

Q1. Outline your project and which extensions you are building on to the template. (400 words)

A1.

I have chosen to extend the Music Visualisation template. p5.sound is a comprehensive library which I can build upon, and the end product can produce aesthetically-pleasing visual effects that are commonly seen on stage performance.

I plan to improve (1) the ridge plot extension, and (2) the spectrum extension, design and implement new extensions that (3) create a ripple effect, and (4) create an effect that produce a “sky” of shapes of different pitches based on the sound.

- (1) The ridge plot extension can have many attributes being customisable. For example, the speed of the ridges moving to the end, the size and colour of the ridges, the direction of ridges etc. Also, the ridges can have different shapes such as curves. These settings can be controllable by the user using sliders to enhance the visual effects.

In order to create the sliders and storing their values, a setting object with sliders being the methods of changing its attributes can be constructed. It is expected to encounter challenges such as mapping the settings to the correct ridges, or if the settings would cover produced ridges.

- (2) Currently the spectrum extension is a simple histogram that the data are listed from top to bottom. It can be bent to a circular shape with a circle in the middle. Challenges may include accurately position the rect() functions onto the circumference of the middle circle.
- (3) A new extension that a ripple visual effect can be produced from the sound. Through an array of ellipse objects, it can be done by overlapping the ellipse and controlling their sizes using frameCount, from the p5.sound library. Challenges can be designing a beautiful visual for different sound, while maintaining a diversity.
- (4) A “sky” of shapes is created by identifying amplitudes of certain pitches, and producing predefined shapes according to the sound, like stars rising from the ground. Such shapes will move towards the top of the screen from the “ground”, the bottom of the screen. Colours, sizes and kinds of shape will depend on different attributes of the sound. Object orientation would be the key and the challenge to handle the shapes.

(A1 Word Count: 356)

Q2. Discuss the progress you have made on your project so far. (400 words)

A2.

I have referred to different websites and YouTube videos that have music visualisers. For example, <http://musicvid.org> has a free visualisation builder and some example of visuals built. I obtained my inspiration from there for the new extensions. When I was building the colour ripple effect, I used different functions from the p5.sound library to find a good metric to produce the effect through trial and error.

I have almost completed the colour ripple effect. Next task would be to create the (4) effects and then (1) and (2). Thus I would avoid spending too much time into improving the given extensions. I would need to further fine-tune the effects as well, trying different tracks to see if the effects would be diversified enough.

(A2 Word Count: 127)

Q3. Discuss how you will organise your time for the rest of the project. (200 words)

Gantt Chart

	Research	New Extension 1	New Extension 2	Improvement 1	Improvement2
Week 8	Review lectures Search for inspiration				
Week 9	Determine general idea of the project	Design, implement			
Week 10		Implement, Adjust			
Week 11		Fine Tune, debug			
Week 12 Interim Submission			Design, implement		
Week 13			Implement, Adjust		
Week 14			Fine Tune, debug		
Week 15				Design, implement	
Week 16				Implement, Adjust	
Week 17				Fine Tune, debug	
Week 18					Design, implement
Week 19					Implement, Adjust
Week 20					Fine Tune, debug
Week 21	Review and Submission				

A3

I would anticipate and allocate 3 week's time for each of the extensions planned. As I expect there would be roadblocks and changes of plan in the middle of the implementation, for example the design being too hard to implement, or in need for searching of solutions for a difficult part of the codes, for each of the extensions, I would prepare for a short design phase (0.5/3), an implementation phase (1.5/3), adjust and debug phase (1/3) of the time.

(A3 Word Count: 83)

Q4. List any external sources that you have actively utilised in your project.

- p5.js libraries and documentations:
 - p5.js including p5.js DOM; p5.sound; <https://p5js.org/reference/>
 - <https://processing.org/tutorials/p3d/>
- In search of inspirations:
 - <http://musicvid.org>
 - <https://www.youtube.com/watch?v=NVb5GV6IntU>
- Exploration of 3D geometries
 - <https://github.com/processing/p5.js/wiki/Getting-started-with-WebGL-in-p5>