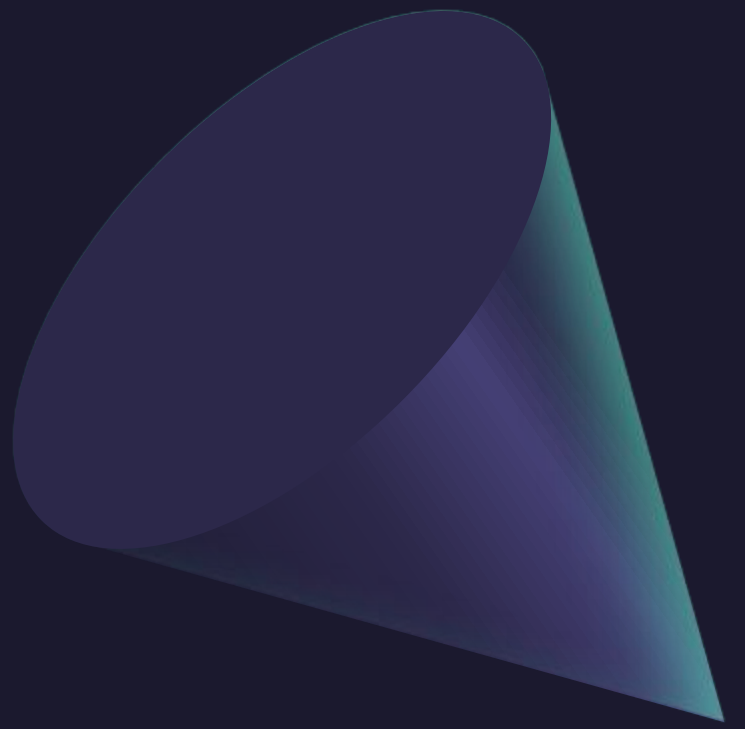
YZM-2021

Principles of Software Engineering

Team 3

Berat Sarı / Ali Berkay Erdoğan / Talha Zencirkıran

24018025 / 24018004 / 25018603



Project Overview

MemoLink

Project Summary

- Our project proposes the development of a **Digital Memory Keeper** application designed to modernize the traditional family photo album by integrating personal reflection in an organized digital space.

Problem Statement

- Current memory-keeping methods are not so practical : **Physical photo albums are easily and permanently destroyed**, while **digital photos are disorganized and lack the crucial personal thoughts and emotional context** necessary for meaningful retrieval.
- This means families and individuals risk losing their most cherished milestones because the memories are either physically vulnerable or digitally fragmented and meaningless. We lack a dedicated platform that allows users to permanently merge photos with personal reflections to build cohesive, lasting narratives.

Target Users

- **Families with Young Children:** Seeking a secure, organized way to document and narrate their children's milestones (first words, daily life, growth) in detail.
- **Individuals & General Users:** Anyone looking for a dedicated digital space to combine and permanently preserve their personal **memories, photos, and private thoughts/reflections**.

Core Features

- **Memory Packages:** A single, unified unit that combines photos and videos with the user's personal thoughts and reflections.
- **Connections (Narrative Linking):** The ability to link multiple Memory Packages together to create continuous stories or timelines (e.g., from an event's beginning to its end).
- **Archiving & Retrieval:** A system for digital storage, organization, and efficient searching of all saved packages.

What Makes It Unique ?

- Our platform is the only solution that guarantees the preservation of *why* the photo was taken (the thought/reflection) and *how* it connects to other life events (the connection/narrative), solving the problem of digitally scattering precious memories.

Comparison With Competitors

- **Cloud StorageGoogle Photos:**Excellent for storing photos, but it is purely file-based. The emotional context and reflection are absent, and memories are isolated, not connected to form a narrative.
- **Family Album:** is primarily a photo-sharing app that organizes memories automatically by date. Our app, however, is unique because it forces the permanent combination of a **photo with a personal thought** into a single "Memory Package." This allows users to create **connected, continuous life stories** rather than just a disorganized collection of files, offering deep personal context that simple chronological sharing cannot match.

Monetization Plan

- Full acces on the first month, then subscription plan.

Technology Stack

Technologies and Tools

- FastAPI (Python) for the API, PostgreSQL for data, SQLAlchemy (ORM), Alembic (migrations), JWT for login, Docker, Git/GitHub, GitHub Actions (CI), auto API docs via OpenAPI/Swagger.

Frameworks or Libraries: Backend

- FastAPI – modern, fast, and designed for JSON APIs; it generates documentation automatically and pairs cleanly with a React frontend.

Frameworks or Libraries: Frontend

- We will use React.js because it's fast, component-based, and perfect for creating interactive interfaces such as graphs with clickable photos.
- React Flow: For building interactive graph structures where each node can display an image and respond to clicks.
- Tailwind CSS: For fast, modern, and responsive UI styling without writing complex CSS.
- Framer Motion: For smooth animations and transitions, like opening or closing the photo popup.
- Axios: For handling API requests between the frontend and backend easily and reliably.
- React Modal (or Radix UI): For displaying popups that show the enlarged image and memory text.

Programming Language

- Python – We're proficient; it speeds development and has mature libraries for web APIs and databases.

- Programming Language: We will use JavaScript (optionally TypeScript) because it’s the standard for web development, works seamlessly with React, and is ideal for building dynamic, user-friendly web applications.

Service Providers

- Supabase Storage for photo files; Supabase Postgres (managed PostgreSQL) if we don’t run the DB ourselves.
- Why ? Simple setup, free tier, and built-in security for private/public files; reduces DevOps work so we can focus on features.

Database and System

- SQL / PostgreSQL – our data is relational (users ↔ notes ↔ photos, note↔note links). We need constraints, joins, and reliable migrations.

Tools for Hosting

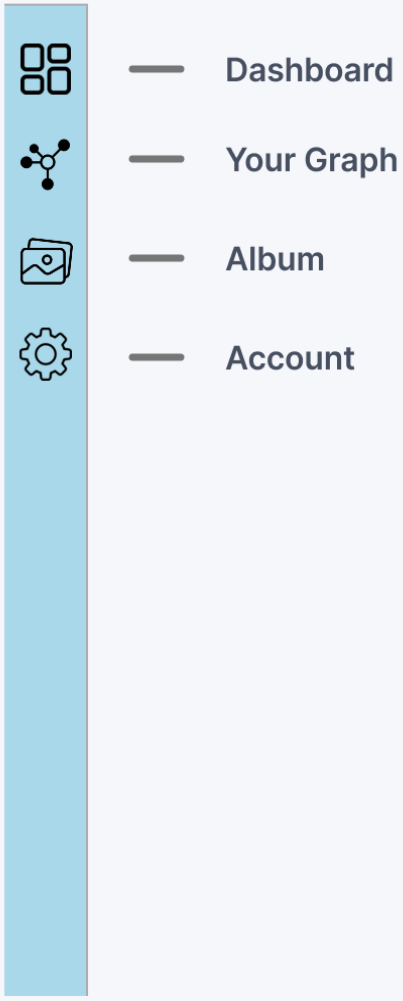
- Backend on Render (runs FastAPI 24/7), Database on Supabase Postgres. Git/GitHub for version control; REST over HTTPS with OpenAPI docs.

Fitting of Technology Choices to our Team

- React needs a clean JSON API → FastAPI fits. We have experience with Python → faster, safer delivery. PostgreSQL ensures data integrity for linked notes/photos. Supabase + Render minimize ops risk and are easy to demo.

Initial Design

Navigation Bar

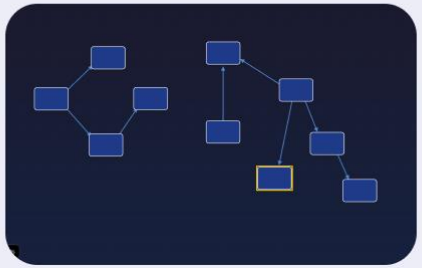


MemoLink

Dashboard

Recently Added

Your Graph



Statistics

Added Memory

12

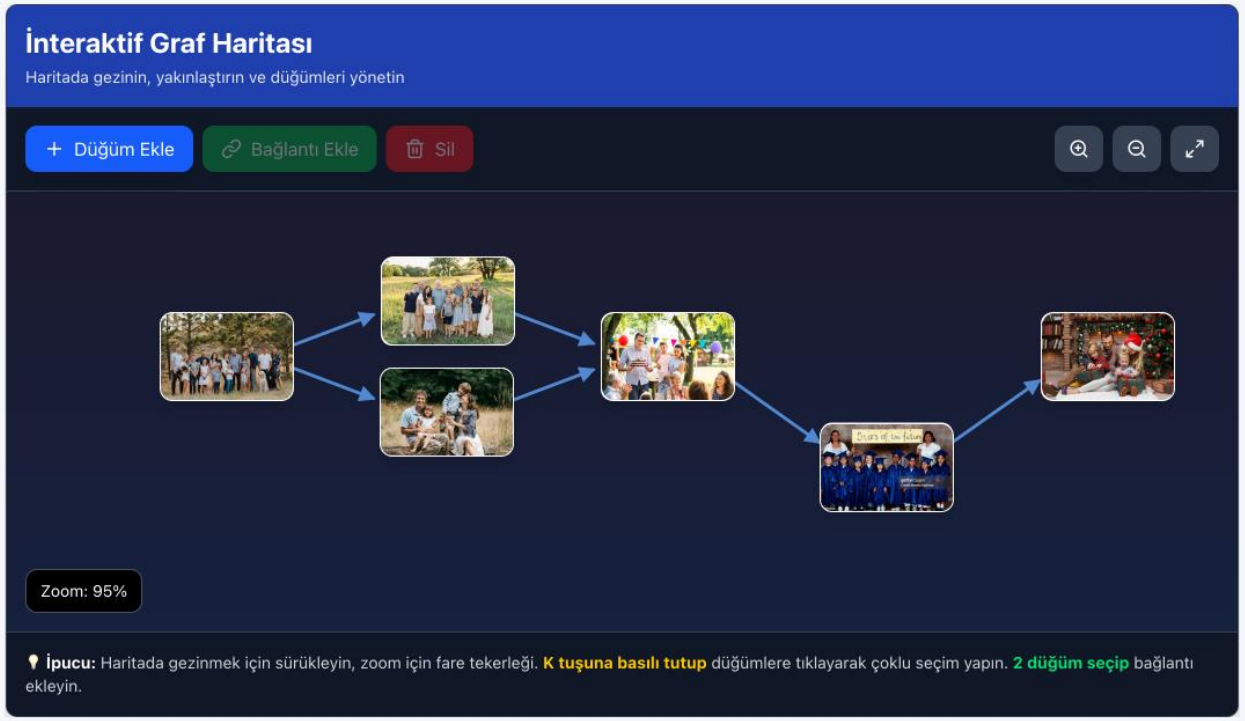
Edge Count

8

Add New Memory

MemoLink

Your Memory Graph



MemoLink

Your Album

Memory 1

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed do eiusmod tempor incididunt ut labore et d.

Memory 2

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed do eiusmod tempor incididunt ut labore et d.

Memory 3

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed do eiusmod tempor incididunt ut labore et d.

Memory 4

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed do eiusmod tempor incididunt ut labore et d.

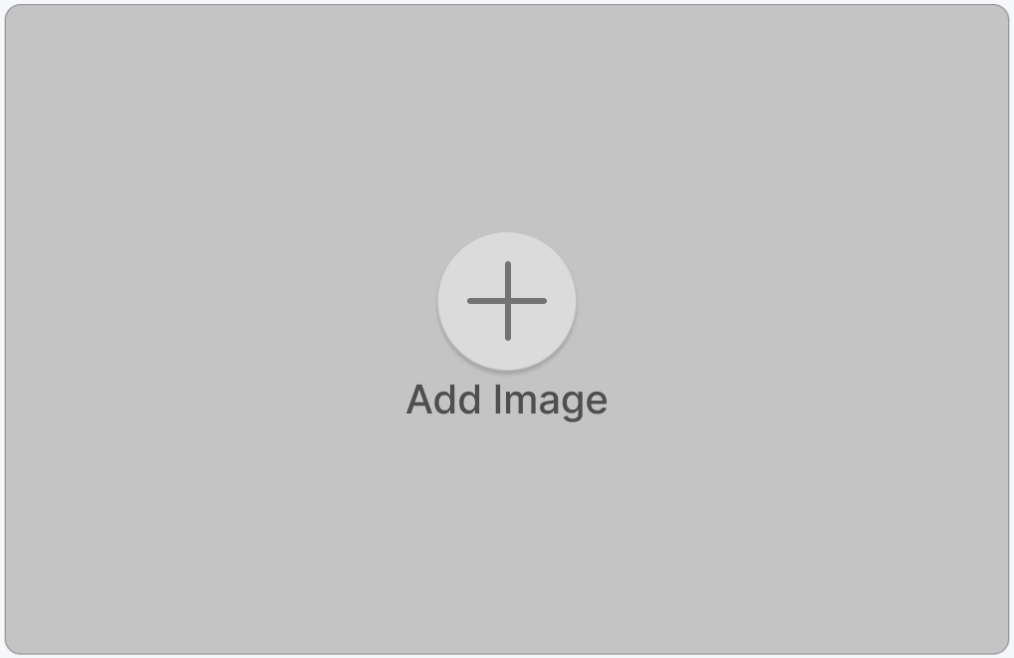
Memory 5

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed do eiusmod tempor incididunt ut labore et d.

Memory 6

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed do eiusmod tempor incididunt ut labore et d.

Enter your memory's title



Enter your memory's details

Cancel

Add Memory

Memory 3

Lorem ipsum dolor sit amet, consectetur adipiscing elit.
Sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.Lorem ipsum dolor sit amet, consectetur adipiscing elit.
Sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Add Memory

Development Setup

GitHub Repository Link

- https://github.com/AliBerkaySeucen/YZM2021-Team-3

GitHub Project

- https://github.com/users/AliBerkaySeucen/projects/3