# README for 'A Day in Darkness'

## Overview

'A Day in Darkness' is a 2D side-scrolling game developed using the SFML (Simple and Fast Multimedia Library) framework. The game combines immersive themes, interactive gameplay, and strategic challenges where players navigate through ancient and modern scenarios, collecting items, avoiding obstacles, and surviving with limited resources. The game integrates OpenCV for video playback and utilizes audio-visual assets for an enriched experience.

## Features

### 1. Game Modes

- Ancient Theme: Players collect cotton and avoid obstacles while progressing through levels.

- Modern Theme: Features a more futuristic setting with KFC collectibles and modern obstacles like police officers and babies.

### 2. Dynamic Gameplay

- Items such as cotton, KFC, watermelons, and whips fall from the top of the screen, and the player character must navigate to collect or avoid them.- Levels become progressively harder, with faster falling objects and more frequent obstacles.

### 3. Health and Score System

- Players have a health bar representing their vitality.  
- Collectible items increase scores, and collisions with certain obstacles (e.g., whips or police) decrease health.

### 4. Sound Effects and Music

- Background music changes based on the theme (Ancient or Modern).  
- Sound effects for interactions like collecting watermelons or colliding with obstacles.

### 5. User Interaction

- Player inputs their name before starting the game.  
- A leaderboard displays high scores to foster competitive gameplay.

### 6. Settings

- Adjustable volume and brightness.  
- Ability to toggle sound effects on/off.

### 7. Intro Video

- OpenCV integration for playing an introductory video before the game begins.

## Controls

- Arrow Keys: Move the character left or right.  
- A: Select Ancient Theme.  
- M: Select Modern Theme.  
- TAB: Start the game.  
- ESC: Access the settings menu or exit to the main menu.  
- L: View the leaderboard.  
- T: Toggle sound effects on/off.  
- R: Restart the game.

## Gameplay Rules

1. Collect items to increase your score and progress through levels:  
 - Cotton (Ancient Theme) or KFC (Modern Theme) increases score.  
 - Watermelons or babies add extra time or health.  
2. Avoid harmful items:  
 - Whips and police decrease your health.  
3. Survive until the time runs out to complete the level and advance to the next.

## Setup and Requirements

### Dependencies

1. Libraries:  
 - SFML: For graphics, window management, and audio.  
 - OpenCV: For playing intro videos.  
 - FFmpeg: For video decoding.  
2. Resources:  
 - Fonts, textures, and audio files stored in the `resources` folder.

### Installation

1. Ensure you have a C++ compiler and IDE capable of building SFML projects.  
2. Install the required libraries:  
 - SFML (2.5.1 or later)  
 - OpenCV  
 - FFmpeg  
3. Clone or download the project files and place the assets in the appropriate directories.  
4. Build and run the `main.cpp` file.

## Code Structure

1. Main Class: `Game`  
 - Handles game states, rendering, input processing, and updates.  
2. Game States:  
 - `NAME\_INPUT`  
 - `THEME\_SELECTION`  
 - `MENU`  
 - `PLAYING`  
 - `MODERNPLAY`  
 - `SETTINGS`  
 - `LEADERBOARD`  
3. Items:  
 - Defined as structs (`Cotton`, `KFC`, `Watermelon`, etc.).  
4. Sound and Music:  
 - Managed through SFML's audio modules.  
5. Rendering:  
 - Handles brightness, health bar, and in-game text updates.

## Challenges and Rewards

- Survive falling objects while maintaining your health and progressing through levels.  
- Balance time, health, and score to maximize your leaderboard ranking.

## Future Improvements

- Add more themes and levels.  
- Introduce multiplayer support.  
- Include power-ups and new obstacles.

## Credits

- Developer: Mujtaba, Sheharyar

-Team Assistants: Abdullah Shafaqat, Hamza memon, Syed Ahmad

- Libraries Used: SFML, OpenCV, FFmpeg