DSP Lab Exercise 6

Major Code Changes

1. **Changed stream to stereo**

```
stream = p.open(format=pyaudio.paInt16,
        channels=2,      # changed from 1
        rate=Fs,
        output=True)
```

2. **Apply different filter parameters for L & R channels**

```
# Left channel
f_left = 440.0
omega_L = 2 * pi * f_left / Fs
a1_left = -2 * r * cos(omega_L)
a2_left = r**2

# Right channel
f_right = 660.0
omega_R = 2 * pi * f_right / Fs
a1_right = -2 * r * cos(omega_R)
a2_right = r**2
```

3. **Pack both channel together**

```
frame = struct.pack('hh', left_sample, right_sample)
stream.write(frame)
```

Outcome

With headphones, the L and R ears hear distinct tones.