# BTree Visualization Team Charter

## Team Members:

* Dakota DeAnda
* Emily Elzinga
* Alice Giola
* Tristan Anderson
* Andreas Kramer
* Zackary Beck

## Team Organization:

### Roles and Responsibilities:

* **Andreas Kramer (Team Director):**
  + Responsible for overall project management and coordination
  + Takes attendance during team meetings.
  + Final decision-maker in the absence of unanimous agreement
* **Tristan Anderson (Team Producer)**
  + Supports project execution and ensures timely deliverables.
  + Keeps track of the task list
  + Manages communication with the client.
* **Dakota DeAnda, Emily Elzinga, Alice Giola, Zachary Beck (Team Members):**
  + Task assignments will be decided collectively based on individual strengths and project requirements.
  + Actively participate in team discussions and decision-making

### Task Assignment:

* A regularly updated task list will be maintained and shared using project management tools.
* Task assignments will be decided based on individual strengths and project requirements.

## Attendance Rules:

* **Attendance is mandatory at all scheduled team meetings.**
* Team members must communicate if unable to attend.
* Every team member is responsible for keeping notes about topics discussed and decisions made during team meetings.

## Decision-Making Process:

* Decisions will be made through collaborative discussions during team meetings.
* Unanimous agreement is preferred, however, in the absence of unanimity, the Team Director makes the final decision.
* Input from all team members is valued and considered.

## Team Meetings:

* **Scheduled Meeting Time:** 8:00 am – 8:50 am, Monday/Wednesday/Friday (MWF)
* **Meeting Frequency:** Regular team meetings will discuss progress, challenges, and planning.
* **First Client Meeting:** Friday, January 26th, at 8:00am.
* **Client Meeting Frequency:** Weekly/bi-weekly meetings will be scheduled (adjusted as needed)

## Project-related Considerations:

* **Project Tools:** Initially using Windows Forms with C# and Visual Studio 2022; eventually transitioning to a web page.
* **Reference Material:** CS paper “The Ubiquitous B Tree”, USF Webpage of BTree visualization
* **Potential Extended Functionality**: Implementation of a B+Tree for primary key and B-Tree for secondary index.

## GitHub and Version Control:

* **Repository Name:** BTree-Visualization
* **GitHub Repository Link:** TBC
* **Git Usage:** Follow Git best practices for version control, including branches for features, regular commits, and pull requests for collaboration.
* **Coding Standards:** Agree on and adhere to coding standards within Visual Studio
* **Integrated Git Tools:** Leverage Visual Studio’s integrated Git tools for version control operations.

## Leadership Transition:

* In the absence of the Team Director, the Team Producer assumes leadership responsibilities.
* Smooth transitions will be ensured to maintain project momentum.

## Team Goal:

To deliver a fully functional and visually engaging implementation of B-Tree and B+Tree visualization, meeting the specified project requirements, and ensuring a comprehensive understanding of the underlying algorithms.

## Tentative Project Schedule

### Week 1-2 (January 24 - February 6):

* Team Kickoff:
  + Introduction to the project goals and expectations.
  + Overview of B-Tree and B+Tree concepts.
* Setup and Environment:
  + Set up individual development environments with Visual Studio.
  + Familiarize team members with Git and GitHub practices.
* Research and Planning:
  + In-depth research on B-Tree and B+Tree algorithms.
  + Define the scope and functionalities of the visualizations.
* **First Client Meeting January 26th.**

### Week 3-4 (February 7 - February 20):

* B-Tree Implementation:
  + Begin implementing the basic structure of the B-Tree.
  + Incorporate essential functionalities for insertion, deletion, and search.
  + Initial visualization of B-Tree operations.

### Week 5-6 (February 21 - March 6):

* B-Tree Refinement:
  + Refine the B-Tree implementation based on initial testing and feedback.
  + Enhance visualization elements for clarity and user understanding.
* Present initial progress to the client.
* Gather feedback for adjustments.

### Week 7-8 (March 7 - March 20):

* B+Tree Implementation:
  + Start implementing the B+Tree, building upon the B-Tree foundation.
  + Focus on additional features such as degree selection and visual differentiation.
  + Visualization enhancements for B+Tree operations.

### Week 9-10 (March 21 - April 3):

* Transition to Web Version:
  + Begin transitioning the visualization to a web-based platform.
  + Ensure responsiveness and interactive features for web users.
  + Conduct testing for cross-browser compatibility.
* Present progress on B+Tree implementation and web transition.
* Address any client feedback.

### Week 11-12 (April 4 - April 17):

* Refinement and Testing:
  + Thoroughly test both B-Tree and B+Tree visualizations.
  + Identify and address any bugs or issues.
  + Refine the user interface and experience.
* Documentation:
  + Begin comprehensive documentation of code, functionalities, and user guides.

### Week 13-14 (April 18 – April 28):

* Final Touches:
  + Implement final adjustments based on testing and documentation.
  + Ensure code readability and adherence to coding standards.
  + Present the near-final product to the client.
  + Gather any last-minute feedback.
  + Conduct final testing and bug fixes.
  + Prepare for the team presentation.
* Final Team Presentations
  + Deliver the final team presentations showcasing the completed project.