05-T2 Website Transformation

Final Report Document

4850- all sections

Spring 2025

April 20, 2025

Professor Perry

Team 2

Website: https://05T2-GSO.github.io/pages/

Lines of Code: 854

Components/Tools Used: WordPress, Elementor, Docker, GitHub

Total Man Hours: 306

NDA: No

Noah Minch

Jonathan Turner

Kevin Syhavong

Rashmi Wagde

Contents

1. Introduction

1.1 Project Background

The Georgia Symphony Orchestra (GSO) is a regional cultural institution that includes a range of music programs such as the Georgia Youth Symphony Orchestra (GYSO), Jazz, and Chorus. Each of these programs previously had their own semi-independent web presence, resulting in fragmented branding, inconsistent user experiences, and outdated designs. The organization sought to unify these digital identities into a single, modern, and user-friendly website.

1.2 Objective

The primary goal of our project was to create a **proof-of-concept (POC)** website that consolidates the GSO, GYSO, Jazz, and Chorus programs into a cohesive web platform. Initially, the sponsor envisioned a complete rebuild of the site from scratch. However, the scope shifted mid-semester to instead focus on improving and integrating portions of the existing site using the WordPress CMS. Our team was tasked with prototyping enhancements to the user experience, navigation, and event management components of the GSO website. This also included preparing a guide for future updates that could be performed by non-technical staff.

1.3 Scope

Originally, the scope involved a full site rebuild but was adjusted after the first milestone to prioritize improving the existing site structure. Our final deliverables focused on:

- Restructuring the sitemap for better user flow
- Redesigning the Events and Calendar system
- Ensuring mobile responsiveness
- Incorporating accessibility features
- Embedding ticketing tools and donation functionality
- Providing training documentation for GSO's staff

Excluded from our scope were:

- Full rebranding of all pages
- Custom backend development beyond plugin configuration
- Overhauling ticketing/payment systems (limited to integration only)

1.4 Stakeholders and End Users

The primary stakeholder was the Georgia Symphony Orchestra sponsor team. End users include a wide audience:

- Older event attendees
- Parents of student musicians
- Donors and Patrons
- Students exploring youth programs
- Internal GSO staff maintaining content

This diverse user base required thoughtful design to accommodate different accessibility, device usage, and information needs.

1.5 Technologies Used

To deliver the solution, we used:

- **WordPress CMS** with the **Elementor** page builder for front-end customization
- Docker containers for local and staging deployment
- A staging environment hosted at: `https://georgiasymphonyatl.staging.tempurl.host/`
- Plugins for ticketing (Ovatheme), SEO, accessibility, backups, and analytics

This stack allowed us to build a highly modular, responsive, and accessible proof of concept while aligning with the sponsor's familiarity with WordPress.

2. Requirements

2.1 Functional Requirements

The Georgia Symphony Orchestra website must provide the following user-facing functionality:

Homepage

- Integrate branding for GSO, GYSO, Jazz, and Chorus programs
- Include a mission statement and value proposition ("elevator pitch")
- Display upcoming events prominently with "Buy Tickets" buttons
- Contain persistent donation and navigation elements

Event Management

- Events must be listed in both **calendar view** and **list view**
- Users must be able to filter events by:
    - Program (GYSO, Jazz, Chorus)
    - Location
    - Date
- Each event page must include:
    - Title, date, time, venue
    - Performer bios and multimedia content
    - "Buy Tickets" button
    - Social sharing buttons
    - Parking and accessibility info

Donation System

- Display donation call-to-action on every page
- Support external links or embedded tools for various donation types
- Preserve GSO's current donation structure (Youth vs Adult program)

Program Pages

- Individual pages for GSO, GYSO, Jazz, and Chorus
- Each page includes:
    - Program overview
    - Media galleries (photos, videos)
    - Join/volunteer information
    - Testimonials or past highlights

Blog & News

- Unified blog for news updates, past performance recaps, and interviews
- Easily updated by non-technical staff

Administrative Tools

- Admins must be able to:
    - Add/edit events
    - Upload media and posts
    - Modify homepage banners or content areas

2.2 Non-Functional Requirements

- **Accessibility**: Must comply with WCAG standards. Support keyboard navigation, screen readers, alt text, etc.

- **Responsiveness**: Mobile-first layout. Design must function on phones, tablets, and desktops.
- **Performance**: Site should load in under 3 seconds on standard connections
- **Security**: Role-based access (RBAC) for admins vs. general users. Use HTTPS for all communications.
- **Scalability**: Architecture should support future API integration and user analytics dashboards
- **Maintainability**: Easy for non-technical GSO staff to update content via WordPress dashboard
- **SEO**: Pages should follow basic search engine optimization best practices (titles, meta, structured layout)

2.3 Business Rules & Sponsor Constraints

- Project must use **WordPress CMS**
- All features should be configurable using plug-ins or no-code tools
- No major changes to ticketing platform (OvationTix); only embed or link it Design choices must align with GSO's branding and support consistency with their existing promotional materials
- Final deliverables must be hosted on a public site, not Google Docs or Word files

2.4 Assumptions

- WordPress plugins used will be compatible with current CMS version
- Sponsor will provide branding assets (logos, bios, event data)
- GSO staff will maintain the site post-handoff, so training docs are included
- External APIs (e.g., ticketing or Google Calendar) are stable and allow embedding

3. Analysis / Design

3.1 Site Architecture & Navigation

The original GSO website suffered from inconsistent layouts and navigation across its various branches (GYSO, Jazz, Chorus). Our analysis revealed redundant pages, inconsistent link structures, and a lack of clear content hierarchy. We proposed a unified structure where all programs live under a shared homepage with consistent navigation and styling.

We reduced the number of clicks needed to access tickets, events, and contact information. A responsive navigation menu was implemented to improve user flow on both desktop and mobile devices.

3.2 UI/UX Approach

Wireframes and user stories were developed using Figma to visualize ideal user flows. The team identified four key user types:

- Older Event Attendee (primary)
- Ambitious Music Student (primary)
- Parent of a Student (secondary)
- Donor (secondary)

Our design principles focused on accessibility (large text, contrast), mobile-first layout, and clean information flow. The Elementor's drag-and-drop builder was used for quick iteration and visual consistency.

3.3 Technology & Plugin Strategy

We selected **WordPress** as the CMS based on sponsor requirements. Customization was achieved through Elementor and ~30 vetted plugins. These were chosen to minimize coding while maximizing features.

Key plugins included:

- Elementor Pro (page building)
- Ovatheme Events (ticket integration)
- WP Mail SMTP (email handling)
- Hummingbird Pro (performance optimization)
- Loco Translate (accessibility/localization)
- Snapshot (backups)

3.4 Design Constraints

- All content must be editable by non-technical staff
- Ticketing system (OvationTix) could not be replaced, only integrated
- Website should emulate the GSO brand identity

3.5 Wireframes and Mockups

Wireframes were created for key pages (Homepage, Events, Program Pages, Blog). These were user-tested informally to refine layout and labeling. Final mockups were used to guide Elementor layout implementation.

4. Development

4.1 Workflow & Tools

Our development followed an Agile-inspired workflow with weekly planning and coordination. All code and site progress were version-controlled using GitHub in the 05T2-GSO organization. We used Docker for creating a portable WordPress + MariaDB staging environment, allowing each member to test features locally.

Toolset:

- WordPress + Elementor
- MariaDB (backend database)
- Docker Compose
- GitHub (feature/dev/main branches)
- Figma (mockups and wireframes)

4.2 Backend Development

Jonathan Turner developed and enhanced the backend:

- Prototyped and tested custom WP plugins and themes.
- Created Docker Compose environment scripts for clean environments.
- Prototyped desired features (e.g., Google Docs to Native HTML.
- Contributed to Figma (mockups and wireframes) Designs.

4.3 Frontend/UI Development

Noah Minch served as team lead and led front-end styling

4.4 Documentation & Content

Rashmi Wagde managed: User stories, documentation

Kevin Syhavong managed: Documentation and scheduling

4.5 Development Challenges

- **Scope Change**: Midway through, the sponsor shifted to a consulting-style model rather than a full rebuild.
- **Limited Access**: The sponsor site was hosted offsite and required extra care for staging.
- **Plugin Overhead**: Compatibility issues arose from the sponsor's existing plugin set; we resolved this by containerizing the environment and limiting plugin sprawl.

5. Test (Plan and Report)

5.1 Test Methodology

We conducted **manual testing** across multiple environments including:

- Desktop: Chrome, Firefox, Safari, Edge
- Mobile: iOS Safari, Android Chrome
- Devices: Windows, Mac, Linux laptops, iPhones, Androids

Testing was based on a requirements matrix created from our SRS and design documents. Each team member tested components aligned with their area of development, logging results in a shared spreadsheet.

5.2 Testing Areas

- **Functional Testing**: Ensured events, navigation, ticketing, and donation elements worked as intended
- **Accessibility Testing**: Screen reader support, tab navigation
- **SEO Testing**: Checked sitemap generation, metadata, structured headings
- **Performance Testing**: Evaluated load times with and without plugins
- **404 & Redirects**: Ensured broken links are redirected to a custom 404 page

5.3 Results Summary

Test Area	Result	Severity
Homepage loads properly	Pass	High
Event filtering	Pass	High
Ticket system embedded	Pass	Medium
Screen reader compatibility	Partial	Medium

Test Area	Result	Severity
404 redirect in place	Pass	Medium
Mobile nav menu collapses correctly	Pass	High
Sponsor carousel display	Pass	Low

5.4 Recommendations

- Tune layout spacing on some mobile viewports
- Maintain plugin updates and revalidate monthly
- Provide training documentation that includes backup procedures

6. Version Control

GitHub org: 05T2-GSO. Feature/dev/main branches used.

7. Summary

The Georgia Symphony Orchestra Website Transformation project successfully achieved its core objective: to design and deliver a modern, accessible, and user-friendly website prototype that unifies GSO's various programs under a single digital presence.

Our team built a locally hosted, WordPress-based proof of concept that includes:

- A unified homepage for GSO, GYSO, Jazz, and Chorus
- Redesigned event and ticketing interfaces with calendar and filtering
- Accessibility features aligned with WCAG standards
- Responsive design for mobile and desktop
- Integrated donation and blog systems
- A full backend system supporting admin content updates and plugin management

Despite mid-semester changes in project scope, we adapted our development strategy, redefined deliverables, and ensured alignment with the sponsor's evolving expectations.

This project not only shows our technical skills—such as working with WordPress, Elementor, and APIs—but also demonstrates our adaptability, communication, and commitment to user-centered design.

We believe this project serves as a solid foundation for the Georgia Symphony Orchestra's long-term digital transformation.

8. Appendix

Included documents: Gantt Chart, Final Research Report (Per Sponsors Request), Time Sheets, Source Code.