Conversion of Virtual Labs Experiments from Flash to Javascript

AIM

To Convert 2 labs - Physical-Chemistry & Colloid-Surface-Chemistry, from Flash To JavaScript

INTRODUCTION

The most interactive multimedia on the Web, Flash offers the webmaster a single platform to create content that will be seen by the majority of Web site users. However, there are some arguments against Flash. Hence creating similar experiences in JavaScript, we can avoid many of the problems inherent in Flash. Another advantage of JavaScript is that the code to make an animation flutter across the entire screen is no bigger than one that flutters across a small section of the screen.

METHODS

1. Get the SWF files of the flash experiment which needs to be converted to JavaScript from GitHub.

2. Using JPEXS free flash decompiler extract all the components of the experiment.

3. Identify and combine require components to form all these images using any editor.

4. Position all images in their appropriate positions in HTML5 using CSS and JS.

5. Define functions for each of the apparatus which redirect to other functions according to the need of the experiment.

6. After every step performed change the instruction which will explain what has to be done next.

7. Use different functionalities of libraries for performing animation.

RESULTS

1. Successfully Converted 12 experiments from flash to JavaScript.
2. An average of 3 days for conversion of each experiment.
3. On an average, it takes 300+ lines of JS and 400+ lines of CSS for an experiment.

CONCLUSIONS

1. Inspite of Flash being a popular interactive media platform for building web pages, it needs to be converted to JavaScript in order to make it Free and open-source.

2. Currently the tools available for conversion are not sophisticated enough to convert more complex animations involved in the experiments. Hence for time being conversion using pure JavaScript and HTML5 is the best option though it is not the efficient method.

Software Engg Research Center

Interns: 1. Kalpit Pokra 2. Mahee Surya
Mentors: 1. Lalit Mohan 2. Sravanthi Bhattlapenumarthi 3. Sravanthi Modepu