



Outline. Schedule & Conditions

April 2010

Generally speaking, what we'll be doing in this block seminar (really: lab workshop), is to study the algorithmic and generative approach to graphic design on an introductory level. This is a very abstract formulation, the ceiling or top level only of something much more concrete. In fact, during our sessions, we will be mainly concerned with practical issues of programming using the Processing system. The immediate goal is that you become familiar with the language and system of Processing. You develop skills, a basic understanding, and a certain versatility. You should start to enjoy thinking algorithmically, and writing program code.

In focussing on the particular language of Processing, you will gain insight into programming of digital media in general. The course will constitute a practical approach to design aspects of visual digital media. We will cover a some parts of the book

Processing. A programming handbook for visual designers and artists, by Casey Reas and Ben Fry, the two designers of the system. (The book was published by MIT Press, 2007.)

As a participant, you will be asked to work on a series of introductory design exercises building up stepwise from almost trivial to more involved designs. Each of the meetings concentrates on one important aspect of programming. These will be: basic concepts of data structures and control structures; advanced data structures and control structures; interactive programs.

The inventors of Processing, the designers Casey Reas and Ben Fry, call pieces of code, „sketches“. They want that programming should develop into a skill considered to be analogous to what is known as sketching with pencil and paper in visual design. Processing is their suggestion to go this direction. When you sketch, you use your previous results to come up with better, more advanced, more complex designs. Sketching helps you first to develop basic, but then more and more advanced techniques until you reach a point where you switch to more difficult materials and tools.

Parallel to our simple design work, we will inject systematic studies of algorithmic thinking. We do so by identifying components and structures of algorithmic descriptions. For this goal, we will often follow the Reas & Fry book. Other sources will be introduced into the course as well. In closing, we may make an attempt to pull together the practical design and technical programming experience in a theoretical perspective on digital media. But emphasis will always be on the practice of algorithmic design work.

It was decided that you do not get credit for this course as it is not really a design course although offered at HfK. Nevertheless, I will ask you to work a substantial project and present its results at the closing meeting. If you want to gain credit for a programming design, you should do an independent study. The no-credit work of this course could become the starting point for the definition of such a study. It would, of course, require much more work. In case you are interested, we will organize this.

Schedule

The following schedule lists the dates, times, and topics of our meetings. The actual depth and breadth of treating topics and subtopics will largely depend on you, the participants themselves. Insofar, this schedule is only a first indication of possibilities.

Date	Topic	Remark
16 April 2010 16 to 18	We jointly generate an overview of the experience and expectations of those who want to participate. Aims, conditions, and organization of the workshop. – First example. General structure of „sketch“.	
22 & 23 May 2010 11 to 18	Basic structures of programs: data & control flow. Variables, constants. Data types. Coordinates. Arithmetic. Declarative and operational statements. Assignment, condition, iteration. State machine. Basic drawing functions. Advanced structures of programs. Simple animation. Structuring programs. Functions, parameters. Array. Saving images.	Randomness. Geometric transformations, matrices, stack. Lots of examples, individual work
5 & 6 June 2010 11 to 18	Interactive programs. Input. Recursion. Interactive devices: mouse, keyboard. Event handling. File import & export. – Definition of individual projects.	Object-orientation.
26 June 2010 11 to 18	Presentations of individual projects. – Definition of projects for independent study if wanted. Looking back and wrapping up, conclusion. Critique.	

It is important that we clearly define individual course projects on 6 June. If you want to earn credit points (in form of an independent study), those projects must be worked out during the three weeks between 6 and 26 June, when you must present first results.

Please, be on time! Since the building must be closed on weekends, we must organize getting in and out.