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School of Science
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Kimmo Puputti

!Fixme Add English title Fixme!

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Master's Thesis
Espoo, !Fixme **Add English date** Fixme!

DRAFT! — Monday 9th January, 2012 — DRAFT!

Supervisor: Professor Petri Vuorimaa, Aalto University
Instructor: Risto Sarvas D.Sc.(Tech.)

Aalto University
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ABSTRACT OF
MASTER'S THESIS

Author:	Kimmo Puputti		
Title:	!Fixme **Add English title** Fixme! !Fixme **Add English subtitle** Fixme!		
Date:	!Fixme **Add English date** Fixme!	**Pages:**	18
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Instructor:	Risto Sarvas D.Sc.(Tech.)		
!Fixme **Add English abstract** Fixme!			
Keywords:	!Fixme **Add English keywords** Fixme!		
Language:	English		

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Tietotekniikan tutkinto-ohjelma

DIPLOMITYÖN
TIIVISTELMÄ

Tekijä:	Kimmo Puputti		
Työn nimi: !Fixme **Add Finnish title** Fixme! !Fixme **Add Finnish subtitle** Fixme!			
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!Fixme **Add Finnish abstract** Fixme!			
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Acknowledgements

!Fixme **Add acknowledgements** Fixme!
Thank you.

!Fixme **Decide city...** Fixme!, !Fixme **Add English date** Fixme!

Kimmo Puputti

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0.1 Thesis Git repository info

Build time: **Monday 9th January, 2012 13:56**

Git HEAD:

```
commit 1fe89c22f9128dcbe112d16395d7954879ae69b9
Author: Kimmo Puputti <kpuputti@gmail.com>
Date:   Mon Jan 9 13:24:38 2012 +0200

    Add jsoncache screenshot and abbr command.
```

Repository status:

```
# On branch master
# Your branch is ahead of 'origin/master' by 1 commit.
#
# Changes not staged for commit:
#   (use "git add <file>..." to update what will be committed)
#   (use "git checkout -- <file>..." to discard changes in working directory)
#
# modified:   methods.tex
# modified:   thesis.pdf
# modified:   thesis.tex
#
no changes added to commit (use "git add" and/or "git commit -a")
```

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3.2 JSONCache JavaScript Library

JSONCache is a lightweight JavaScript library for fetching JSON (!Fixme **abbreviation definition** Fixme!) data in flaky networks. The library was designed especially to handle flaky mobile networks with connection problems and short interruptions. The goal is to avoid networking as long as possible and failing gracefully if network connections are not stable.

JSONCache provides two main functionalities: data caching and attempting to fetch the data multiple times.

The caching layer uses the client side localStorage (!Fixme **citation needed** Fixme!) cache of HTML5 (!Fixme **abbreviation definition** Fixme!). Data requests can be done using the JSONCache API (!Fixme **abbreviation definition** Fixme!) which always checks the local cache first before opening any network connections. If the data is already in the cache, the cached data is checked for validity and if the data has not been expired, it is returned immediately. If the data is not in the cache or it has been expired, a new network request is made and the received data is cached and returned to the requestor. The expiration time of a data item can be configured in the library settings.

JSONCache also tries to fetch the data multiple times to handle small interruptions in network connection. !Fixme **add example and explain**

that it is very common FIXME!. If a data fetch fails, a new fetch is issued after a timeout (defined in the configuration). On subsequent attempts the timeout is increased, and after a defined number of attempts the fetch error is issued to the requestor.

Figure 3.1 shows an interactive demo of the JSONCache library. The demo[1] simulates the caching and fetching functionality of the library by simulating a flaky network according to the configuration.

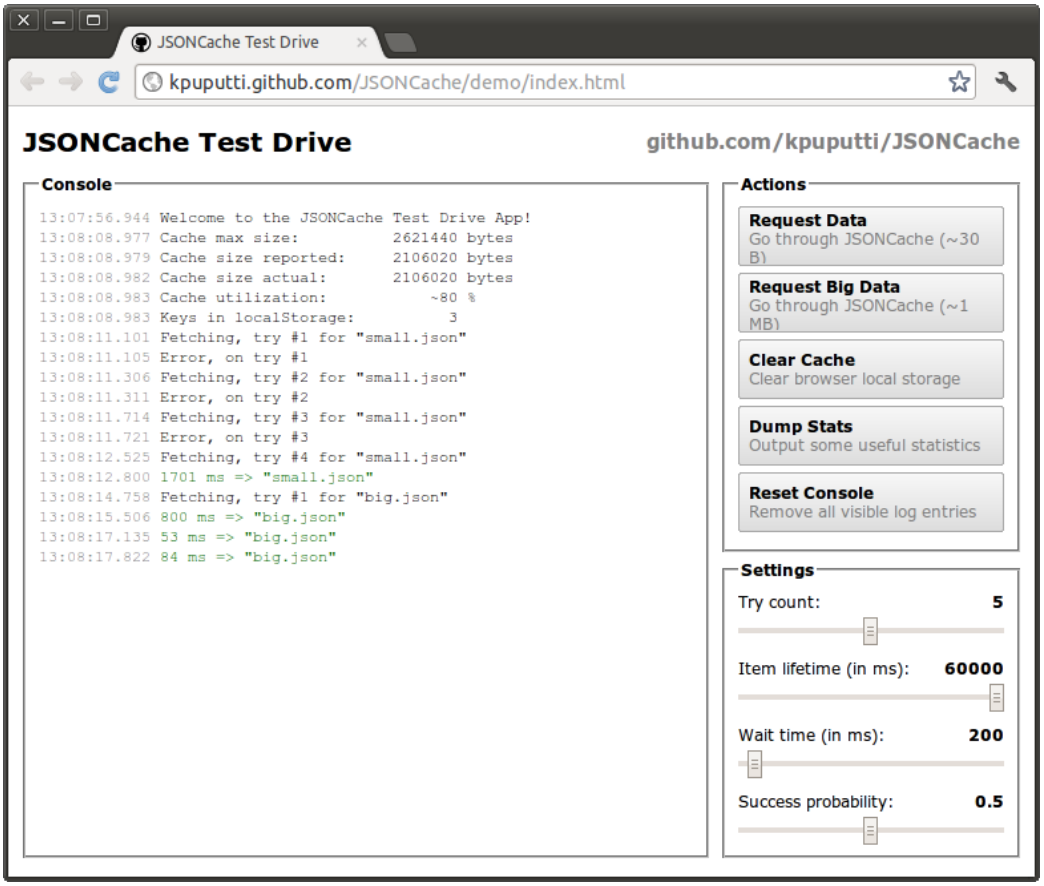

Figure 3.1: Interactive JSONCache demo.

[1] `http://kpuputti.github.com/JSONCache/demo/index.html`

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6.1 Citing

- Berners-Lee [1]
- Mikkonen & Taivalsaari [4]
- Taivalsaari & Mikkonen [7]
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- Crockford [2]
- Souders [6]
- Garrett [3]
- Zakas [8]

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