Coding Physics

Physics is all about vectors, integrals, and functions:

$$\hat{r} = (x, y, z)$$

$$\int_a^b \{...\} dx$$

$$F(\hat{r}) = sin(|r|)$$

Computer code is all about variables, loops, and functions:

```
vec3 r = vec3(x,y,z);
```

```
for (int i = a; i <= b; i++) { ... }
```

```
float F (vec3 r) { return sin(length(r)); }
```

A wave source can be modeled as a sine wave:

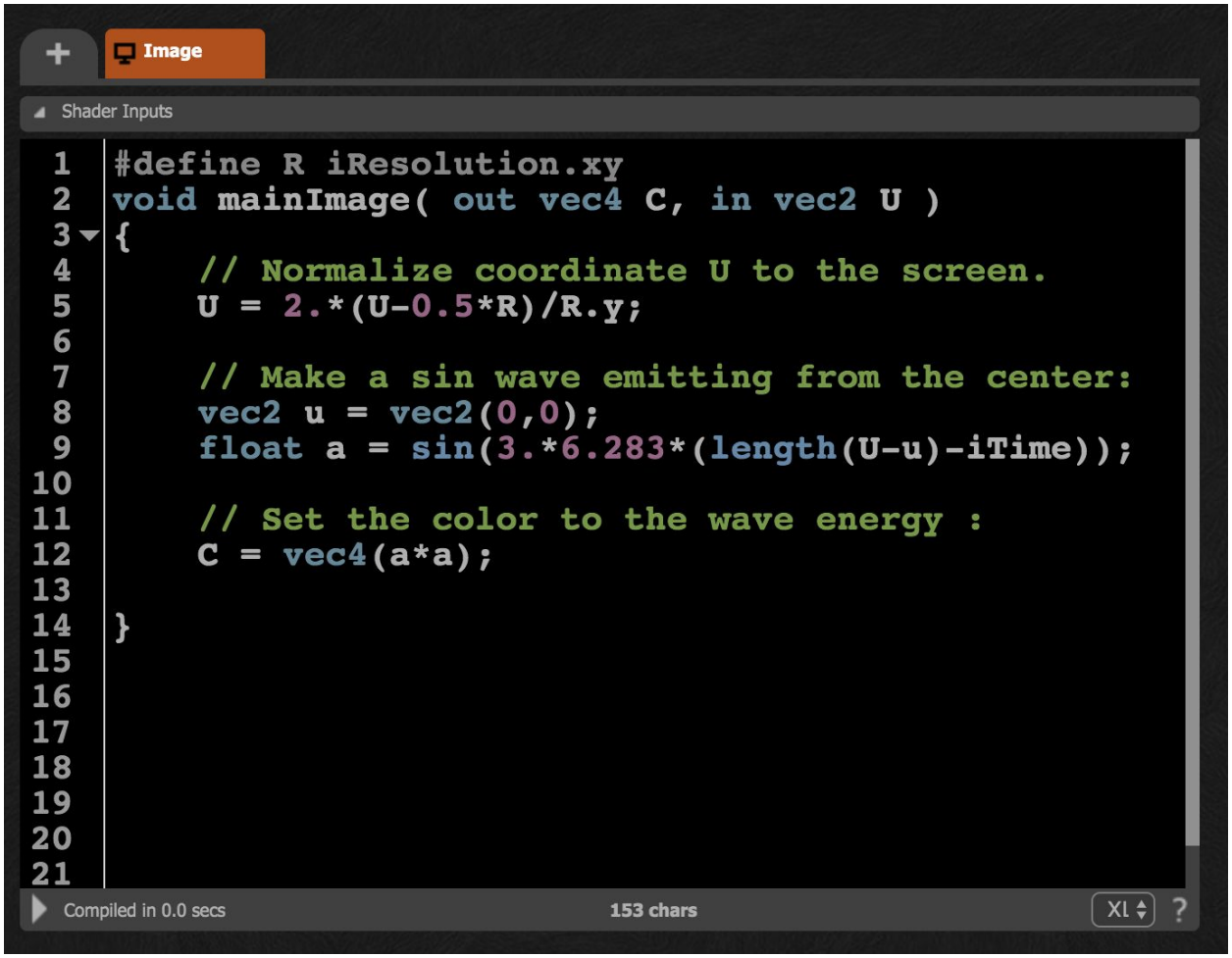
$$a = sin(2\pi (|r| - t))$$

This is how one could code a visualization of a wave:

***C** is the color output*

U is the coordinate input

R is defined as the resolution of the screen



Use all the information provided to **integrate** a vertical line of sources using a **for loop** to sum radial sine waves. This will model a wave front passing through a single slit.

(Make sure that the space between sources is sufficiently small.)