Assignment 1 (HF, major subject)

Due: Mon 26.10.2015; 12:00h (1 Week)

Goals

After doing these exercises you will be able to…

- work with the canvas element
- handle events with JavaScript

Task 1: Shapes on Canvas

Create an HTML file that shows a canvas. Programmatically draw the following shapes:

- Star (simple path)
- Diamond (simple path)
- Heart (Bezier curves / arches)
- Question mark (Bezier curves / arches + rectangle)

Put your solution in the folder 'task1'.

Task 2: Drawing in the web browser

In this assignment you are asked to create a small drawing application that runs inside an HTML5 compatible browser. The app should behave somewhat similar to MS Paint.

Create a web page using HTML5, CSS and JavaScript. Please do not use 3rd party frameworks or libraries.
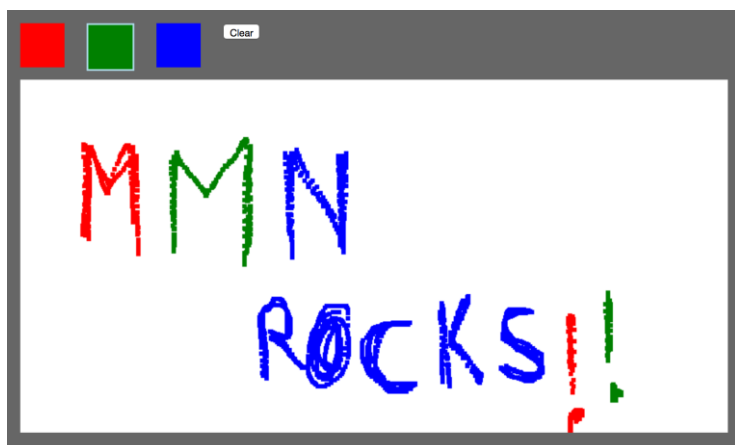
Make sure to consider the requirements on page 2.

- *Canvas*: The user can draw on a fixed size canvas (e.g. 800px*600px).
- *Colors*: Allow the user to pick among at least 3 different colors. For usability reasons, make sure that the currently chosen color is clearly marked.
- *Clear Canvas*: The user should be able to clear what's on the canvas and start over without refreshing the page.
- *Drawing*: It is enough to track the mouse cursor (`canvas.onmousemove`) and draw small rectangles at the current position. The drawing should start once the mouse is clicked.
- Test your application in different web browsers. Make sure to add helpful comments.
- *Bonus Ideas (not required):*
  - Custom colors – enable the user to enter an HTML color code (e.g. #000000 for black) to choose the pen color.
  - Pen size – let the user choose the size of the pen.
  - Undo – allow the user to undo drawing (advanced)
  - Save image – let the user save the image as JPG or PNG file.

Task 3: Propose a task for the future or for the exam

Take into consideration what this week's lecture and tutorials are about and propose a task for this assignment sheet in future runs of this course. We want to diversify the tasks and are eager to find out what you come up with.

Also, if you want to, you can propose a task for the final exam. We reserve the right to actually use it. You are welcome to do this with every assignment this year.

Submission

Please turn in your solution via UniWorX. You can form groups of up to three people.

If you have questions or comments before the submission, please do not hesitate to contact one of the tutors. You can find their email addresses on UniWorX. Remember, that they also want to enjoy their weekends ☺

Also, feel free to ask questions by tweeting to https://twitter.com/MMN_WS1516. We try to react in a timely manner. That way, all the followers benefit from your questions.

Let's collaborate on GitHub!

As we do not provide sample solutions, we encourage you to collaborate with all your peers on a sample solution for this assignment on GitHub.

We created a public repository for this purpose:
https://github.com/MIMUC-MMN/assignments-ws-15-16

Please follow the instructions and code of conduct provided in the README. The staff will also collaborate, but we put the course participants in charge of the solutions.

This is a pilot experiment and we hope it turns out well ☺