

Title of Project:

Hole in One Mini-Golf

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Executive Summary:

Hole in One Mini-Golf is a 2D game in which the player launches a ball into a play area in a scene in order to sink the ball in the designated target. Each scene corresponds to a hole in a golf game. The objective is to get the lowest score corresponding to the fewest balls needed to complete the course. The player's goal is to use only one ball per hole. A ball either falls into the hole or into a trap. A ball in a trap is not recoverable. The player must launch another ball into the play area. The player continues in the play area until the ball is sunk. The play area will contain several obstacles – geometrical shapes which will reflect the ball and keep it in play until it either falls into the target hole or into a trap. Some of the obstacles will be visible and others will not be visible.

When a new game is played, the scenes can change at the player's control. Random changes to the obstacles provide novelty.

Game Description

1. Overview: This game is a version of mini-golf in 2D. The objective of the game is to complete the course with the lowest score. The game is for a single player who can compete against his own performance. There is a lower bound on the score – one point per hole. Each hole is constructed as a different scene. The ball is launched at an angle and force determined by the player. The ball bounces through the obstacles – some visible and some invisible – until it either falls into the hole successfully or into a trap as a failed attempt. The player then launches additional balls with changed angle and force until he sinks a ball successfully. Then, the player moves onto the next hole (scene). The number of balls launched by the player until he successfully completes the hole is his score on the hole. A player may choose to introduce random changes on the obstacles to get a fresh layout when a new game is started. The default layout will always be available to return to.

2. Quest: The goal is to achieve the lowest score, i.e., the fewest balls launched in the play of the game. Obstacles are geometric surfaces which allow the ball to bounce into the field of play. The obstacles will be stationary and mobile – such as swinging bars, rolling balls, and tumbling ellipses and polygons. Some will be visible; some will be invisible corresponding to unevenness in topography or a black-box hazard in a 3D game. There are no levels *per se*. There are several different holes, as in golf.

3. Main Character: The only “character” is the player of the game. The player is represented by a launch device that sends the ball into the scene.

4. Sketch of the Main Character: The Main Character (the player) is represented by a launch device. It can be drawn as a tube that is pointed into the scene. It is movable in position and orientation along a vertical axis. The tube can pivot on a vertical axis perpendicular to the scene. When the player launches the ball, the ball will appear emerging from the tube as a projectile.

5. Opponents: The opponents are the obstacles and hazards that the ball encounters in the scene. They are geometrical shapes that provide surfaces for the ball to bounce from. The obstacles can also pivot to provide continually changing orientations. Some obstacles will be visible; some invisible. The traps will be geometrical shapes that will deactivate the ball when the ball collides with them. The traps that swallow the ball and the hole that is the objective will be colored

differently. A ball that becomes stationary due to loss of energy counts as a failure and will require launching of another ball to continue with the hole.

7. Environment: The environment of the game will be an abstraction of a mini-golf play area. Unlike a physical mini-golf environment, the scenes (the holes) have no physical or logical relationship with each other than sequence of play. Therefore, there is no need for a map of the mini-golf play area.

8. Sketch of the World: The world is simply a rectangular space in which the scenes (the holes) are revealed and played in.

9. Menus:

Initial Menu:

Choose game scene format:

__ Default format

__ Randomly generated format

10. Controls:

In the play of each scene (hole):

Select angle of launch (0 – 180 degrees, 0 is vertical up, 180 is vertical down): _____

Select force of launch _____ (needs maximum value as limit)

Trigger to launch ball.

11. Sounds:

Sound of ball being sunk in the target hole: trumpet fanfare

Sound of ball falling into a trap: oogah horn

Sound of music during play: La Folia originally written down by Jean-Baptiste Lully (1672). Arcangelo Corelli, Antonio Vivaldi, and many other composers had written sets of variations on this 16 bar tune later.

12. Summary:

Hole in One Mini-Golf is a simple 2D game that challenges a player to sink a ball in a hole like miniature golf overcoming the obstacles and hazards, both visible and invisible, presented in each hole. The ball must bounce on obstacles and walls in order to find its way to the hole. If a ball falls into a trap, the player puts another ball in play. The optimal situation is for a player to use only one attempt (one ball) on each hole. The lowest score wins. The player may play the default configuration of obstacles or may ask for a randomly changed set of obstacles in a new game.

The game requires simple graphics and no elaborate story line. It is a game that could be played on multiple devices to entertain oneself while waiting.