Mid-term answers sheet

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Question 1

I am a computer science student with the university of London Goldsmith. I am currently on the Machine Learning and Artificial Intelligence pathway (this may change). The university has started me 2 week later than all the other students because of payment issue, so unfortunately I am already on the back foot from the start. That and my time and programming knowledge is limited.

For introduction to programming 2 (ITP2) module we are using javascript as the programming language focusing in the p5.js library. I think this is a good choice as it is visual in its execution, this way you can see the results of your program and gain a quicker and better understanding on what you are programming.

ITP2 is a steep learning curve from ITP1. It introduces object oriented programming (oop) and new p5.js libraries like p5.dom and p5.sound. It also has a practical focused approach to its learning with the introductions of 3 case studies to choose from. The idea is that we get a 2 week introduction to each case study and then. choose one case study to focus on for the remainder of the 21 weeks of learning. the case studies are all oop focused with a few methods (classes) already done for you and then having to create at list 2 to 4 more complex methods (classes) of your own.

The case studies to choose from are:

Drawing application

This application uses the p5.dom library as an extension and also has a bit to learn in HTML and CSS.

What I like about the drawing app

- Learning another 2 languages (HTML and CSS).
- It familia having used MS draw.

What I do not like about drawing app

- I am not a good at drawing so I feel like I am limited in how I can improve on this app.
- though I can use the opportunity to learn HTML and CSS, I feel I can do this on one of the other apps as well.
- The creativity on this app is aimed at how user interact with the app.

Music Visualiser

This application uses the sound library in p5.js.

What I like about the drawing app

- It is visually appeling
- I love music and I am excited thinking of the music I can use with this app
- I can be creative in both making the music and creating a visual image of that music.
- If that I will enjoy working on this case study and I have many ideas I can implement.

What I do not like about drawing app

- All of the visualisation I would like to create seem very complex and I and not sure I will be able to implement them all.
- out off the 3 case studies, this is the one I find the most challenging.

Data Visualiser

This app is has no new library but uses the table object.

What I like about the drawing app

- I work with data in my everyday work life so this is familiar.
- I have done some code work with python making this familiar again.

- I find data simple to work with

What I do not like about drawing app

- I work on data and data vis all day every day.
- It not easy to be creative and make something unique with data.
- Having done the per-graded part of the vis app I don find it interesting.

In the end I have chosen the music visualiser as it is the one case study that gets me excited to work with. I would like to work on something I find fun to do even though it is challenging. I like the challenge and the opportunity to lear the more complex aspects of the case study. The ideas I have are unique and if executed well could create beautiful visual art.

I would like to try and use the DOM library for the app interface. The mic for sound interaction with the user.

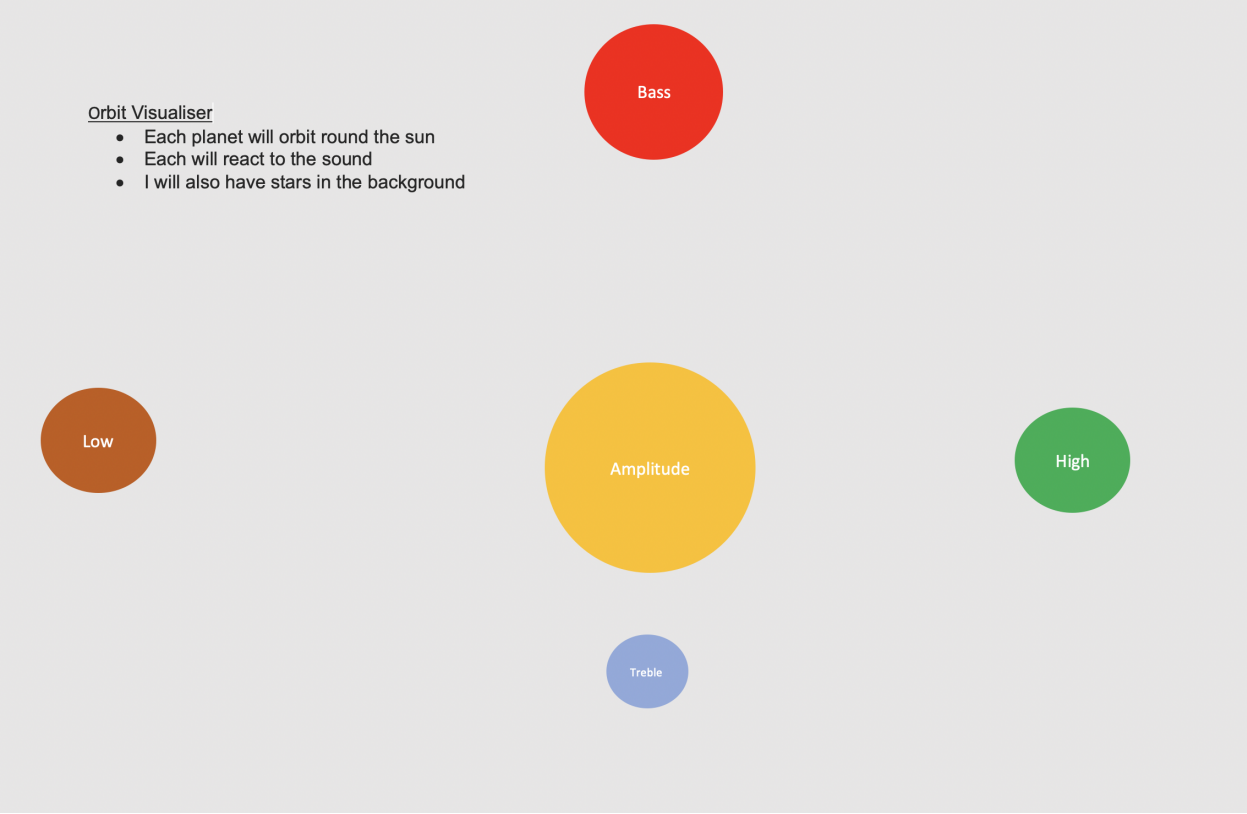
Question 2

As I have pointed out above I started my study later than the other students and with the Christmas holiday unfortunately I am not as far a I wish to be. I have made the choice of the music visualiser (MV). I want this to show case my artistic side and at the same time be interactive. I have not yet written any code for the case study but I intend to start as soon as I have complete my research. Currently I am trying to discover how I am going to build the classes and objects for the visualisers. On youtube the coding train has a series on p5.js sound library and working with audio. I am using this as my main source of insertion.

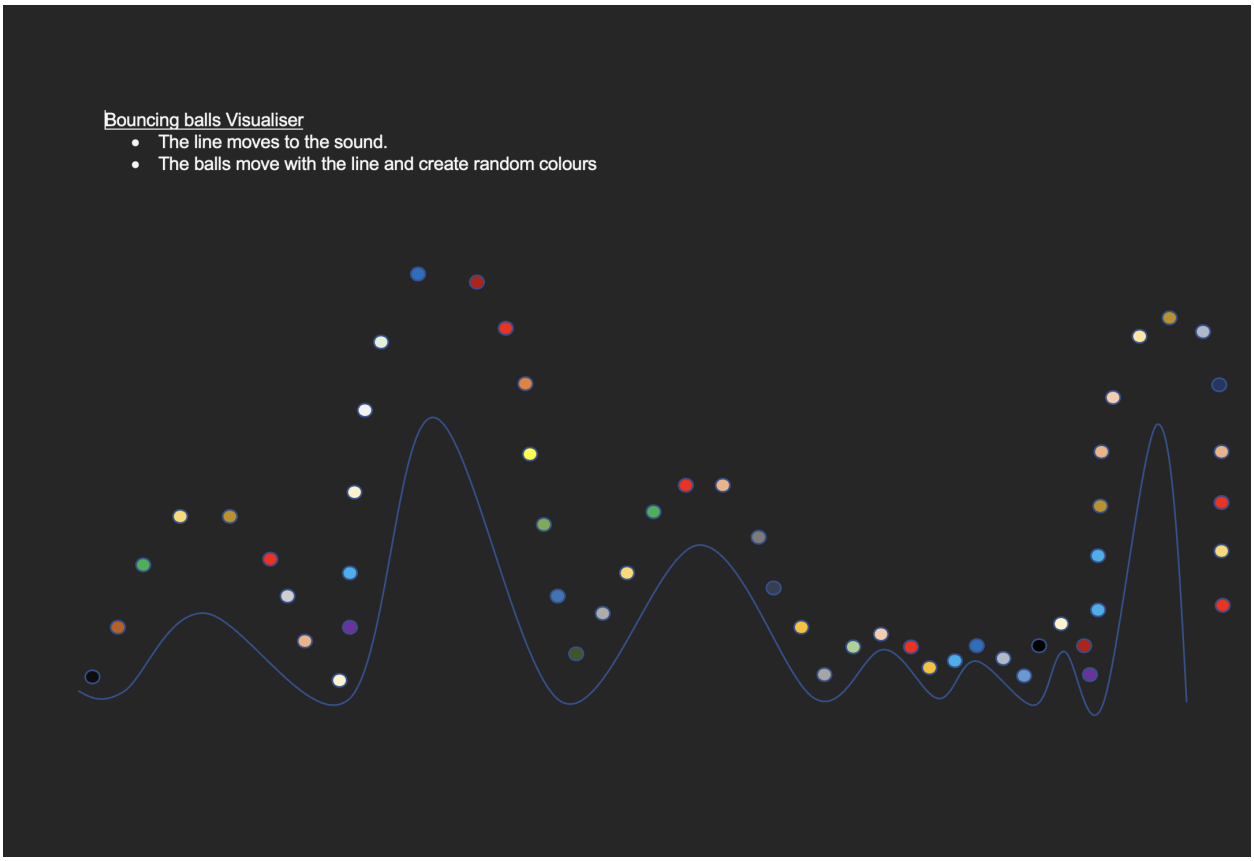
I also intend to use Github as a repository it will help me keep track of the progress of my project and be able to look back on the code as it develops. I have enrolled onto the Github global campus, this global campus provides a resources, guides and learning material for student. I can also get some help and assistance from student around the world if I come across a challenge I can not overcome.

1. The orbit visualiser - This will consist of 5 ellipses, One in the centre and for rotating (orbiting) round it. They will each react to the bass, amp, high, low, treble and will be

different colours. I would like the to be a moving start system as the back ground. The complexity of this will be in the rotation and speed of rotation. I will have to create an array for the start system if it is to be a moving system. I think I will have to use some mathematical approach to create the correct orbit.

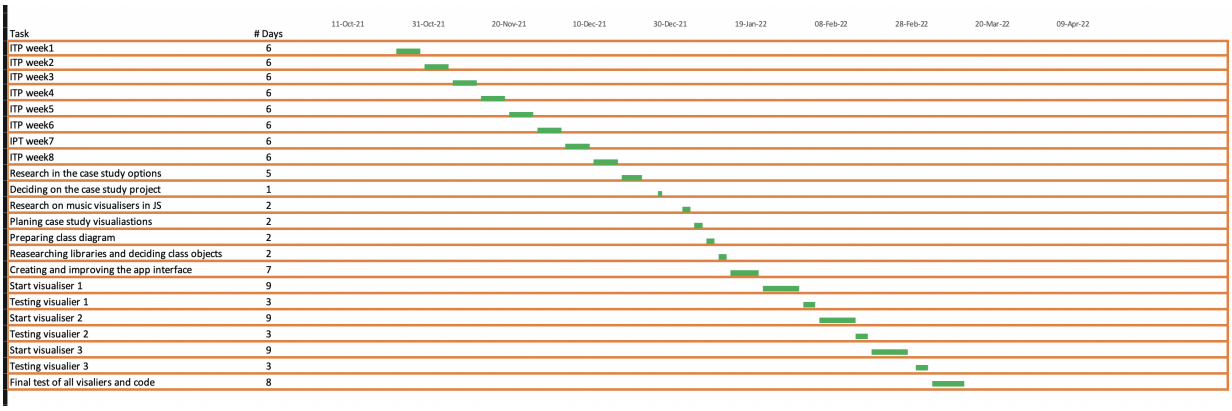


2. The bouncing ball visualiser - This will be a line with small balls on top of it. As the sound plays the line will react to the sound at the same time throwing the balls up and they will come down slower than the line. Any time the are pushed up by the line they will change colour. There will be an array for the line to react to the sound but I think I will have to create a function for how the balls will rise fall and change colour to the sound and line.



3. The interactive visualiser - As the user clicks on the screen a random shape will appear that will react to the sound. When the user has all the 4 shapes on the screen the shapes will start to interact with each other. Each shape will rotate and move independent of each other. I would also like the user to be able to use the computer mic and the visualisers to react the the sound from the mic.

Question 3



Task	# Days
ITP week1	6
ITP week2	6
ITP week3	6
ITP week4	6
ITP week5	6
ITP week6	6
IPT week7	6
ITP week8	6
Research in the case study options	5
Deciding on the case study project	1
Research on music visualisers in JS	2
Planing case study visualiastions	2
Preparing class diagram	2
Reasearching libraries and deciding class objects	2
Creating and improving the app interface	7
Start visualiser 1	9
Testing visualier 1	3
Start visualiser 2	9
Testing visualier 2	3
Start visualiser 3	9
Testing visualier 3	3
Final test of all visaliers and code	8

Gantt chart

As I started late than the other students and am therefore behind, time management is going to be critical. I have a family and work full time so the time I have will be in the evenings. As show by the Gantt chart above a lot of my time have been spent on the decision making process as well as the research process. The research will help with class object and how to implement the code necessary for the case studies as they will be the most complex code I would have ever used.

The most important time as shown on the Gantt chart will be the 9 days each of coding the visualisers as well as the 3 days of testing for each visualiser. I have also incorporated 8 days at the end for final touches as we as a buffer in case I over run. I created the Gantt chart using MS excel and it can be adjusted to change the days as well as reflect when I have gone over on any part of the project.

On top of the gantt chart I will be using Nortion to create a to do list. As I am going through this case study I am going to be learning a lot of new programming languages as well as packages like Git and Github as part of my research process. I will need to keep track of all the new thing i learn as I will be doing them all simultaneously.

Each ITP week at the start of my study has been given 6 days. This is so that I can go in depth on how much I want to do the case study and how I can benefit from it. I don’t want to choose a case study that doesn’t interest me or I will find it difficult to learn, I also don’t want to choose a case study that doesn’t allow me to progress and develop my skill. So the 6 days is enough time to do the lecture as well as research the case study.

9 days to code each visualiser may seem a lot but as I am still at the start of my learning I believe my coding speed will be slow and I would like to be able to have time to

research each visualiser as I code it. 3 days testing will allow me to make improvement to the code so that it is up to good standard.

Question 4

I intend to use github to help with keeping track of all the changes I make to my code as well as hep with resetting the code if I find the need to. I will be following some lectures from the code train on youtube as he goes into more on the p5.js sound library.

I find that I am not as good at getting code from stack overflow so I don’t think I will be using it much. Another useful resource is slack as the student have been very helpful when other others have been unable to understand something.