“What is Flash?” At first, said it was hard to sum that up in just a few words. Then I thought for a moment and replied that Flash was a "powerful animating and programming tool..."
Flash Workshop
(block1)

- Workshop block1 Outline

In this workshop we’ll discuss and practice the following topics:

- Introduction to the Flash-based technology, new directions and usage, software & language
- Flash Player, optimizing and Publishing
- Demonstrations, exercises & discussions (pt1)
  - Flash as a design-tool, movie-clips, timeline-animations, imports, publishing etc
- Coffee Break
- Demonstrations, exercises & discussions (pt2)
  - Flash as a design-tool, movie-clips, timeline-animations, imports, publishing etc
- A quick look at the new Flash CS5
- Questions & Discussions
Flash today...

(Techniques, directions & usage overview)

- Sound Visualization
- Concept Design
- Web applications
  (Multimedia presentations)
- Game Development
- Motion Tracking
- Animated banners, logos & graphs
- Game Development
- Wii - Remote
- Streaming Systems
  (Flash video)
- Goggle apps
- Digital Art
- Augmented Reality
- Sensors (Phidgets)
- Flash 3D
  (Realtime rendering)
- Navigation-systems
- Storytelling
- Augmented Reality
- Interactive videos
- Windows applications
- Android apps
- Mobile Systems
- iPhone Applications
- Complex Animations
  (AS3)
- Projection
- GestureWorks
- Single & Multi-touch
  (Interfaces)
- Navigation-systems
- Timeline animations
- Physics and inverse kinematics
- Sound Visualization
- Concept Design
- (Basic interactivity)
- AIR
  (Desktop applications)
- Prototype Development
- Virtual worlds
- Interaction interfaces
- Mobile Systems
- SION sound apps
- Database applications
  (with: XML, php, asp, .NET)
Why learn Flash & programming?
(as an Interaction Designer)

- Flash is the leading tool/technique for creating multimedia, applications, presentations, games on Internet – a powerful platform for developing systems, prototypes, desktop applications and mobile applications

Examples of general usage for a designer:

- Presentations / online portfolio
- Video applications for design-projects
- Concept design (with basic interactivity/navigation)
- Interaction interfaces
- Prototype development (usability tests)
- Working in project-teams (communicate with/understand programmers)
- Physical computing: Sensors (Phidgets), Webcam, Wii-remote, Multi-touch etc.
- and more....
Program versions

- **Flash CS3** (March 27, 2007)
  - Brand New Interface, New and Improved Flash Video Importer
  - Improved Skinning of Components, Exporting Motions and Animations, Import Photoshop Files

- **Flash CS4** (October 15, 2008)
  - Object-based animation, Bones tool (Inverse kinematics), 3D transformation, Motion editor, Motion presets, Metadata (XMP) support, Authoring for Adobe AIR, XFL support, Adobe Kuler panel, H.264 support

- **Flash CS5** (April, 2010)
  - iPhone support, Code Snippets, Improved Text-framework & Motion Editor, Developed integration: InDesign and PSP
ActionScript versions

- ActionScript 2.0 (Flash 7 MX 2004)
  - Object-oriented, classes, objects, inheritance, components etc

- ActionScript 3.0 (2006)
  - Faster, cleaner, more powerful, easier to debug, more feature rich, strict and secure
  - Object-oriented structure: Built by classes, libraries, objects, functions, and properties
  - Expands the Flash-based technology
Flash workspace

1. Menu
2. Tool panel
3. ActionScript panel
4. Timeline (main)
5. Properties/parameters/output
6. Main toolbar
7. Align/Info/Transform
8. Color/swatches
9. Components
10. Library
11. Main stage
12. Document Properties
13. Frames/tween
14. Object on stage

Export movie: Ctrl + Enter
Colors and Workspace layout can be saved!
ActionScript Panel

1. Packages/Script Library
2. Script/Symbol(s)/quick navigation
3. Topmenu
4. Code/Composing section
5. Script Assist
6. Right menu
7. Find and Replace
8. Help menu
File-types & formats

Create a New Project File
(ActionScript 3)

Create a New ActionScript Class File
(ActionScript 3)

**FLA**: The Project/work File (export will generate the .swf file)

**SWF**: The exported program file (embedded in HTML)

**AS**: ActionScript Class File (Built-in or user defined class files)

**FLV**: Flash Video File
Dimensions and *frame-rate* of the movie can be set in the *Document Properties* panel

- Framerate (fps) Frames per second (30 fps movie: 30 times a second)
- Recommendation 25-31 fps (12 fps is often too slow for tween animations, resulting in "jerky" motion)
- SWFs published to the same fps, will in general run slower on the Mac Flash Player

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*Most of today's computer processors cannot keep up with a frame-rate higher than 31 fps*
Naming elements

- It’s recommended to have an intuitive *naming structure* for your elements (movie-clips, buttons, frames, layers, components etc)
  - Use unique names
  - Keep names as short as possible while retaining clarity
  - Start with a lowercase letter
  - Use mixed case for concatenated words
  - Don't use the same element name with different cases

✓ *Tip!* Practical to organize every project the same way
MovieClips (1/2)

- MovieClips are the key-element for Flash-based animations
- Every movie-clip has it’s own timeline
- Movie-clips can be nested (movie-clip inside another mc)
- A movieClip can be used as a button-object
- Each MovieClip has a coordinate system in which the origin (0, 0) is located in the registration point. For the main timeline this is the top left corner

✓ Tip! Use the suffix _mc for movieClips, ex. ball_mc
MovieClips (2/2)

- Every created *MovieClip-instance* has the properties and methods of the *MovieClip class* - these properties and methods can be accessed and manipulated by code.

- A Movie-clip has also *Display Properties* that we can access and manipulate (manually or by code).

```
apple_mc

xPos = 200
yPos = 200

height = 300

alpha = 0.9

color = red
```
The *Properties Panel* allows us to adjust most objects in Flash. It is context sensitive, displaying options for whatever object is currently selected.

Properties Panel for a selected text

Properties Panel for a selected movieClip
Layers & Layer Masks

- Separate ActionScript layer and separate layers for each *element group* (intuitive naming)
- Layers can be locked
- Folders can be used for arranging the layers
- Layers can be used for *Layer Masks* (for masking of an area)
Frames & navigation

- Frame-names (intuitive naming)
- Frames can be used for navigation/systems
- AS methods for jumping between Frames ex. on a Button-press: gotoAndStop(“main”)
Library & stage-elements

- Folders with *intuitive naming* in library (large projects)
- Same *naming structure* for objects on stage can be used

*arrow_btn* on Main Stage
There are basically three different *text-field* types in Flash:

- **Static Text**: Animations, common use, standard fonts
- **Input Text**: Input-text, forms, passwords, variables
- **Dynamic Text**: Dynamic text, HTML-text, selectable/copy text, outputs, non-standard fonts (embed fonts), scrolling text, loading data by using:
  - Textfile
  - XML
  - Database (PHP, ASP)
In Flash CS4/CS5 the old/standard Motion Tween is re-named to: *Classic Motion Tween* – which can be used for animating/tweening a movieClip in various ways.

Example of Motion Tweens: Position, size/scale, color, alpha
Motion tween (CS4/CS5)
(Timeline-animations)

- The new Flash CS4/CS5 Motion Tween is object-based and can be controlled by the Motion Editor.
- These tweens can also be saved to the Motion Presets-panel.

Tip! See also the upcoming slides about the Motion Editor and Motion Presets.
A Shape Tween can be used for morphing a shape into another within a time-frame.

Flash cannot shape tween groups, symbols, text blocks, or bitmap images. If you want to apply Shape Tweening to any of these objects, you must first break them down by clicking: MODIFY ➔ BREAK APART.
A Motion Guide can be used for animating a movieClip along a predefined path

First, create a Guide Layer, draw your path – then make a Motion tween and snap your clip to the guide
Motion Presets

- The Flash CS4/CS5, *Motion Presets* is a panel with pre-defined animations.
- These animation/tweens can be applied to your movieClip.
- It’s also possible to add your own animations to the *Motion Presets* list (Custom Presets).
With the Flash CS4/CS5 Motion Editor, you can manipulate your Motion tweens by editing *Motion curves*, and/or adjusting specific parameters (without touching your timeline-tween).

For example parameters like: Basic motion, transformation, color effects, filters, eases.
Bone Tool
(Inverse Kinematics)

- The Flash CS4/CS5, *Inverse kinematics* (IK) is a way to animate parts of a whole object.
- This can be done by using the *Bone Tool* from the *Tools-panel*.
Flash Player 10
(Accessibility of flash-based content)

- Adobe Flash Player, is a free software application (browser plug-in) which allows the playing of standalone Adobe Flash (SWF) content
- The Flash Player API is the set of classes, objects, functions, and properties that come built into Flash Player

- Web-browsers: Internet Explorer, Mozilla Firefox, Opera, and Safari - on selected platforms
- Available for Windows, Linux, Solaris, Mac OS X and various Mobile operating systems (Not iPhone today!)
- Latest version: Adobe Flash Player 10 (version 10.0.45.2)
Optimizing
(Loading media & Simulate download)

- We don’t want any large files in library, for example: Sound, image and/or video-files
- By loading *Assets/Media/data* into the application we can reduce the file-size and optimize the system
- When the application is exported we can *Simulate Downloading*
- It’s possible to set up different Download speeds for the tests
Publishing
(Formats, Flash & HTML)

- In the *Publish Settings*-dialogue, it’s possible to select Flash Player version for the export or other publishing formats (ex. AIR, iPhone, Flash Lite), ActionScript version etc.

- We can also select HTML-parameters for the embedded Flash-movie (swf-file)
Information & help

- **Flash Documentation:** *ActionScript Language Reference*

- **Adobe Flash Player**

  - Flash *Help file:* Local on computer (if installed)
  - Flash/ActionScript Websites & Forums
  - Download and study exemples
  - Blogs
  - Internet (googling)
Links & Resources

- ActionScript Language Reference

- Flashkit.com - movies, tutorials, forum etc
  http://www.flashkit.com/

- Actionscript.org - movies, tutorials, forum etc
  http://www.actionscript.org/

- Kirupa.com - movies, tutorials, forum etc
  http://www.kirupa.com/

- Flash Security Document

- Flash testing and usability
  http://www.adobe.com/devnet/flash/testing_usability.html

- Accessibility
  http://www.adobe.com/accessibility/products/flash/