

Processing Random Golf Generation Application [Done in 3 Days]

Description

Processing Golf is a golf game that randomly generates each time the user starts up a map. As soon as the user presses the new game button a new map is generated for the user to play on and is generated according to the map that was selected and number of strokes the hole is worth...or at least as I continue development it will be that way. For now there is only one single map that can be chosen and strokes must be hardcoded in as of now, but that will change as the game furthers through development.

Usage of Randomization

There are roughly seven separate random algorithms hardcoded into the program give or take one, alongside the numerous calls of the basic random number generation built into the program's framework.

Usage of Random:

- ***Perlin Noise Random Generation Highlights***

- Flag Movement Animation**

- ⇒ A perlin generated wind variable scales the individual flag object in the x-Direction to simulate wind in the map

- Terrain Generation**

- ⇒ The terrain building algorithm consists of two separate random variables, a perlin noise generated radius variable and a basic random variable to add some variation in terrains that is multiplied by the radius and a cosine or sine variable depending on whether focusing on the X or Y component of the shape's vertex
 - ⇒ A basic random variable is also used in a push/pop matrix to rotate the generated terrains to once again add even more variation to the course

- ***Gaussian Random Generation Highlights***

- Distance for the ball to travel across the map**

- ⇒ This randomly generated value impacts the distance the ball will travel as well as how long the ball parabolically scales as it travels in the air

- ***Probability/Directed Random Generation Highlights***

- How Often to Generate a Map Hazard/Prop**

- ⇒ A random number is generated then is compared to several if/else statements to check whether or not to build a certain hazard on the map at an arbitrary position based on a for loop
 - ⇒ Hazards right now include water and bunkers, foliage is to be added

- ***Basic Random Number Generation***

- Terrain Location**

- ⇒ A basic random variable along with some brute force path finding is used to place certain terrains on the map as well as keep them in relatively close proximity of one another and not just spread out all over the place

- Hole Location**

- ⇒ A basic random variable is used to generate the location to place the hole relative to the Golf Green Terrain's center

- Tee Location**

- ⇒ A basic random variable is used to generate the location of the ball relative to the Golf Tee terrain's center

- Scale Offsets in Terrain Builder**

- ⇒ When passing parameters through to the Terrain builder, a random number can be sent through to add some variation to a terrain's x-Size and y-Size

Controls

Just the mouse, just click, do things, much fun, very yes

VERSION 2.1

- **UPDATES**

- Improved Vector system
- Improved UI
- Ability to change maps
 - Changes color palette and animated snow on the snow level
- When ball goes off the screen the game gives an Out of Bounds message and returns ball to previous position with an added stroke
- Ability to control the power on hitting the ball
- Ability to change club types
- Ability to see strokes
- Ability to exit current level and return to it again from main menu
- Several other minor tweaks and improvements