Group 28 OAC

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Block Builder

Block Builder

- What is it?
  - Basic version of Minecraft implemented solely in python
- Why Block Builder?
  - Gain experience developing a 3D game
  - Personal interest
  - It’s free!

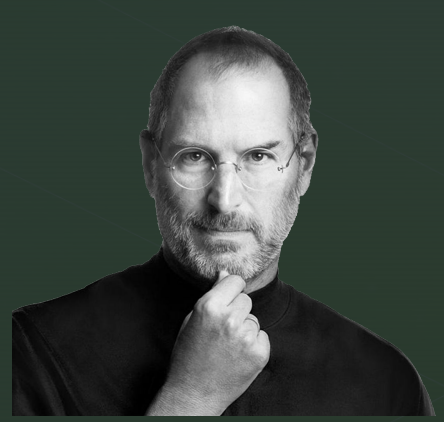
Scope

- Technology
  - Python3
  - Pyglet (Python multimedia library)
  - OpenGL (through Pyglet)
- Target Demographic
  - Children ages 4-16
  - Cheap parents
  - People who want to be creative!

Demo

Qualities

- Maintainability
  - Modularization of original code
- Usability
  - Usable by target demographic, children aged 4-12
- Portability
  - Runs on Windows and macOS



Modularization

- High Level Hardware interfacing
  - **Window.py**
    - ➢ Module that contains window state and OpenGL constructors
    - ➢ Actually displays the game
- Software Decision Module
  - **World.py** – Game logic Algorithms
  - **Function.py** - Helper functions that are not directly related to game logic
- Models and Constants
  - **Block.py** – In-game blocks construction
  - **Constants.py** – Game world constants (Texture coord, gravity, etc.)

Testing and Validation

- Dynamic, Manual Testing
  - Play the game by hand to perform manual tests
  - Primary source of validation
  - Asking users of various ages to rate the usability and resemblance to minecraft out of 10
- Pytest Unit Testing
  - Test basic functions, not very helpful in development.
    - Ex. Movement hard to test automatically

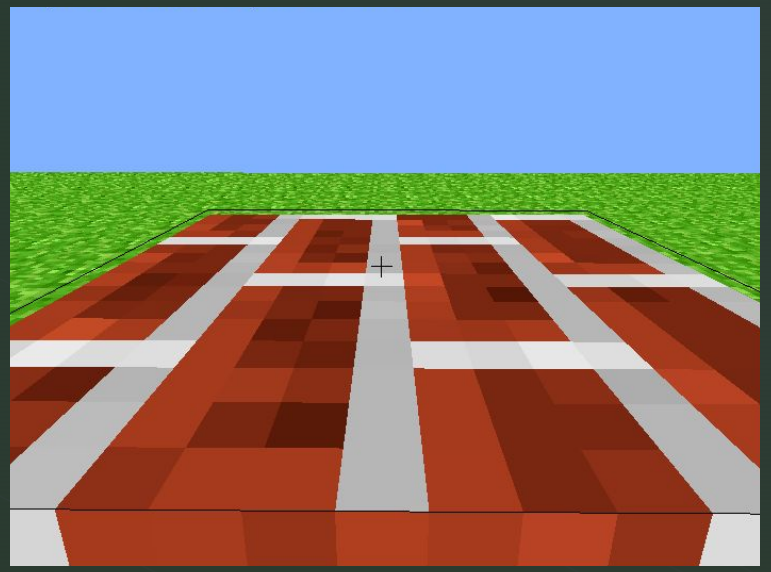
"I jumped off the map haha. 9/10 though." - Chris' Little Brother, 2018

"Your games are stupid go away" - Mom

"*Game of the year, better than Red Dead Redemption 2.*" - IGN

Notable Struggles

- Pyglet/OpenGL learning curve
- Collision Detection
- World “sectorization” and chunk loading



Next Steps

- Some features we would like to add that were not feasible given the time constraint:
  - Inventory Systems
  - Biomes
  - Items
  - NPC’s

Thank you for listening!

Want to see more of Owen?

Check out Owen's Twitch at:

https://www.twitch.tv/mcfeelio