IOD Capstone Project: Monster Mansion Podcast

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Purpose

What is the problem or the opportunity that the project is investigating?

The project is investigating the opportunity to design and code a new podcast website for a hosting duo who already has a successful show but wants to expand their audience and build a more engaged community. The current website may lack features that enhance user engagement, community interaction, and overall growth.

Why is this problem valuable to address?

Addressing this opportunity is valuable because a well-designed website can significantly increase audience reach and engagement. It provides a central hub for listeners to access episodes, subscribe, and interact with the podcast's content and community. A strong online presence can also improve brand recognition, attract new listeners, and foster a loyal fan base.

Purpose (continued)

What is the current state (e.g., unsatisfied users, lost revenue)?

The current state may involve:

- Limited Engagement: Existing listeners may have difficulty finding and engaging with new episodes or community features.
- Fragmented Community: The fan community may be dispersed across various platforms, making it harder to foster a cohesive and engaged audience.

What is the desired state?

The desired state is a fully functional, modern podcast website that:

- Increases Visibility: Attracts new listeners through enhanced SEO and user-friendly design.
- Enhances Engagement: Provides easy access to episodes, show notes, and subscription options.
- Builds Community: Integrates social media links and messaging app features (like Discord) to foster interaction among fans.

Purpose (continued)

Has this problem been addressed by other projects? What were the outcomes?

Yes, this problem has been addressed by other podcast websites with various outcomes:

- Successful Examples: Some podcast websites have successfully enhanced their audience engagement by implementing modern designs, integrating community features, and optimizing content accessibility. These websites often see increased traffic, higher listener retention, and stronger community interaction.
- Challenges: Other projects may have faced challenges such as technical difficulties, insufficient user adoption of new features, or underestimating the need for ongoing website maintenance and updates.

Industry

The podcast industry has seen significant growth in recent years, with listener numbers and revenue increasing. Here are some predictions for the podcast industry's growth from 2020 to 2024:

- In 2020, Statista estimated that 75 million Americans listened to podcasts monthly.
- Statista projects that number to increase to 160 million, more than double the 2020 figure.
- As of June 2024, 47% of Americans aged 12 and older listened to podcasts in the last month, up from 42% in 2023
- Edison Research also found that podcasts reach all generations, with 29% of kids ages 6–12, 59% of ages 12–34, 55% of ages 35–54, and 27% of ages 55 and older listening monthly.
- Women are also listening to more podcasts, with 45% of US women listening in the last month, up 15% from the previous year.
- Exploding Topics predicts that podcast ad revenue will grow by 12% in 2024, surpassing $2 billion, and continue to grow in 2025 and 2026

Stakeholders

Who are the stakeholders?

1. **Podcast Hosts/Creators**
   - Description: The duo who produces the podcast.
   - Interest: They want to grow their audience, enhance community engagement, and potentially increase revenue through the new website.
2. **Podcast Listeners/Fans**
   - Description: Current and potential listeners of the podcast.
   - Interest: They seek easy access to episodes, engaging content, and opportunities to interact with the podcast and other fans.
3. **Potential Sponsors/Advertisers**
   - Description: Companies or individuals interested in advertising on the podcast.
   - Interest: They look for a well-established platform with a growing audience to advertise their products or services.

Why do they care about this software?

- **Podcast Hosts/Creators:** They care because the website is crucial for expanding their reach, engaging with their audience, and monetizing their content.

- **Podcast Listeners/Fans:** They care because they want a seamless, enjoyable experience accessing podcast content, participating in the community, and staying updated on new episodes and events.

- **Potential Sponsors/Advertisers:** They care because a well-designed and popular podcast website offers them valuable advertising opportunities.

Product Design

User Story 1
Title: **Eager New Subscriber**

As a new fan of the Monster Mansion Podcast, I want to easily find and subscribe to the podcast on the website, so that I don't miss out on any new shows, events, and blog posts.

Acceptance Criteria:

- The subscription option should be prominently displayed on the homepage.
- The subscription process should be simple and straightforward.
- Confirmation of subscription should be sent via email, including links to the latest shows and updates.

User Story 2
Title: **Reconnecting with Missed Episodes**

As a long-time listener who has missed recent episodes, I want to access the podcast episode library on the website, so that I can listen to the latest episodes and catch up on what I've missed.

Acceptance Criteria:

- The episode library should be easily accessible from the main navigation menu.
- Episodes should be listed with clear titles, episode numbers, and descriptions.
- There should be an option to search or filter episodes by date or topic.

User Story 3
Title: Joining the Fan Community

As a new listener who wants to connect with other fans, I want to join the podcast's growing fan community through social media and messaging apps like Discord, so that I can engage with other listeners, participate in discussions, and stay updated on podcast-related events.

Acceptance Criteria:

- Links to the podcast's social media profiles (e.g., Facebook, Twitter, Instagram) and Discord server should be easily accessible on the website.
- There should be clear instructions or invitations to join the fan community on the homepage and episode pages.
- The community links should open in a new tab or window to ensure users remain on the podcast's website.

Architecture Design (MVC Pattern)
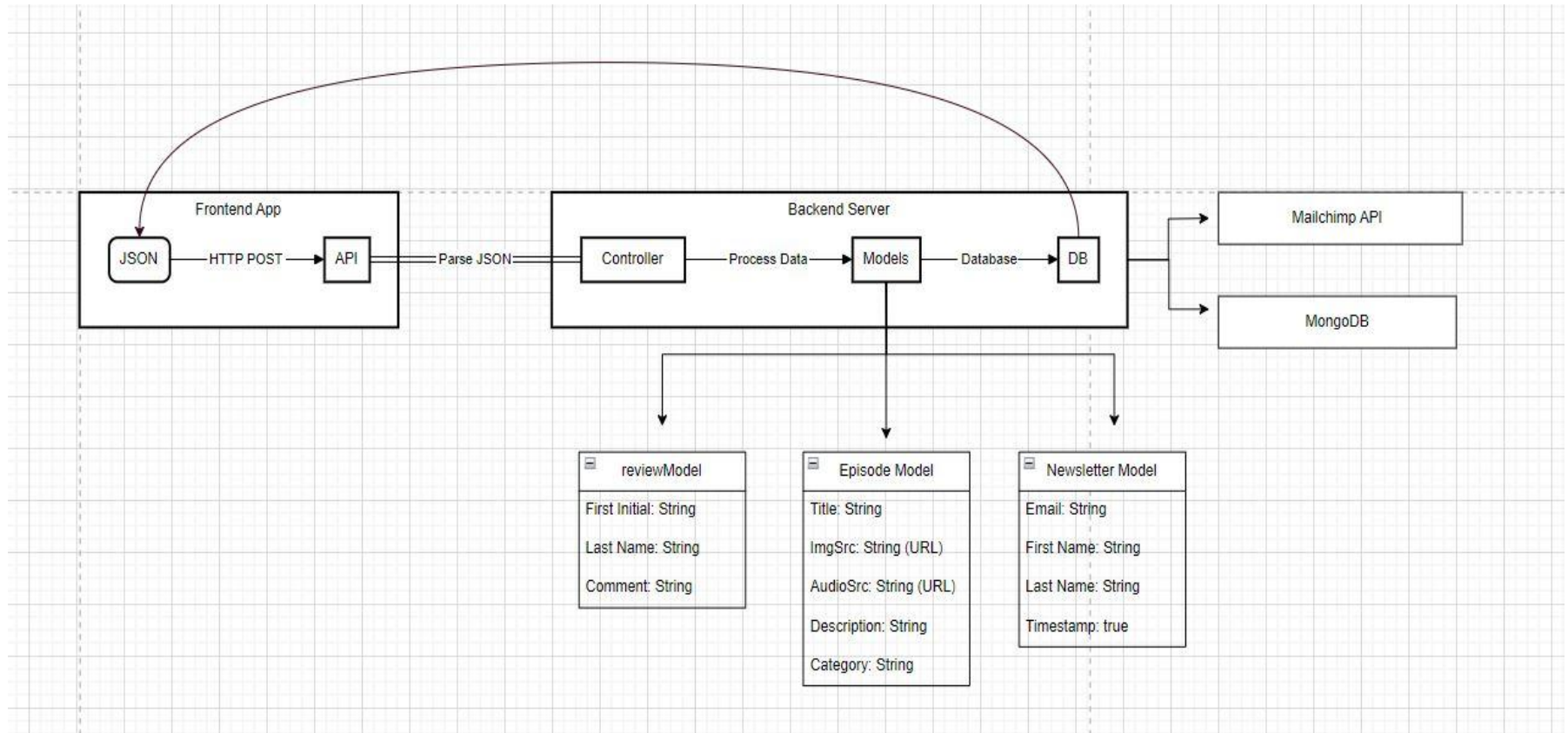
Wire Frame Diagram
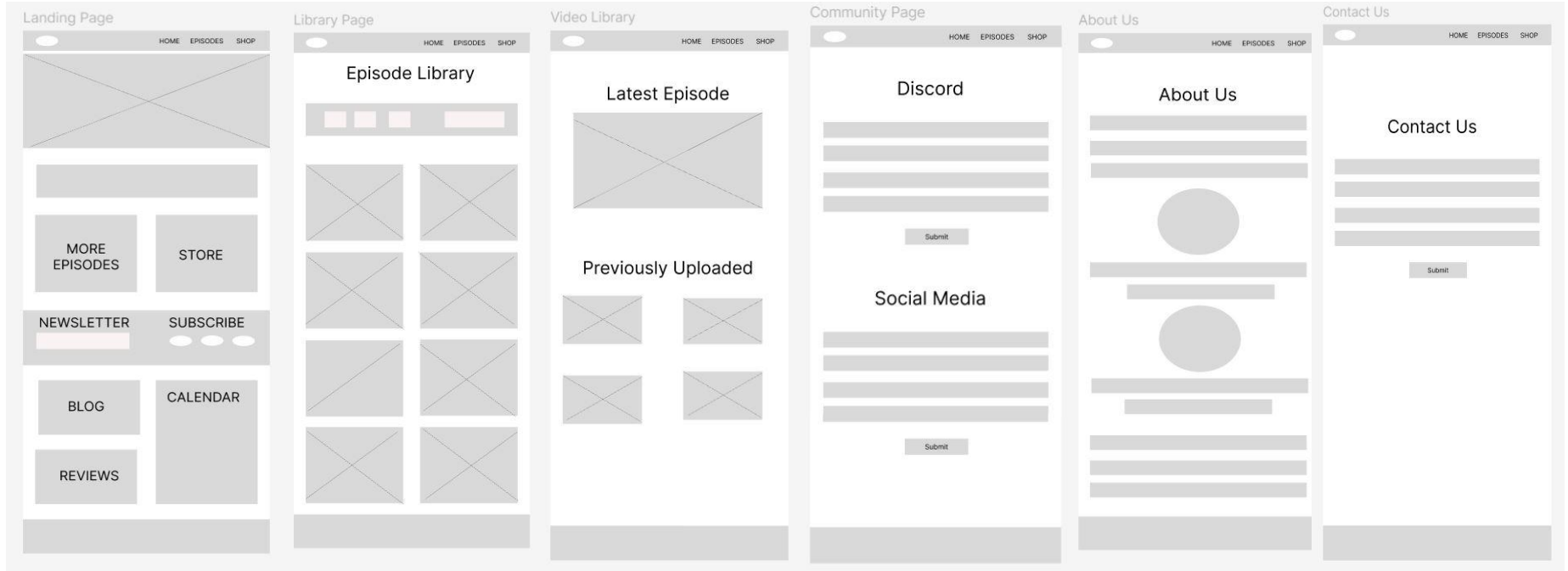
[Figma Wireframe Link](#)

Out of Scope

1. Need for merchandise or event sales in initial deployment.
2. Should there be a calendar tracking new episode uploads?
3. Is there a desire to include a comment section to the video or audio library?
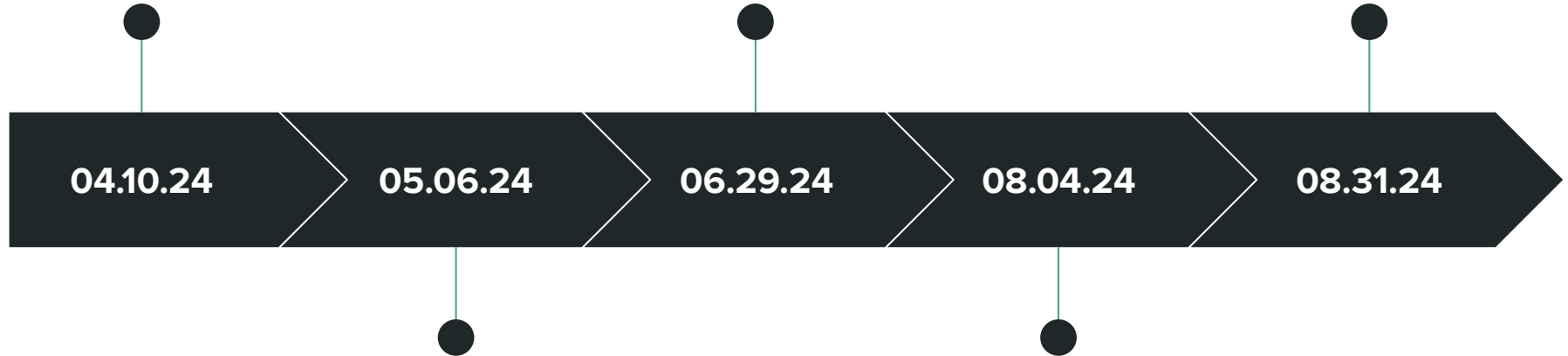4. Concerns for user security.

Project Planning

Meeting with Stakeholders for brainstorming session.

Mini Project 2 due date.

Capstone due, but continued revisions are needed to meet stakeholder demands before deployment.

04.10.24　　**05.06.24**　　**06.29.24**　　**08.04.24**　　**08.31.24**

Mini Project 1 due date.

Mini Project 3 due date.

External Libraries, Softwares, and Databases

- **Bootstrap**
  - Cards
  - Carousel
- **Font Awesome**
  - Social Media Icons
  - Search Button
- **Canva**
  - Used to create demo site assets
- **Figma**
  - Used to show user flow and wireframing
- **MongoDB and MongoDB Compass**
  - Storing JSON data for reviews and episodes
- **Draw.io**
  - Used to draw frontend to backend communication
- **Mailchimp API**
  - Used to collect and store user info JSON for newsletter
  - Contact form submission and reply functionality
- **Google Cloud Services**
  - Image and Audio file storage used in episode JSON
- **YouTube API**
  - Using iFrame to fetch latest and recently uploaded videos on host's channel

Testing Strategy

Unit Testing

- **Purpose**: Verify the smallest units of code, such as functions or methods, in isolation.
- **Approach**: Developers write tests for each function or module to ensure that it works as expected.

Integration Testing

- **Purpose**: Test the interaction between integrated components to ensure they work together correctly.
- **Tools**: Postman
- **Approach**: Focus on testing groups of modules and their communication points.

API Testing

- **Purpose**: Validate the endpoints of APIs for functionality, reliability, performance, and security.
- **Tools**: Postman
- **Approach**: Test requests and responses of API endpoints.

Handling Edge Cases

Invalid Input

- **Action:** Implemented input validation and error handling in forms (e.g., subscription form).
- **Method:** Tested with various invalid inputs to ensure proper error messages are displayed and data is not processed.

Broken Links and Resources

- **Action:** Regularly checked for broken links and missing resources.
- **Method:** Used automated tools to scan for broken links and manually reviewed key pages.

Unexpected User Behavior

- **Action:** Designed the website to handle unexpected user actions gracefully, such as navigating away from a partially completed form.
- **Method:** Tested scenarios where users might leave or refresh pages during critical actions.

Deployment Considerations

1. Environment Configuration

- **Development vs. Production:** Ensure configurations differ between environments (e.g., database connections, API keys).
- **Environment Variables:** Use environment variables for sensitive information and configuration settings.

2. Deployment Strategy

- **Rolling Deployments:** Having the ability to roll out updates to a subset of users before full deployment.
- **Blue-Green Deployments:** Maintain two production environments (blue and green) to switch traffic between them.
- **Canary Releases:** Release updates to a small portion of users before a full rollout.

3. Infrastructure Management

- **Cloud vs. On-Premises:** Decide between cloud services (AWS, Azure, GCP)..
- **Scalability:** Ensure infrastructure can handle varying loads (auto-scaling, load balancing).
- **Containerization:** Use Docker for consistent environments and easy scaling.

Next Steps

1. Inclusion of either a show notes library or component.
2. Include schema for updates carousel on landing page. Upload images to GCS.
3. Re-style landing page to make it more dynamic and interactive.
4. Set up Mailchimp New Subscriber email journey.