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Introduction to Web Programming

How the application works

The application is a simple music maker written in HTML, CSS and JavaScript. The JavaScript file is commented but here is briefly explained how the application works.

The UI consists of buttons for play, stop and add track. There are also 6 different instruments and a silent track which can be used.

In the beginning of the application, a for loop calls for addTrack() function to create four tracks. Additional tracks can be added by clicking the “Add Track” button.

The application has 4 arrays which are used to store the audio samples, tracks, default volumes for the tracks and a “currently playing” array.

The code is commented but here are the main functions in the application and their usage:

addTrack() function is responsible for created the div element which contain the track number, volume label and volume slider. It also contains Event Listeners for audio volume and drag-and-drop of samples to the track.

Draggable buttons are created using forEach for each sample. This part of the code also has Event Listeners for dragging the buttons (1 for Desktop and 3 for Mobile devices).

addSampleMobile() function handles the dropping of the samples to a track on mobile devices. addSample() does the same when using a Desktop device.

playSong() calls stopSong() first to stop the current playback and then loops through all the tracks using playTrack() function.

stopSong() uses forEach to pause all the currently playing tracks and resets the playingAudios array.
playTrack() function is used to play each track. All samples are looped through.

What tools were used to create the application

The application was written with Visual Studio Code with addons about web development. Most of the application is written by using the example code from the repositories of the course as a guide. The drag-and-drop event listeners where studied from sources:
https://medium.com/@deepakkadarivel/drag-and-drop-dnd-for-mobile-browsers-fc9bcd1ad3c5
https://codepen.io/deepakkadarivel/pen/LrGEdL
https://developer.mozilla.org/en-US/docs/Web/API/HTMLElement/drag_event
https://www.cssscript.com/mobile-friendly-drag-drop/

I was still having some issues with drag-and-drop (especially with mobile devices) and ChatGPT was used for getting ideas of how to get it to work properly. ChatGPT was also used for proofreading, but it mostly suggested ways of writing the code in a shorter manner which I decided not to do.

Points for the application

I believe the points I should get are from the following features:

Feature	**Points**
Well written PDF report	3
Application is responsive and can be used on both desktop and mobile environment	4
Application works on Firefox, Safari, Edge and Chrome	3
The application has clear directory structure, and everything is organized well	2
Own feature: Imported font	1
Drag'n'drop new instruments to the tracks (with mouse or touch screen)	4
Adjustable volume per track	2
Instrument's length is visualized in the track	4
Users can add as many tracks as they see fit	1

This would equal 24 – 2,4 (-10% for late submission) = 21,6 points