

Archiver WebApp

Technical Documentation & Implementation Report

1. EXECUTIVE SUMMARY

1.1 Introduction

Archiver WebApp is a full-stack web application developed to showcase, organize and manage multimedia portfolio content in a structured manner. The system offers an interactive platform for organizing, displaying, and managing archive items like images, videos, and documents. The application supports both **public-facing content display** and **administrator-controlled content management**, enabling seamless control over visibility, organization, and presentation.

1.2 Key Objectives

- Create a scalable, secure archive management platform.
- Enable public access to curated portfolio content.
- Provide strong administrative tools for content management.
- Implement efficient media handling and storage.
- Ensure responsive design across all devices.
- Improve performance through caching strategies.

1.3 Project Timeline

- Start Date: December 11, 2025
- Completion Date: January 18, 2026
- Duration: 5 weeks
- Status: Production Ready

1.4 Technology Stack Summary

Frontend: React(Vite), TypeScript, Tailwind CSS, React Router(for routing), Axios(for API Communication)

Backend: Node.js, Express, TypeScript, Sequelize ORM

Database: PostgreSQL

Storage: Cloudinary

Authentication: JWT (JSON Web Tokens)

Caching: Node-Cache

The frontend is structured into:

- Pages (public and admin)
- Reusable components

2. PROJECT OVERVIEW

2.1 Business Requirements

The system addresses the need for a professional portfolio platform that:

- Showcases multimedia works and achievements
- Organizes content into meaningful collections
- Supports draft/publish workflow
- Manages public and private content visibility
- Supports easy content management and updates

2.2 System Features

2.2.1 Public Features

- Browse archive items (images, videos, documents)
- Search and filter functionality
- Organized collections
- Responsive design for all devices

- Download capabilities and sharing of content

2.2.2 Administrative Features

- Secure authentication system
- Upload multimedia content.
- Create and manage collections
- Draft management workflow
- Edit and delete capabilities
- Content visibility controls
- Featured content selection

2.3 User Roles

- **Public Users:** View-only access to public archive items, item details, collections e.t.c.
- **Administrator:** Can log in securely, perform full CRUD operations on all content and manage all content within the system.

3. USER MANUAL

3.1 Getting Started

3.1.1 System Requirements

- Modern web browser (Chrome, Firefox, Safari, Edge)
- Internet connection
- For admin: Login credentials

3.1.2 Public User Guide

Viewing Archives:

1. Navigate to homepage

2. Browse featured items or click "Archives"
3. Use search bar to find specific content
4. Filter by category using dropdown
5. Click any archive item to view details
6. Download public documents/media as needed
7. Share the archive items.

Exploring Collections:

1. Click "Collections" in navigation
2. Browse curated groups of related items
3. Click collection card to view all items
4. Navigate between collections and individual items

3.1.3 Administrator Guide

Logging In:

1. Click "Admin Login" in footer
2. Enter username and password
3. Click "Login"
4. Redirected to admin dashboard

Uploading Archive Items:

1. From dashboard, click "Upload new Item"
2. Fill in required fields:
 - Title
 - Description
 - Category
 - Visibility (Public/Private)
 - Feature on Main Page (checkbox)
3. Select file(max 50MB)
 - Images auto-compress

- Preview will be shown.
4. Click "Upload Item"
 5. Success confirmation displayed

Creating Collections:

1. From dashboard, click "Create a Collection"
2. Ensure archive items already exist
3. Enter collection name and description
4. Select archive items from available list
 - Click items to select/deselect
5. Click "Create Collection"
6. Collection created with selected items

Managing Drafts:

1. View drafts in admin dashboard
2. Edit draft content as needed
3. Click "Publish" when ready or still save as draft.
4. Draft moved to Archives

Editing Content:

1. Navigate to 'Archives', 'Collections' or 'Drafts' tab/section on the admin dashboard or the details page
2. Click "Edit" button (admin only)
3. Modify fields as needed
4. Save changes
5. Confirmation displayed

Deleting Content:

1. Navigate to 'Archives', 'Collections' or 'Drafts' tab/section on the admin dashboard or the details page.

2. Click "Delete" button (admin only)
3. Confirm deletion
4. Content removed from system

3.2 Feature Guide

3.2.1 Visibility Options

- **Public:** Visible to everyone, appears in archives
- **Private/Draft:** Only visible to admin, not published

3.2.2 Featured Content

- Items marked "Feature on Main Page/Featured" appear prominently on homepage
- Showcases most important or recent work
- Admin can toggle this setting anytime

3.2.3 Collections

- Group related archive items together
- Tell cohesive stories or themes
- One item can belong to multiple collections
- Collections have their own detail pages

4. TECHNICAL REPORT

4.1 Backend Architecture

Runtime: Node.js

Framework: Express.js

Language: TypeScript

ORM: Sequelize

Database: PostgreSQL

The backend architecture is modular with clear separation of concerns.

- Controllers: Contains request logic
- Routes: Contains API routes
- Models: Contains database schema
- Middleware: Contains authentication/validation logic
- Utilities: Contains caching logic

4.2 Database Design

The database has the following tables:

- Users
- Categories
- Archives
- Drafts
- Collections
- CollectionItems (junction table for many-to-many relationship)

4.3 Authentication and Security

- JSON Web Tokens (JWT) are used for authentication.
- The authentication token is validated using middleware.
- Sensitive credentials are stored in environment variables.
- CORS is enabled/configured to restrict unauthorized access.

4.4 Media Upload and Storage

Multer is used for handling multipart form data.

Cloudinary is used for cloud storage.