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Opening up access to online documents using essentiality tracks

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Opening up Access to Online Documents using Essentiality Tracks

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22nd May 2006



Current Problems

Essentiality and Proficiency

DocBook XML

Essentiality Tracks

Application in the “Real World”

Future Work

Summary

References

Current Problems

- ▶ Information Exclusion

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- ▶ Standards Compliance \neq Usability [Mohamad et al., 2004]

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- ▶ Information Overload [Hiltz and Turoff, 1985, Berghel, 1997]

On the other hand...

The DRC2004 [Disability Rights Commission, 2004] provides us with motivation to use accessibility as a benchmark for site usability – 35% of sites are easier for **everyone** to use if they are made accessible!

Introducing Essentiality and Proficiency

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- ▶ Designed for uses such as:
 - ▶ Mobile 'phone and PDA users.
 - ▶ Accessibility improvements.
- ▶ Useful for when space or time is at a premium.
- ▶ Essentiality filtering and personalised rendering is carried out as a proxy service.

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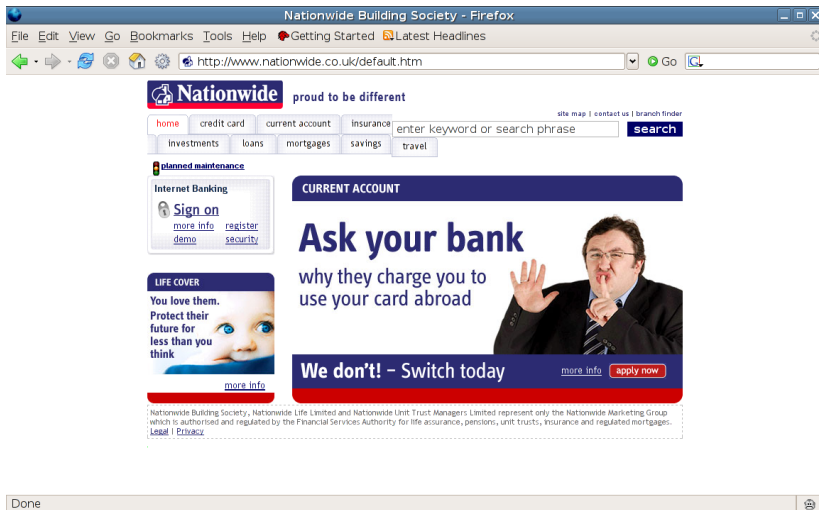
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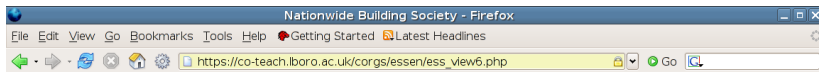
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- ▶ A page contains information of varying relevance to the reader.
- ▶ This is marked up by the author against a certain scale.
- ▶ The page can then be displayed at the desired level of essentiality.
 - ▶ All items with an equal or more important essentiality rating are then displayed.
- ▶ Rendering subject to “Proficiency” of the user or device.
- ▶ User profiles stored centrally.

Example: User's Point of View – Before



Example: User's Point of View – After



- [home](#)
- [banking](#)
- [credit card](#)
- [insurance](#)
- [investments & pensions](#)
 - [loans](#)
 - [mortgages](#)
 - [savings](#)

[[View https://co-teach.lboro.ac.uk/corgs/essen/nationwide/default.html](#) without filter] [[Essentiality filter Home](#)] [Essentiality level: [1](#) / [2](#) / [3](#) / [4](#) / [5](#) / [-6-](#) / [7](#) / [8](#) / [9](#) / [10](#)]

Done

co-teach.lboro.ac.uk


Example: Author Mark-Up

Applications Places Desktop Fri 21 Oct, 17:13

FrontPage - AGRIIP Wiki - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

Show Mark

**AGRIIP Wiki**skip navigation

[MatthewAtkinson](#) | [UserPreferences](#)

[FrontPage](#) [News](#) [About](#) [Download](#) [Develop](#) [Community & Support](#) [Contact](#) [Links](#)

[Edit](#) [Show Changes](#) [Get Info](#) [Subscribe](#)

FrontPage

Updates

2005/10/19: [Beta 4.1 has been released.](#)

Check out [RecentChanges](#) for more detailed update information.

Research

Are you interested in funding research that will change the way we deal with information and improve accessibility issues for the blind and vision-impaired? Please visit [my home page](#) for more information and become one of the first to benefit.

The AGRIIP Project

Welcome to the AGRIIP Project's Wiki. This site was created so that the community can learn about how to install, use and develop the software we produce.

Our aim is to provide access to the mainstream gaming community not by producing specialist "accessible games" but by making mainstream games - and their associated extension and development tools - accessible. We want blind people to not only play the games that sighted people do, but to be involved in the online communities that surround them and to extend them, creating new games and applications with them; something that sighted people have enjoyed a great deal over the years.

Over the past two years, we have developed an accessible version of Quake and QuakeWorld which allows both single and multi-player games, including the collection of online player statistics. In the future we will add immersive 3D audio

Done

[FrontPage - AGRIIP Wiki - Mozilla Firefox] FrontPage - AGRIIP Wiki - Mozilla Firefox

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- ▶ **Scalability**

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- ▶ A simple implementation of essentiality was added to DocBook XML.
- ▶ Proficiency taken care of by (XSLT) filter modifications.

The Problem of Context I

The Problem of Context I

```
<essn level="7">
  <para>Under no circumstances must any employee:</para>
</essn>
<essn level="5">
  <itemizedlist>
    <listitem>
      <para>
        Stay in the building after the alarm has
        sounded. <essn level="9">Leave the building
        immediately if there is a fire.</essn>
      </para>
    </listitem>
    . . .
  </itemizedlist>
</essn>
```

The Problem of Context II

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- ▶ Sample (X)HTML output from the above DocBook XML source,

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- ▶ Sample (X)HTML output from the above DocBook XML source,
- ▶ if user-specified essentiality level is between 6 and 9...

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<p>Under no circumstances must any employee:</p>
<ul>
  <li>Leave the building immediately if there
    is a fire.</li>
  . . .
</ul>
```

The Problem of Context II

- ▶ Sample (X)HTML output from the above DocBook XML source,
- ▶ if user-specified essentiality level is between 6 and 9...

```
<p>Under no circumstances must any employee:</p>
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    is a fire.</li>
  . . .
</ul>
```

- ▶ These problems can be avoided.

What are Essentiality Tracks?

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```
<essn track="manager" level="3">  
  <para>...</para>  
</essn>
```

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```
<essn track="manager" level="3">  
  <para>...</para>  
</essn>  
<essn track="developer" level="4">  
  <para>...</para>  
</essn>
```

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- ▶ Expected improved productivity¹

¹currently being tested

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¹currently being tested

Proposed Implementations

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▶ Interface

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- ▶ Interface
 - ▶ Web Form

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- ▶ Interface
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 - ▶ Client
- ▶ Delivery (and Proficiency)
 - ▶ (X)HTML
 - ▶ PDF
 - ▶ Plain Text

Example Web Form

Browser Menu and Toolbar							
Document Retrieval Form							
Your role	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>						
Essentiality							
Profile	<table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>						
Custom font							
Custom colours							

The Proxy Approach: Challenges

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Popular criticisms of proxy approach, including those cited by other related work [Hanson and Richards, 2004, Mohamad et al., 2004].

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- ▶ Transformations overridden
- ▶ Bandwidth
- ▶ Lots of “Undoing” work
- ▶ Tolerance of non-compliant sites
- ▶ Most web sites are not annotated to provide extra accessibility information

Inherent Solutions

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- ▶ Bandwidth or processing time (on the client) can be saved.
- ▶ No "undoing" work is necessary; only the transformations appropriate to the user are carried out.
- ▶ No tolerance of non-conformance is required
- ▶ No absolute need for annotation, but already established a business case for it.

Future Work

- ▶ Formal Testing

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- ▶ Extensions

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 - ▶ Error Checking

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- ▶ How they can be applied in other areas
- ▶ Scalability improvements with Essentiality Tracks
- ▶ Possible uses

Thanks for listening!
Any Questions?



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