Introduction to Programming II
Project Log №1

Project title:	The player with music visualization function
Topic:	Fixing previous and adding new player features

What progress have you made this topic?

After the midterm, I thought about changing architecture to handle several p5 sound files. But after few days of research and testing, I rejected this idea. A lot of player features utilize the callback functions and juggling several sound files with a lot of callback seemed like a bad idea. So, to better handle loadings, I added a buffer state that disables buttons functionality while there is loading in the process. After that, I decided to add several new buttons: the “full screen” button that stretches /shrinks the visualization window, and two buttons that show/hide playlist and visualization window. I also worked out some HTML changes and added a style file to make the player more visually appealing.

What problems have you faced and were you able to solve them?

As I already mentioned, I added buffering state to better handle problems with buttons' functionality. Also, I spent some time with the “full screen” button – there was some tricky part when the user resized the window while in full-screen mode. I was able to recalculate the new window size to return if resize occurs while in FS state. Show / Hide buttons were not this hard to implement, and polishing HTML and CSS was just time-consuming, but not this hard.

What are you planning to do over the next few weeks?

In the next few weeks, I would like to add few new features to the player – like an interactable timeline and maybe something like a small display, that shows song name and other metadata.

Are you on target to successfully complete your project? If you aren’t on target, how will you address the issue?

I think I am still on track. In the next few weeks, I plan to complete the player itself, and after that, all that left is adding more visualization options and testing/bug-fixing.

Introduction to Programming II
Project Log №2

Project title:	The player with music visualization function
Topic:	Timeline and display window

What progress have you made this topic?

At the end of the 16th week, I was able to complete the interactive timeline feature based on the DOM input element. This line will show the song's progress: move while a song is playing, pause and resume on pause/play and reset when a song is stopped. Besides showing progress, this line allows the user to jump to any position of the song on click.
The second feature is the small “display” window that shows the song name, format, and timestamp. It also shows the loading process, and updates when the player is playing.

What problems have you faced and were you able to solve them?

Both these features require a constant update of the visual information, and there would be no problem to make them using canvas because the draw function is called each frame. But because I decided to make the whole player using simple JS and HTML I had to use asynchronous functions. I used the “setInterval” function to get required information each time tick and update target elements, and the “clearInterval” function to stop callback from reoccurring. Updating information on timeline and display was relatively easy, but clickable timeline interaction gave me trouble. The biggest obstacle that I faced was the fact, that when a song is paused, the “currentTime” function returns 0 for some reason. Because of the solution, it can look a little bit clumsy, but it was my best shot.

What are you planning to do over the next few weeks?

In the next few weeks, I plan to spend time adding more visualizations. I am bad with creative stuff and artistically impaired, so I think I will do few suggested extensions, tweak some of them here and there, and at the end will add 2-3 visualizations of my own.

Are you on target to successfully complete your project? If you aren’t on target, how will you address the issue?

Doing good so far, I think that the next part should no be this hard, so I hope to finish on time. Fingers crossed…

Introduction to Programming II
Project Log №3

Project title:	The player with music visualization function
Topic:	Adding music visualizations to the player

What progress have you made this topic?

I tweaked some of the initial three visualizations to make them a little more sophisticated. I also added another three suggested visualizations with minor changes. And in the end, I have added three visualizations of my own.

What problems have you faced and were you able to solve them?

The only visualization that created me some problems was the last one. Visualizations before weren't this hard and mostly required some tweaking to create a more appealing image. So for the last one, I had a few spare days to experiment, so I decided to make something more interesting. One of my initial ambitions was to create something akin to the rhythm game, and I decided to create something akin to the "Audiosurf". I stuck with the image of 3D movement in my head and found an interesting tutorial about "2.5D" visuals. I play a lot of "old school" racing games and decided to make something similar. But this whole proved to be a lot harder for someone like me, who had no prior graphical experience. Things like perspective, skewing, the relation between vectors – I spent a lot of time trying to wrap my head around them. In the end, I understood that I wasted a lot of time just researching theory and will not finish the implementation of this game on time. So I just used the simple concept of pseudo 3d for the visualization and decided to try to work on this idea in the future.

What are you planning to do over the next few weeks?

In the last 2 weeks, I plan to test and fix some bugs, that I will be able to find. Also, I need to refactor, clean, and comment on my code, to make it more readable and understandable by others.

Are you on target to successfully complete your project? If you aren't on target, how will you address the issue?

I fixed most of the bugs right away, without waiting for the bug-fixing stage, so I hope that there are not many bugs left. So, if there is no sudden incident, I hope I will complete everything as planned.

Introduction to Programming II
Project Log №4

Project title:	The player with music visualization function
Topic:	Testing, bug-fixing, refactoring, and tidying up the code

What progress have you made this topic?

I send this player to 5 of my friends to test its behavior on different computers, to identify some bugs that I missed, and test the program as a whole.

What problems have you faced and were you able to solve them?

My friends were very helpful and helped me to identify few bugs: if a user was to set volume, then delete all songs from the playlist and then add something again, then the player returned the volume level to the default value. Another bug was occurring when the player completed the whole playlist, ended the cycle. After that, if a user was to enable “shuffle” or “loop playlist” modes and start song not by play button but by click on the timeline, then in the end the player switched song right way (random for “shuffle”, and the first one for “loop”) but not played them. I fixed both these bugs and tweaked some parts of the user visual interface that my “testers” complained about. Also, when the user adds songs, turns the repeat mode on, then delete all songs and add new ones and start a new cycle by clicking on the timestamp that this song is not repeated. The problem was that the timeline click listener jumped to the time stamp but ignored settings.

What are you planning to do over the next few weeks?

I hope to write the report, compile all logs into one file, test one last time and submit my project.

Are you on target to successfully complete your project? If you aren’t on target, how will you address the issue?

It’s hard to evaluate my own work, so I hope that the final submission will be enough to get a good mark. Anyway, I learned a lot and touched even more topics that I still need to learn. So, even without knowing marks, I can say that at least for me this course was a success.