Yağız** | **Yusuf** | **Ali** |
| --- | --- | --- | --- | --- |
| Document Planning |  | ✅ |  |  |
| Project Overview & Objectives |  | ✅ |  |  |
| Organization and Roles |  | ✅ |  |  |
| Schedule & Risks |  | ✅ |  |  |
| Communication & Change Management |  | ✅ |  |  |
| Budget Plan & Resources |  | ✅ |  |  |
| Formatting & Final Review | ✅ | ✅ | ✅ | ✅ |