**Capstone**

**Learning**

**Contract**

**For**

**My Project**

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# Capstone Project Overview

*The project focuses on developing an innovative Music Player application suite with multiple components, utilizing various technologies. The project aims to combine different aspects of music playing and visualization into a cohesive suite.*

***Requirement 1 (Team Collaboration):*** *Team members will actively participate in regular meetings, demonstrating collaborative project management. Documented in Section 5 (Progress), with each member's contribution and collaborative efforts detailed in weekly reports.****Topic:*** *Development of a Music Player Suite.****Team Assignments:***

*Phuc Huynh: Developing a web app Music Player API using JavaScript.*

*Gregory Pomeroy: Creating an audio visualizer that reacts to music.*

*Steven Crosby: Building the WPF music store*.

# Capstone Requirements

*The team needs to study different technologies relevant to their individual components, including WPF, JavaScript, and audio visualization techniques.*

***Requirement 2 (Application of Prior Learning):*** *Each team member will utilize skills from previous courses in their assigned tasks, as outlined in Section 3 (Capstone Documentation).****What team need to study / read:*** *WPF documentation, JavaScript frameworks, audio visualization methods.****What team need to do / build:*** *Collaboratively construct an MP3 Player suite consisting of a music store, web app API, and audio visualizer.*

# Capstone Documents

*Includes System Design, Testing, and Usage (User Manual), comprehensive documentation on requirements, a requirements list. Also documented are project tasks assigned to team members with weekly status reporting, which includes a graphic representation (e.g., Gantt chart).****Requirement 3 (Professional Communication):*** *Documentation and presentations will be tailored to different target audiences, ensuring clarity and professionalism. This will be evident in all sections, particularly in Section 6 (Demonstration Paragraphs).*

# Capstone Milestone *Creating a product that meets all approved project milestones. Requirement 4 (Product Creation): The team will develop the MP3 Player suite, meeting all set milestones. Progress towards these milestones will be tracked in Section 5 (Progress), with a focus on achieving all project deliverables.*

***Project Overview and Task Drafting:*** *We will provide a detailed description of the project and an initial list of tasks, complete with estimates. This information will be sufficient for team members to begin their research or initial design work.*

***Weekly Progress Reports:*** *Each team member will submit a weekly report, updating them on their tasks, estimated progress, and completion percentage. They will use the "Weekly Status Report" template for this purpose. These reports collectively reflect the team's overall progress.*

***Midterm Checkpoint:***

* ***Presentation:*** *Update on project status, showcasing current requirements, design, and any prototype or working system.*
* ***Documentation and System Files:*** *Deliver all related documentation for this phase and system files.*
* ***Review of Weekly Reports:*** *Assess all previous weekly reports for accuracy and improvement, demonstrating the progress leading to the midterm presentation.*

***Final Submission:***

* ***Final Presentation:*** *Explain the system's functionalities and demonstrate it live or through screenshots.*
* ***Complete Documentation and System Files:*** *Submit all related documentation and system files.*
* ***Comprehensive Review of Weekly Reports:*** *Analyze all weekly reports for accuracy and improvements, highlighting the journey towards the final project status.*
* ***Capstone Course Deadlines and Requirements:***
* ***Capstone Plan Submission:*** *January 14, 2024.*
* ***Weekly Reports:*** *Due on specific dates from January 19 to April 12, 2024.*
* ***Phase Presentations:*** *Four phases, from February 2 to April 17, 2024.*

***Presentation Guidelines:***

* ***Participation:*** *All team members must participate.*
* ***Format:*** *Presentations may be recorded.*
* ***Duration:*** *Limit each presentation to 15 minutes.*

# Progress

*Provide whatever level of detail makes sense. Note the paragraph numbering and stay in the 1.x paragraphs for Requirements if you wish.*

# Milestone 1 Completed:

*Echo Squad, following a team restructuring, has made significant strides in developing the Chinook Music Store Application, a key component of their Team Echo Solution Suite for their Capstone course. The team adapted to the departure of a member by segmenting the project into specialized components, with this approach being endorsed by their instructor. The current state of the application includes a static UI, featuring menus and placeholders for artists, albums, and tracks, awaiting live data integration through the Entity Framework for database connectivity. Individual contributions include Steven Crosby's focus on database connectivity, Phuc Huynh's development of a web app Music Player API, and Gregory Pomeroy's creation of an audio visualizer. The team emphasizes regular progress tracking, adheres to a structured learning contract, and focuses on clarity, logical organization, and a unified theme in their presentations. This cohesive and well-researched effort aligns with the course objectives, showcasing their knowledge, research depth, and effective teamwork, and setting the stage for a comprehensive and functional final deliverable.*

# Sub-Paragraphs

*Again, break down the subparagraphs in a way that makes sense. Include diagrams and tables as needed.*

# Milestone 2 Completed: My milestone update highlights significant enhancements in search functionality, the addition of new features for comprehensive data interaction, and improvements in UI and project architecture for an enhanced user experience.

**Existing Functionality:** Confirmed successful implementation and correct operation of all functionalities and requirements from the previous assignment.  
  
**Search Enhancements:** Enhanced search capabilities on Artist, Album, and Track pages, including dynamic filtering based on user-entered search terms using LINQ queries.  
  
**Music Catalog Addition:** Introduced a new Music Catalog page, accessible via the Pages menu and button toolbar, showcasing a databound GUI that displays data either in full or starts blank. Data is organized by artist name initials, with collapsible groupings for artists, albums, and tracks.  
  
**Customer Order Search Page:** Added a Customer Orders page with databound GUI for viewing customer and invoice details. Features include comprehensive data display (name, location, email) and collapsible sections for invoice details.  
  
**UI and Project Architecture:** Maintained a clean and organized project structure adhering to class conventions. Implemented UI styling through resource-defined style elements, enhancing the application's visual appeal and user experience.

Jack Huynh outlined his portion of the project's aim to create an innovative basic player application suite encompassing multiple components. In the initial phase of development, which Huynh undertook personally over the course of the first two to three weeks, his efforts were primarily focused on documentation and research. During this period, Huynh dedicated himself to mastering advanced JavaScript techniques, with a particular emphasis on understanding complex concepts related to JavaScript and asynchronous programming, which are crucial for API development. He has acquired proficiency in advanced JavaScript frameworks and techniques, including React and jQuery, and has gained knowledge on manipulating JSON and interfacing with APIs. Additionally, Huynh explored the YouTube API, though he has yet to incorporate this into his coding.

Gregory Pomeroy reported that he has made significant progress on his assigned segment of the project. He initially faced challenges in comprehending and adeptly employing the Web Audio API due to its intricate features and extensive functionalities. Despite these initial obstacles, through persistent research, experimentation, and practice, he has managed to surmount these difficulties. Pomeroy now confidently reports achieving a notable level of proficiency with the Web Audio API. His enhanced understanding and capability in utilizing this technology signify a crucial advancement in the project. Pomeroy's progress is viewed as a vital contribution towards the collective efforts of the team, and there is a shared optimism regarding the positive impact his expertise will have on the project's overall success.

# Sub-Paragraphs

*Again, break down the subparagraphs in a way that makes sense. Include diagrams and tables as needed.*

# Milestone 3 Completed:

In milestone 3, I successfully refined all aspects that were introduced in the prior milestone. This refinement includes enhancing the layout to mirror the aesthetic of Spotify and resolving issues related to button functionality.

This milestone update underscores significant progress in search capabilities, the incorporation of new features for a more robust data interaction, and advancements in both UI and project architecture, collectively contributing to an improved user experience.

* **Existing Functionality:** I confirmed the seamless integration and proper functioning of all features and requirements from the previous milestone.
* **Search Enhancements:** I improved the search functionality across the Artist, Album, and Track pages. This includes dynamic filtering based on user-input search terms, utilizing LINQ queries for a more responsive and precise search experience.
* **Music Catalog Addition:** I introduced a new Music Catalog page that users can access through the Pages menu and button toolbar. This page features a databound GUI that can display data in its entirety or start from a blank state. Data is organized alphabetically by artist name initials and offers collapsible groupings for easier navigation through artists, albums, and tracks.
* **Customer Order Search Page:** I added a Customer Orders page featuring a databound GUI that enables users to view detailed customer and invoice information. This page includes a comprehensive display of data such as names, locations, emails, and collapsible sections for detailed invoice information.
* **UI and Project Architecture:** I maintained a structured and clean project layout that adheres to class conventions and implemented UI styling through resource-defined style elements, significantly enhancing the application's aesthetics and overall user experience.

Jack Huynh contributed to the project by setting the foundation for an innovative basic player application suite, incorporating multiple components. In the initial development phase, which spanned the first two to three weeks, Jack focused on documentation and research. He dedicated himself to mastering advanced JavaScript, with a special focus on understanding complex concepts related to asynchronous programming essential for API development. Jack has become proficient in advanced JavaScript frameworks and techniques, including React and jQuery, and has learned to manipulate JSON and interface with APIs. He has also explored the YouTube API, which he plans to incorporate into his work in the future.

Gregory Pomeroy has made substantial progress in his assigned portion of the project. Initially challenged by the complexity of the Web Audio API, Gregory has, through diligent research and practice, overcome these hurdles. He now reports a high level of proficiency with the Web Audio API, marking a significant step forward in the project. Gregory's advancements are crucial to the team's success and foster optimism for the positive impact his expertise will contribute to the project.

# Sub-Paragraphs

*Again, break down the subparagraphs in a way that makes sense. Include diagrams and tables as needed.*

# Milestone 4 Completed:

***To be detailed by April 12, 2024:*** *Summary of what I did for Milestone 4*

# Sub-Paragraphs

*Again, break down the subparagraphs in a way that makes sense. Include diagrams and tables as needed.*

# Demonstration Paragraphs

*This section will showcase the results of the project. To be completed as part of the Final Phase Presentation on April 17, 2024.*

# [Appendix A.](#_Toc92801381) Requirements Traceability

*This section will include code snippets, GUI snippets, and other relevant materials to demonstrate how the project requirements have been met. This will be organized to provide clarity and reduce clutter in the main document. Detailed content will be added following the completion of the Final Delivery on April 17, 2024.*