



POLYTECHNIQUE
MONTRÉAL

LE GÉNIE
EN PREMIÈRE CLASSE

Université 
de Montréal

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 POLYTECH[®]
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INTEGRATING A JAVASCRIPT ENGINE INTO A LIGHT WEB BROWSER

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Summary

- I. Polytechnique Montréal
- II. Mission
- III. Tools
- IV. Setting up the environment
- V. `getElementsByClassName`

Polytechnique Montréal

- Ptidej team
- Pavillon Lassonde
- Computer Engineering



Mission

- JavaScript engine (Duktape)
- Dylan Levy (NetSurf → AmigaOS)
- Script
- Browser crash, whole OS crash

Tools : AmigaOS, Amiga Forever & NetSurf

- Operating systems
- Official AmigaOS emulator : Amiga Forever
- Free and open source browser
- Embeddable JavaScript engine

Integrating a javascript engine into a light web browser



Tools : NetScript and Cygwin

- Automate the NetSurf compilation process
- 3 files and 1 folder :
 - NS.sh : commands to download and compile all the files, tools and libraries
 - NeScript.sh : used to execute NetScript, calls NS.sh, created a log file
 - updateFiles.sh : in charge of modifying all the files needed to compile NetSurf
 - The updateFile folder : contains data
- Shell emulator for Windows



Setting up the environment

- Key for Amiga Forever
- Dylan Levy's GitHub
- Compilation without Duktape
- SnoopDos
- Update on AmigaForever

Screenshot of SnoopDos 3.8 showing a log of file operations. The window title is "SnoopDos 3.8 © Eddy Carroll, May 2003. Hotkey=<ctrl alt d>". The log shows multiple "OpenFont" actions for "AFA Amikit font" and various file operations like "OpenLib", "*Lock", "*Open", and "*Open" for files like "mpega.library", "PROODIR.Resources/icons/hotlist-add.png", and "ENV.Datatypes/skPNG_prefs".

Process Name	Action	Target Name	Options	Res.
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
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[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	OpenFont	AFA Amikit font	Size 13	OK
[S] NetSurf	*Lock	PROODIR.Resources/icons/hotlist-add.png		Read OK
[S] NetSurf	*Open	mpega.library	Ver 0	OK
[S] NetSurf	*Open	NetScript-master:NetSurf_3.6dev_WithDuktape_AmigaOS3/NetSurf/Resou	Read	OK
[S] NetSurf	*Open	NetScript-master:NetSurf_3.6dev_WithDuktape_AmigaOS3/NetSurf/Resou	Read	OK
[S] NetSurf	OpenLib	datatypes/skPNG.datatype	Ver 0	OK
[S] NetSurf	*Open	PROODIR.Resources/icons/hotlist-add.png	Read	OK
[S] NetSurf	*Open	PROODIR.Resources/icons/hotlist-add.png	Read	OK
[S] NetSurf	*Open	classes/datatypes/picture/Precision	Any	Fail
[S] NetSurf	*Lock	ENV.	Read	OK
[S] NetSurf	*Open	classes/datatypes/picture/Precision	Read	Fail
[S] NetSurf	*Open	ENV.Datatypes/skPNG_prefs_Tasks/Background CLI	Read	Fail
[S] NetSurf	*Open	ENV.Datatypes/skPNG_prefs_Tasks/Background CLI	Read	Fail
[S] NetSurf	*Open	ENV.Datatypes/skPNG_prefs	Read	OK

getElementsByTagName integration

- Methods already implements
- Two similar methods :
 - Document.getElementsByTagName
 - Document.getElementsByClassName
- Verbose mode
- Setting up a testing Website
- Not make it local

getElementsByTagName integration

- Testing getElementsByTagName
- Html page with a « p » element
- CSS page with the class « blue »
- `document.getElementsByTagName("p").item(0).className = "blue";`

getElementsByTagName integration

- “_dom_document_get_nodelist”
- Low memory impact (main goal of NetSurf)
- Adding a « class » property
- New way of searching : BY_CLASS_NAME
- `document.getElementsByTagName("a b")`

getElementsByTagName integration

- Cache to keep the CSS classes in memory
- The unimplemented methods
- UnimplementedJavascript.txt → 1793

Thank you for your attention !