Dominoes Deluxe (working title)

Project Objectives

Game is created in Unity for ios and Android and web(900x600). It should be backwards compatible to iphone 6+. It should have adaptive UI for all devices and work well on ipad.

Game will be made using Skilltech 3 prime plugin, provided by David Diaz to Bacord with all supporting documentation.

Art asset bundles should be under 20mb.

Aim should be to match the quality and production of dominoes gold.

Client is responsible to create the home screen, game scene, results screen and how to play section.

The differences and improvements in this design over Dominoes Gold are highlighted in yellow.

Overall Game Flow & Start Screen

After selecting a tournament, the game loads. The presentation of the game load will vary based on platform. After the game loads, the Start Screen will appear.

The Start Screen will have the following buttons:

- Settings button (gear icon) - This button opens the Settings menu where players can adjust the volume of the music and sound effects.
- "Start Button" - The game begins when the player clicks the button.
- "How to Play" button - This button opens the 'How-to-play' pop-up. This pop-up contains a paginated series of screens that explain how to play. The design and copy for the How to Play is appears later in this document.

The position of the buttons on the new Start Screen should be modeled after our most recent games but the layout does not need to match exactly.

After starting the game, the Game Screen animates in (design a pop-in or build-in animation). There should be a "3..2..1...Go" animation and then the timer starts. The player plays until time runs out, until a winner is declared (the player or AI meets or exceeds 100 points), or if the player chooses to quit early.

Game Play UI

The Game Play Screen is meant to feel like you are sitting across a table from another player, playing dominoes on a table. It includes the following elements:

- Top HUD
    - Game timer element - small timer in M:SS format at top of screen

- o Score element - small element at top of screen that displays both the player's score and the AI player's score. The score fields will hold an integer up to 3 digits.
    - o Turn indicator – A graphic that shows who's turn it is, this can be part of the score element.
- AI hand – face down tiles at the top of the screen that represent the opponent AI's hand. These should be small and can be tucked under the top HUD. The purpose is to show the player how many tiles the AI has in hand.
    - o This element could theoretically hold 10 –15 tiles.
- Player's hand – face up tiles at the bottom of the screen that represent the player's hand. These should be larger than the AI hand so the faces can be clearly read. Each tile should be completely visible, no overlapping or splaying. Players will drag tiles from their hand onto the board.
    - o The hand should show 8 tiles at full size. But since the player's hand could theoretically hold 10 –15 tiles, the UI needs to accommodate these rare cases. In this case, the hand should become left/right scrollable, showing 8 full tiles and hiding the rest until scrolled.
- Board – the initially empty playing space in the middle of the screen. Both the player and the AI will play tiles to the board, following the rules of Domino.
- Tile counter – a small UI element that tracks the following:
    - o Number of tiles on the board
    - o Number of tiles in the Boneyard
    - o Current sum of open ends - shows the current total for the open ends on the board
- Boneyard – This UI element is hidden unless the player or AI needs to draw. For the AI, the element appears near the AI's hand and tiles are drawn to the hand automatically. For the player, the element appears near the player's hand and the player must tap the element to draw tiles. Helper text should appear after a few seconds if the play does not draw right away.
- Settings button - small button in top right that opens a pop-up. In some cases, opening this pop-up pauses the game. Within the pop-up, players can pause adjust the game settings and choose to end the game early.

Gameplay Description

Overview

The player must play a game of Dominoes against an AI opponent. The score posted will be based on how well the player does against the AI in this game of Dominoes. The player will earn and post a score if they win or lose against the AI.

The goal of the game is to earn 100 points before your opponent does. The game is played in a series of rounds over 5 minutes. The game ends immediately if,

- The player or AI wins - either player meets or exceeds 100 points
- The time expires

At the start of the game, both players (the AI opponent and the human player) draw 7 domino tiles. The human player goes first, then both players take turns playing dominoes to the board.

A round ends when either player "goes out," meaning they play all the dominoes in their hand. The player who did not go out discards their hand and the player who went out scores points for the leftover

tiles. After a round ends, if neither player has reached 100 points, a new round starts –each player draws 7 new tiles and whoever went out in the previous round goes first in the new round.

Domino Deck

The deck is made up of 28 unique tiles. Each tile has two ends. Each end shows dots representing a value of 0 – 6. Each value appears 7 times, each time opposite another unique value.

Therefore a dominoes deck is composed of the following 28 tiles:
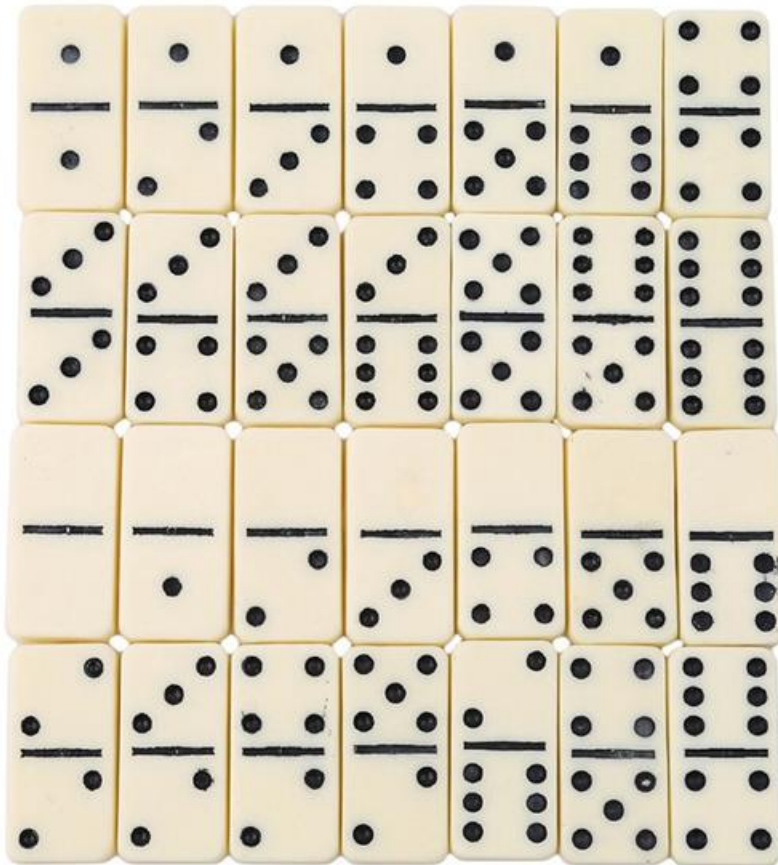
At the start of a round, each player draws 7 tiles leaving 14 tiles in the deck.

Rules for Placing

At the start of the game, the human player goes first and must place a piece on the board. At the start of each subsequent round, the player who played the last domino in the previous round goes first (usually this is the player who went out in the previous round). The players can play any domino from their hand at the start of a round. *Note - placing this first domino can score points.*

The other player must then place a domino from their hand following these rules:

- A domino placed onto the board must connect to the dominoes already on the board.
- Dominoes only connect at their ends (the short side) except for double-sided dominoes which have special rules (see below).
- A domino can only be connected if the value of the connecting ends match.

Double-sided dominoes are special in a few ways:

- When placed, they are connected in the middle of the long side.
- When placed, the value of one side (not doubled) must match the end to which the double-sided domino connects.
- Once on the board, a double-sided domino must first be connected on the opposite open long side. Once the double-sided domino is connected on both long sides, players can connect dominoes to the short sides. The exception here is if the board needs to reconfigure to account for keeping the zoom level high (see Dynamic Configuration below).

Rules for Counting

Points are scored during the game whenever a player connects a new domino and the sum of all the ends equals a number that is divisible by five.

An end occurs when a domino is only connected to one other domino. Once a domino has been connected to two dominos, it is no longer an end. While it is possible to connect to a double-sided domino more than twice, a double-sided domino is no longer considered an end once it has two connections.

When a double-sided domino is an end, it counts as the value of both its ends. Therefore, an open double-sided six is counted as twelve, an open double-sided five is counted as ten and so on.

The Boneyard/Drawing

When it is a player's turn but none of the dominoes in the player's hand have a valid placement on the board, that player is forced to draw.

When the human player must draw, The Boneyard UI element appears on screen and the player must tap it to draw a new domino from the deck into their hand. If the newly drawn domino cannot be placed, then the player must draw again. The player keeps drawing until they draw a domino that can be placed. Once a domino with a valid placement is drawn, The Boneyard UI element disappears and the player must continue their turn by placing the drawn domino.

If the AI player must draw, it draws automatically. The AI should draw one tile at a time with a second in between each draw if more than one tile must be drawn. The AI continues playing once it draws a valid placement.

If the deck runs out of dominoes and a player needs to draw, then the round ends and a new round begins. A message should be displayed that says, "Out of Moves." In this case, neither player "won" the round and therefore neither player earns points for having more tiles than their opponent. It should be incredibly rare for the deck to run out.

Game End Conditions

- As soon as either player meets or exceeds 100 points, the game ends and transitions to the Results Screen.
- As soon as the timer expires, the game ends and transitions to the Results Screen.
- If the player chooses to end the game early using the Settings pop-up, the game ends immediately and the Results Screen is shown.

Scoring

Points are earned during play for the following:

- Whenever a player places a domino on the board, if all the open ends sum to a number divisible by five, then that player scores points equal to that sum.
- At the end of a round, the player who went out scores 5 points per domino in the opposing player's hand.
- If the human player won the game of Dominos, then they earn a "Spread Bonus." The Spread Bonus is equal to the difference in points between the human player and the AI player. If the human player loses the game, no Spread Bonus is earned.
  - Example – The human player won with 100 points and the AI had 55 points. The Spread Bonus = 45 points.
  - If the game runs out time before a winner is declared, the human player will still earn a Spread Bonus if the game ended while they were ahead.
- At the end of the game, the human player earns a time bonus based on how many seconds are remaining. The time bonus earned is equal to 0.5 points per second remaining multiplied by their score as a percentage (rounded up).
  - Example 1 – A player wins the game with 100 points and there are 2 minutes and 15 seconds left on the clock. The player earns 135 * 0.5 * 1.00 = 68 points.
  - Example 2 – A player wins the game with 110 points and there 3 minutes and 38 seconds left on the clock. The player earns 218 * 0.5 * 1.1 = 120.
  - Example 3 – A player loses the game with 75 points and there are 2 minutes and 45 seconds left on the clock. The player earns 165 * 0.5 * 0.75 = 62.

A.I.

There should be two different difficulties for the A.I. player – Easy and Hard. Which difficulty we use should be controlled by the Tournament Options (passed in at the beginning of the game).

The Easy A.I. should choose a random playable tile from their hand.

The Hard A.I. should always choose the highest scoring playable tile from their hand.

Results Screen

The Results Screen summarizes the player's performance and shows the final score that will be submitted for the tournament. The following items appear on the Results:

- Points Earned
- Spread Bonus (only show if the player won against the AI)
- Time Bonus
- Total Score
- Daily and Lifetime high scores <need design details>

The Results Screen also has a "Submit Score" button that closes the game and returns the player to the Tournament Results.

UI/UX

Controls

When it is the human player's turn, the human player uses touch controls or mouse to drag tiles from their hand onto the board. Releasing a domino over the board drops it into a valid placement. If there is more than one valid placement, then the domino will fly to the closest valid placement. If a domino is released and it is not over the board, it flies back to its original position in the hand.

Board Zooming

As the game is played, the zoom level on the board will change to ensure the entire board is visible. The game begins a fairly high zoom level, the first domino placed on the board will appear quite large. Each time a new domino is placed, the view zooms out effectively shrinking the dominoes on the board. However, there is a limit on how far out the game will zoom and the board configuration may need to change to accommodate more dominoes.

Dynamic Domino Configuration

As more and more dominoes are placed on the board, the configuration of the dominoes will shift when necessary to ensure the game view doesn't have to zoom out too far. To maintain a maximum zoom level, no line of Dominoes on the board should exceed 6 ½ dominoes in length. When a domino is placed that causes a line of dominoes to exceed that length, the game should do one of the following things to accommodate:

A straight line of dominoes can be changed so that one end of the line turns a corner:

A double sided domino can also be turned sideways to create a turn:

<example>

A connection to a double-sided domino can be moved to one of its short ends.

<example>

If a line of dominoes gets close to intersecting with another line of dominoes, then a turn can be reversed (flipped 180 degrees).

<examples>

UI/UX Assist Features

- Glowing ends on the board - When dragging tiles, a valid placement on the board should be highlighted. All tiles on the board that are valid placements for the currently dragged tile should have a glowing outline.
- Highlight Open Ends – When not dragging, the open ends on the board should be highlighted so the player can see at a glance what ends are open. This highlight should be much subtler than the above.
- Placement/Count Preview – When the player is dragging a domino. A ghost version of that domino should appear at the end where the domino will land when the domino is dropped. In or near the ghost preview, should be a number showing what the sum of the ends will be when the domino is dropped. If there is more than one placement for the domino on the board, the preview should move dynamically as the domino is dragged around.

Art & Animations

Asset List

Animation List

Name	Trigger	Description	Notes

Audio

Sound Effects List

Name	Trigger	Description	Notes

Music

Settings

The game settings can be accessed in two places

- On the Start Screen, tapping the settings (gear) button opens a Settings pop-up.
- During game play, using the settings button opens the 'Pause Menu pop-up.'

The following game settings are available on both pop-ups:

- Sound Effects – A slider that controls the volume of the sound effects.

First Time User Experience

Pause Menu Screen

The game should have a settings button on screen during gameplay. The settings button opens a pop-up that contains:

- The gameplay settings – e.g. SFX/Music sliders and mute buttons
- An option to end early
- Information about if the game is paused or not

On mobile platforms we allow players to pause the game for a short amount of time. The allowed pause time is equal to the length of the game clock so this game will allow players to pause for 2 minutes total. When the game is paused, the player should not be able to see the game play screen.

The game pauses in two ways:

- If the player taps the X button during gameplay and the player's allowed pause time has not expired.
- If the game loses focus (phone call, minimized app) and the player's allowed pause time has not expired.

There is different copy for the pop-up in each of the following cases:

Case 1: Player tapped X and there is pause time.

Copy:

- Header: Game Paused. Resumes in XX:XX
- Body: If paused for too long, the game will end & submit your current score.
- Buttons: <End Game> <Keep Playing>

Case 2: Player tapped X and there is no more pause time.

Copy:

- Header: End Early?
- Body: The game can no longer be paused. Our games require timely score submission and cannot be paused indefinitely.
- Buttons: <End Game> <Keep Playing>

Case 3: Game lost focus and there is pause time.

Copy:

- Header: Game Paused. Resumes in XX:XX
- Body: If paused for too long, the game will end & submit your current score.
- Buttons: <Keep Playing>

Case 4: Game lost focus and there is no more pause time because it expired while the pop-up was open.

Copy (same as case 2):

- Header: End Early?
- Body: The game can no longer be paused. Our games require timely score submission and cannot be paused indefinitely.
- Buttons: \<End Game\> \<Keep Playing\>

Domino Rules for Reference

https://www.dominorules.com/straight-dominoes

https://mastersofgames.com/rules/dominoes-rules.htm

https://www.dominorules.com/straight-dominoes

Edge cases

Locked board - this occurs when the Boneyard is empty and a player needs to draw. We will call this "Out of Movies," there are requirements for how to handle this case above.

How to Play

How to play guide should be animated: (see linked video)

5 screens

To Play...
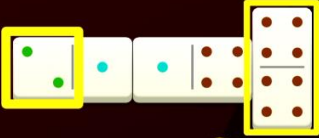
... MATCH THE ENDS OF DOMINOES.

NEXT

To Score...
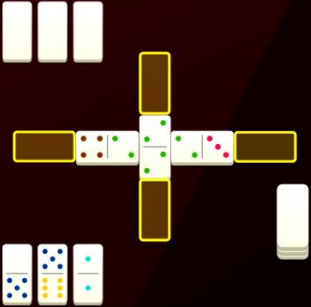
2 + 8 = 10 POINTS!

...MAKE THE ENDS OF THE BOARD A MULTIPLE OF 5.

NEXT

Can't Play?

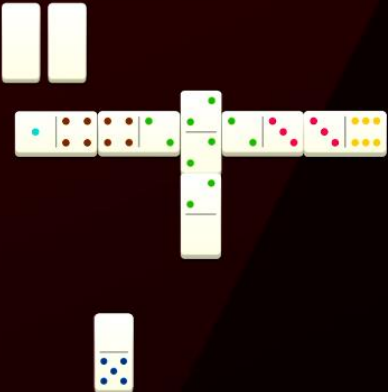DRAW FROM THE BONEYARD UNTIL YOU CAN.

NEXT

Go Out First!

YOU TAKE THEIR POINTS AND START THE NEXT HAND.

NEXT

Games are to 100

YOUR GAME		THEIR GAME	
YOU	COMPUTER	THEM	COMPUTER
100	30	100	80
+70		+20	

WINNER!

BEAT THE COMPUTER BY MORE THAN YOUR OPPONENT!

PLAY!

3 second counter