COMP3322B Modern Technologies on World Wide Web

Assignment Three

Total 8 points

Deadline: Nov 25, 2021 23:59

Overview

You are going to develop an image slider in JavaScript using HTML Canvas element. The image slider will display series of images in cycle, with transition effect and mouse control. You can find examples of drawing images on HTML canvas in the lecture notes on HTML5.

Objectives

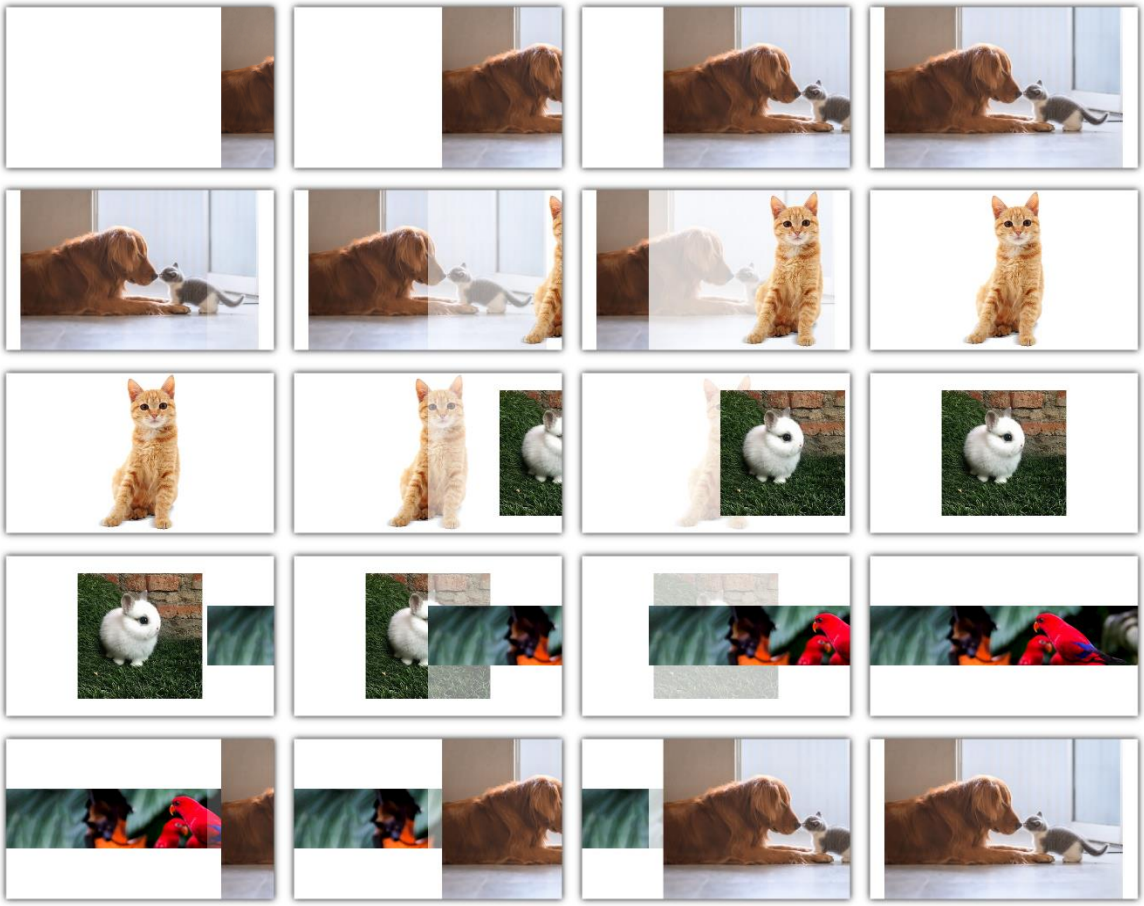
1. A learning activity to support ILO 1 and ILO 2.
2. To practice how to manipulate image data, as well as handling mouse events on a HTML canvas.

Requirements

- ***You are not allowed to use any external library (except jQuery) for this assignment.***
- A template is provided with the necessary interface for this assignment. There is a single canvas of size 640x380 in the UI act as the image slider. This UI must not be changed.

- When `index.html` is opened in a browser, the image slider should start showing images on the canvas one by one in cycle. Each image should be shown for about 3-5 seconds before the next one replaces the current.
- The images to be shown in the image slider is controlled by `imageList.js`, which is imported in `index.html` **before** the main JavaScript file `wwwa3.js`. `imageList.js` assigns a list of file names to constant `images`. These filenames refer to the image files in the `images` folder. You **should not modify** `imageList.js` in any way except to change the images in the list when you test your work. We will use our own `imageList.js` to test your work.
- When an image is shown in the canvas, it should be scaled automatically if the image does not fit the canvas.

- There should be a slide-in transition effect of about 3s that slides the image into the canvas from the right. This effect applies also to the very first image to be shown in the canvas.



Transition of the 4 given images

- Image must be fully loaded before the transition effect takes place.
- During the transition, the previous image must be kept in the background.
- A white frame with the size of the canvas should be used as the background of the image in the transition effect. This frame should transit from fully transparent to fully opaque during the transition based on the transition progress. As you can see from the screenshots above, the white frame will cover the previous image in the background during the transition.
  Note: You can draw the white frame using `fillStyle` using RGBA color and `fillRect` of canvas context.
- When the mouse is moved over the canvas, it should pause the image slider. The current image should stay in the canvas until the user move the mouse away (or click on the canvas, see the next point). If the mouse is moved over the canvas during transition, the transition will continue as normal, and then the slider should be paused after that.
- If there is a mouse click on the canvas when there is no transition in effect, the image slider immediately loads the next image (with transition effect).

Resources

You are provided with the following files.

- `index.html`, `style.css` – the base document with UI, you may update these files but there should not be any change in the UI.
- `imageList.js` – A JavaScript file that setup the images to be shown in the image slider.
- `images/*` - Some images files for testing
- `wwwa3.js` – please implement your code here.

Testing platform

We shall test your Web interface using Google Chrome.

Submission

Please finish this assignment before Nov 25 Thursday 23:59. Submit only `wwwa3.js` on Moodle. You should also submit `index.html` and `style.css` if you have made any changes to them. You should not submit `imageList.js` as well as the `images` in the images folder, these files will be ignored if submitted.

Grading Policy

Points	Criteria
2.5	Correctly implement the basic image slider. ▪ Show images one by one (1.0) ▪ Show images in cycle. (0.5) ▪ Resize images correctly. (1.0)
3.0	Correctly implement the transition effects. ▪ Slide-in effect applied to the first image. (0.4) ▪ Slide-in effect applied to all following images. (0.8) ▪ Previous image stays in the background. (0.5) ▪ Previous image covered by the next image after transition. (0.3) ▪ White frame added for the image in transition. (0.7) ▪ White frame transit from transparent to opaque during transition. (0.3)
2.5	Correctly implement the mouse control. ▪ Pause image slider on mouse over. (0.6) ▪ Resume image slider on mouse out. (0.6) ▪ Handle mouse click on canvas correctly. (0.8) ▪ Correctly pause/resume image slider after mouse click. (0.5)
-1.0	Not keeping the provided UI in the template.
-1.0	Image is not fully loaded when the transition starts.
-2.0	Poor resource management (e.g., repeated setTimeout / setInterval), causing slow response of UI
-4.0	Using any external libraries (except jQuery).

Plagiarism

Plagiarism is a very serious academic offence. Students should understand what constitutes plagiarism, the consequences of committing an offence of plagiarism, and how to avoid it. ***Please note that we may request you to explain to us how your program is functioning as well as we may also make use of software tools to detect software plagiarism.***