Interactive Sand Simulation App

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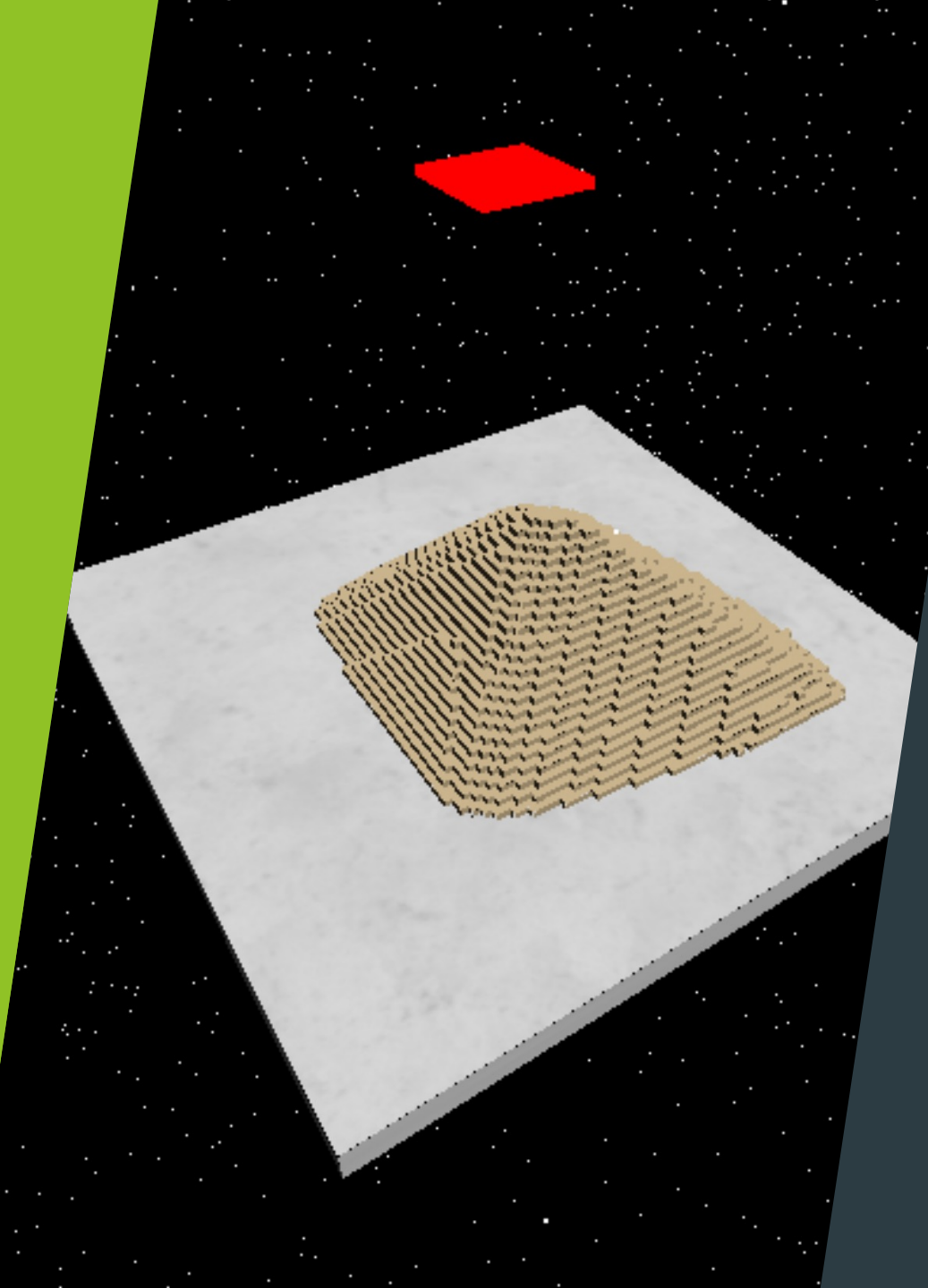


App Overview

- App Overview
  - Interactive sand dropper
  - adjustable platform dimensions
  - and a fan

How does it work

- 3d array to represent sand
- Instanced mesh to showcase sand
- **updateSandDynamics** method to simulate gravity and to the fans influence

gravity

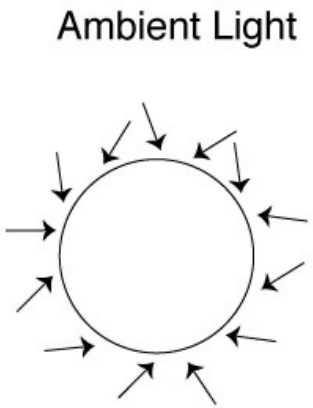
- If a particle can move downwards, it will.
- If obstructed, it checks for diagonal movements. And will randomly select which unobstructed direction to go

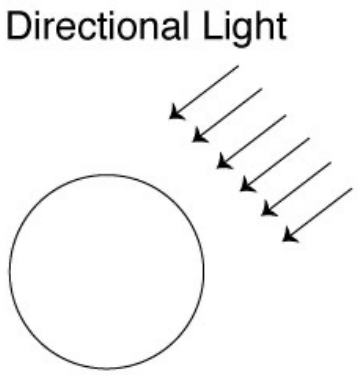
If the fan is on

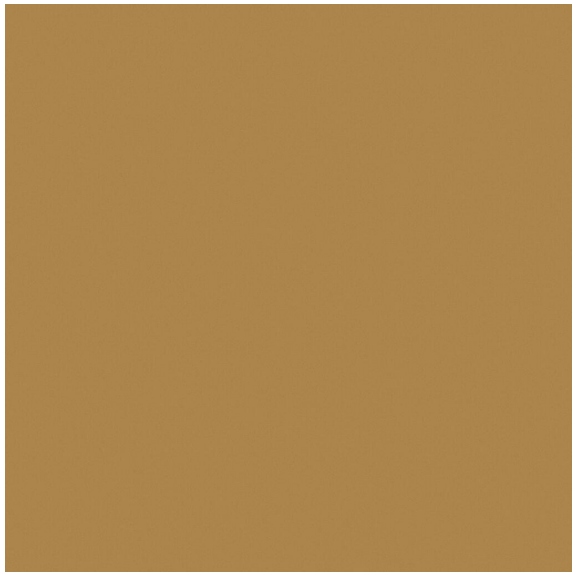
- If the sand particle is not on the ground it will move down and in the direction the fan is facing
- If the sand particle is on the ground it will move in the direction the fan is facing

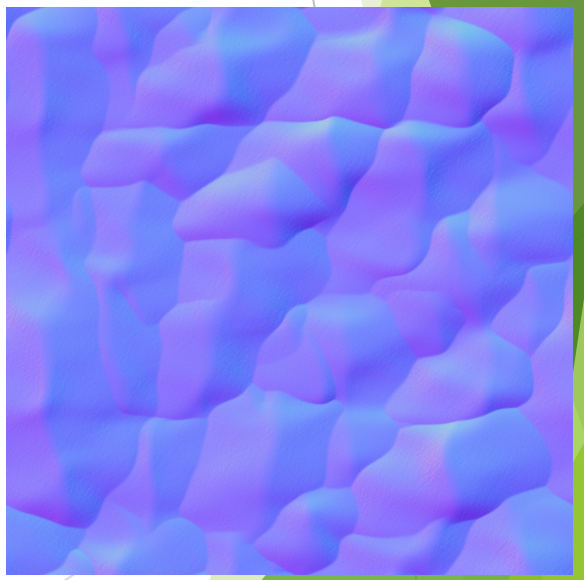
Visual representations

- Used a textureMap, NormalMap and roughness map for the platform and sand
- Used directional light for the lighting and ambient light









Future

- make it realistic
  - improved sand pilup algorithm based on angle of slopes, sand temperature and the speed at which the sand is falling.
  - improved wind algorithm based on wind speed and direction and determining which sand particles it would affect
  - larger scale for improved realism