Project 1

About

Task 1

- Bubbles agents
- Spawn in randomly within the viewport with random velocity

Task 2

- Forces were added using simple kinematics
- If agents were too far, then an acceleration would be added toward that direction
- Vice versa if agents were too close
- Forces takes into account all agents, not just nearby ones

Task 3

- Clouds are obstacles
- Spawned randomly within the viewport
- If a bubble hits a cloud, it will bounce in the opposite direction

Task 4

- Birb is the player
- Bubbles pass through the player
- If bubbles come close, they expand due to the heat of the birb and thermodynamics

Task 5

- Gameplay can be found in the `gameplay.mp4` file

Perlin Noise

- Perlin noise is used to generate the backdrop
- Backdrop is supposed to be clouds
- See more in Background Generation

Building

```
mkdir build && cd build && cmake ..
```

Running

```
make -C build/ && ./build/PA01 ./levels/level004.txt
```

Background Generation

Dependencies

```
pip3 install numpy noise Pillow
```

Running

```
python3 generate_background.py
```

This will generate `imgs/backdrop4.jpg` using Perlin noise.

Contributors

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