VGP130

Dylan Hancock

Eric Folland

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How to play:

Use arrow keys to move. Find apples in the world and eat enough so that you don’t starve. See how many you can collect before you starve. The fullness bar in the upper-right shows how much fullness you have left. If you die, press enter to start again on a new map and play again.

Game features:

Randomly generated terrain through clever use of random seeding. The world is endless. We don’t store the map in memory, but when you leave and come back, it’s randomly generated the exact same way. A vector is kept for all apples collected. When you return to an area where you’ve already collected the apple, it won’t spawn the apple there again. This check for the apple is O(n) each time a sector is generated.

The drawing is optimized for 60 frames per second with some effort to remove the flashing in the console. Instead of using cout and system(“clear”), we made use of the internal buffer and copying the memory to the console internals each frame.

We made 2d arrays using one dimensional arrays. In order to access the desired coordinate, we used the formula of row \* width + column.

Class subjects included:

* Smart Pointers
* Containers
* Inheritance
* Multithreading

C++ 11 features:

* class definition variable initialization
* use of auto
* loop style: for (auto thing : things) { … }
* chrono for high precision timing