Lazy Foo' Productions

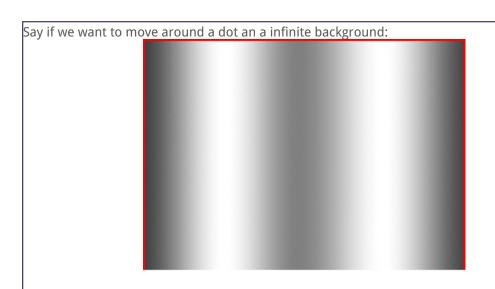News   FAQs   Games   Contact   Donations

Scrolling Backgrounds

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Often times in games you may want a infinite or looping background. With scrolling backgrounds, you can cycle a background that goes on forever.

Say if we want to move around a dot an a infinite background:

All we have to do is render two iterations of the background next to each other and move them a little every frame. When the background have moved completely over, you can reset the motion:

```cpp
//The dot that will move around on the screen
class Dot
{
    public:
        //The dimensions of the dot
        static const int DOT_WIDTH = 20;
        static const int DOT_HEIGHT = 20;

        //Maximum axis velocity of the dot
        static const int DOT_VEL = 10;

        //Initializes the variables
        Dot();

        //Takes key presses and adjusts the dot's velocity
        void handleEvent( SDL_Event& e );

        //Moves the dot
        void move();

        //Shows the dot on the screen
        void render();

    private:
        //The X and Y offsets of the dot
        int mPosX, mPosY;

        //The velocity of the dot
        int mVelX, mVelY;
};
```

For this tutorial we'll be using a plain version of the dot that just stays on screen.

```cpp
        //The dot that will be moving around on the screen
        Dot dot;

        //The background scrolling offset
        int scrollingOffset = 0;
```

Before we enter the main loop we declare a Dot object and the scrolling offset.

```cpp
        //Move the dot
```

```
            dot.move();

            //Scroll background
            --scrollingOffset;
            if( scrollingOffset < -gBGTexture.getWidth() )
            {
                scrollingOffset = 0;
            }
```

Here we're updating the dot and updating the scrolling background.

Updating the position of the scrolling background is just decrementing the x position and if the x position is less than the width of the background that means the background has gone completely off screen and the position needs to be reset.

```
            //Clear screen
            SDL_SetRenderDrawColor( gRenderer, 0xFF, 0xFF, 0xFF, 0xFF );
            SDL_RenderClear( gRenderer );

            //Render background
            gBGTexture.render( scrollingOffset, 0 );
            gBGTexture.render( scrollingOffset + gBGTexture.getWidth(), 0 );

            //Render objects
            dot.render();

            //Update screen
            SDL_RenderPresent( gRenderer );
```

Here we're rendering the background and the dot. First we render the scrolling background by rendering two iterations of the texture next to each other and then we render the dot over it. This will give us the effect of a smooth scrolling infinite background.

Download the media and source code for this tutorial [here](#).

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