**Project Proposal: Time Traveler’s Quest**

**Project Name:**

**Time Traveler’s Quest**

**Project Overview:**

*Time Traveler's Quest* is a 2D puzzle-adventure game designed by us to provide an immersive experience through time manipulation. In this game, players will navigate a maze that changes over time, moving between two different eras: the present and the past. By solving puzzles, overcoming challenges, and using time travel to unlock new areas, players will uncover the secrets of the maze while interacting with various items like doors, keys, and obstacles.

**Project Objectives:**

* Develop a game using C++ with SFML (Simple and Fast Multimedia Library) for graphics, aiming to build a visually appealing and functional 2D maze game.
* Implement time travel as a core mechanic, where the maze layout and interactions will differ between the present and past, affecting gameplay.
* Create a fully interactive environment with key game elements like doors, keys, and player movement.

**Key Features:**

1. **Time Travel Mechanism:**
   * Players will be able to switch between two time periods (present and past) to navigate the maze. This will allow access to new areas or items that were previously inaccessible.
2. **Maze Design:**
   * The game will feature a 15x15 grid maze where the layout and challenges will change in each era. Players will encounter locked doors and hidden keys in the past and present, creating the need for strategy and puzzle-solving.
3. **Textured Graphics:**
   * The game will use SFML for handling graphics, with different textures for walls, paths, doors, keys, and the player character, to create a more engaging and visually dynamic environment.
4. **Puzzle Solving:**
   * Players will encounter puzzles that must be solved using the time travel mechanic. Some areas of the maze will only be accessible in a specific time period, requiring the player to switch between the present and past to progress.
5. **User Interaction:**
   * The player will control a character (represented by a simple avatar) within the maze using keyboard input. The goal is to find and unlock the exit by solving challenges and overcoming obstacles using the time travel feature.
6. **SFML Graphics:**
   * The game will utilize SFML to display the maze with textured tiles for walls, paths, doors, and keys. The interface will be a simple, intuitive 2D layout, with real-time interaction as the player moves through the maze.

**Development Plan:**

* **Phase 1**: Basic game setup, including creating the maze grid using 2D arrays two such arrays will be made one for present and one for past and handling of player movement.
* **Phase 2**: Implementing time travel mechanics and creating two distinct maze layouts for the present and past which can be shifted by pressing ‘T’.
* **Phase 3**: Adding textures for tiles and designing the user interface.
* **Phase 4**: Final testing and debugging, ensuring smooth gameplay and functionality.

**Conclusion:**

*Time Traveler’s Quest* is a challenging and engaging game that will allow players to explore the concept of time travel through puzzles and adventure. The project will not only help me learn key programming concepts in C++, such as arrays, loops, and functions, but also provide a visually engaging experience through the use of SFML for graphics.