

Game Design Document for:

Solitaire Universe

The Ultimate Solitaire Game

“Can you beat the deck?”

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Written by Ashley Thew

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Design History

This is a brief explanation of the history of this document.

The design history is used to track my progress whilst laying out the foundations for the game. It will track changes to specific areas of the document within the document for areas that required adding or changing due to circumstances.

Version 1.00

Version 1.00 was the start of designing basics of the game overview, this would allow me to determine whether the game was feasible or not. Here is what I added.

1. Wrote Game Overview.
2. Wrote Common Questions
3. Wrote Feature Set

Version 1.10

Version 1.10 includes the games overall look and feel as well as core game concepts.

1. Wrote The Game Board
2. Wrote Rendering System
3. Wrote Game Engine

Version 1.20

Version 1.20 includes more detailing on the game visual interface and audio elements, which will aid in improving the players experience whilst playing the game. I also jotted down some random thoughts I had for the game in the extra's area.

1. Wrote User Interface
2. Wrote Musical Scores and Sound Effects.
3. Wrote Single Player Game
4. Wrote Extra Miscellaneous stuff

Game Overview

Game History

The game Solitaire (otherwise known as Klondike) has been enjoyed by card game lovers since the late 19th century (Klondike (solitaire), 2021). The game became very popular for computer players with its inclusion in the Microsoft Windows operating systems in the 1990's.

Standard Game Rules

The game rules require a standard pack of cards, 52 cards total not including the jokers. The cards lay on the board in 7 columns with the first column start with 1 card and increasing by 1 card for each consecutive column. All cards but the last card in the column is hidden from the player to increase difficulty. This ends with 28 cards on the board with 7 cards showing, the remaining cards are held in the deck and are shown to the player 3 at a time.

Common Questions

Why create this game?

I have always enjoyed card games and creating them helps me deeper understand the game. I want to bring the same game with different challenges to the player.

What is the main focus?

The main focus to the game is to clear the board and deck of cards by placing them in order into the storage. When the storage is complete the game is considered complete.

What's different?

This game brings a new twist to a classic game, with the custom race against time and swap modes. All Solitaire game lovers will enjoy these modes as it provides an extra challenge to the beloved game.

Feature Set

General Features

Standard Solitaire
Race against time Solitaire
Swap Solitaire
Auto complete board
Hiscores time completed
Hiscores least actions

Gameplay

Main menu for game selection
Game menu to restart game
Ability to drag cards across the screen.
Double click background for auto completion.

Asset List

Assets required

- Card covers
- Board background
- Menu buttons
- Xbox controller buttons
- Sound effects
- Animation effects

The Game Board

Overview

Standard Solitaire game board layout, deck located at the top right, card suit storage at the top right, main board with textured fabric green background, 7 columns of card evenly spaced out.

Timer Feature

Timer featured at the top middle of screen for users to keep track of the amount of time they have taken to complete the current game. This area will also display the players current best times from the hiscores. The timer will switch to counting down when in race against time mode.

Actions Feature

Underneath the timer feature will be the actions counter, showing the current number of actions taken in the game. Below it will be the players best number of actions taken from the hiscores. An action is defined as the movement of a card or click on the deck, when interacted with it will increase the action counter.

Auto Complete

When playing at any point the user will be able to double click the background with a mouse, or when using a controller press a specific button to auto complete the board. When the auto complete action is activated, the board will automatically place any possible cards into the storage area. This will help speed up game play, and will still properly track users actions for each card moved.

Game Menus

Overview

After launching the game, the player will be greeted with a game menu with several options.

Quick play: To quickly launch into a normal game.

Game mode: Will open a submenu for the player to select a specific game mode to play.

Hiscres: Opens the hiscores interface.

Credits: Displays the games credits.

Quick Play

Launches the game into a standard game of Solitaire with no time limit or custom modes.

Game mode

Displaying a list of gamemodes in order with sub headings for info:

Normal: Standard game of Solitaire

Race against time: A 10 minute game of Solitaire

Swap: Cards swap at random when playing

Hiscores

The hiscores will be accessible from the main menu, then the scores will be split among the different game mode types, normal, race against time and swap. Each score will hold the time taken to complete the game as well as the actions taken to complete the game.

Credits

Displays the game version, author and middleware used along with any logos for the middleware.

At any point whilst in a game mode the user will be able to open a game menu, where they will be given the following options:

Return: Return the player back to the game.

Controls: Open the control menu.

Main Menu: Return to the main menu.

Controls

Display information on how to play the game, including the standard Solitaire game rules and controls for mouse and xbox controller.

Rendering System

Overview

The rendering system in the game will be constructed with 2d elements placed on the screen, each element will be given texture to draw from.

2D Rendering

The rendering engine chosen for the game is SDL (Simple DirectMedia Layer, 2021) via opengl, this will allow us to read image files and render them on the screen in a 2d plane.

Game Engine

Overview

The game engine has been designed in our Game Programming class from Steffan Hooper to help us develop games faster rather than having to spend large amounts of time creating our own engines.

Game Engine Scenes

The game engine is designed to keep track of scenes and render the active scene to the players. This allows for multiple scene's to be loaded at start-up and the ability to switch between scenes at runtime.

Game Engine Controller

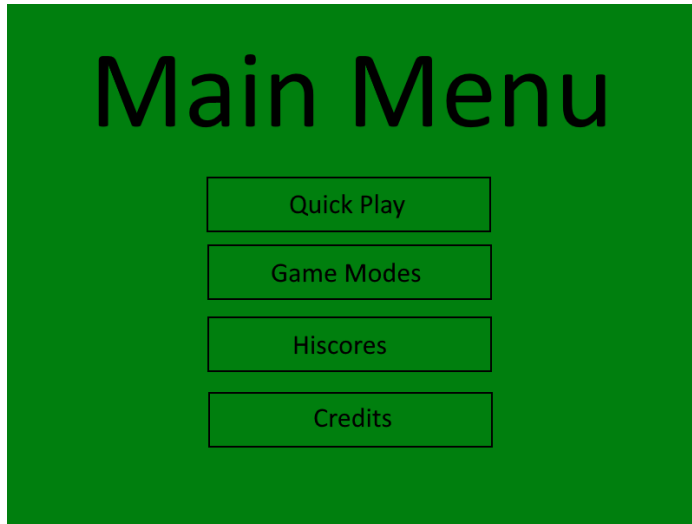
Support for xbox controllers is built into the game engine, this allows us to easily add support for controllers to the game which is desirable.

User Interface

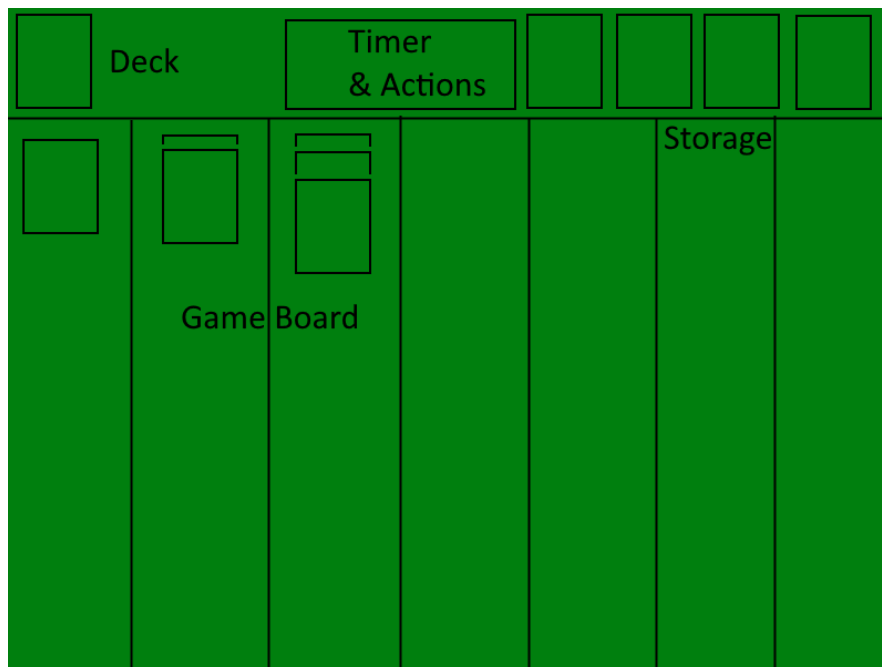
Overview

The interface will be simple with a green fabric type background to imitate a card game table, along with the game menu's and interface on top.

Main Menu Interface



Game Interface



Musical Scores and Sound Effects

Overview

If possible, within the timeframe of this games design I would love to implement some background music alongside sound effects for elements of the game play.

Music

I am unsure how to implement music at this time but would most likely use a middleware for implementing the music to be read from .wav files and to run on game start up. The music would either loop or run through multiple music files at random.

Sound Effects

For sound effects I will either create sounds with the sfxr application provided in the course or look online for free card sound effects available for download. These will be loaded into the game engine via the middleware fmod and played when elements of the game are interacted with.

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Some of the elements I wish to have sound effects are:

Menu Clicks: A click sound for interacting with menu buttons

Card Move: Card like sounds when selecting/moving/storing cards

Single-Player Game

Overview

This game is mainly a single player game, whilst players may store their name in the hiscores as their own the actual game is played by a single player.

The standard game has no time limit whilst still having a timer to track how long it takes for the player to complete a game. The aim of the game is to clear the board and deck of cards by placing them in order from ace to king in the storage area. Once completed the game can be restarted to try beat the last time or another game mode selected.

Each delt board will be randomly generated of the 52 cards, meaning there is 52 factorial possible combinations of cards, leading to a the feeling of a unique board each time the game is played.

Hours of Gameplay

Each game can take a varying amount of time, with some delt boards being impossible to complete adding a complexity of determining whether the game is completable or not.

Victory Conditions

Once the board and deck are all cleared of cards is considered a victory for the player.

Extra Miscellaneous Stuff

Overview

This area is for me to jot down ideas for potential future improvements to the game. Such as additions or new features, things I would like to implement but might not have the time required in the time for the course.

Other game modes to potentially implement

Since many game types are card based, implementing them would mostly only require adding to the engine to support multiple game types.

Different game types such as:

- Free cell

- Spider

Bibliography

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