

Applying the Skip Navigation Links in the Context of the Websites' Accessibility of Central Public Administration Bodies in the Trnava Region¹

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Abstract: *The study focuses in its main aim on seeking yet undetected or undefined deficits in relation to applying the skip navigation mechanism on the websites of the central public administration bodies in the Trnava Region in the context of improving the websites accessibility and it consists of two separate parts. The first part presents a basic introduction to the questions of skip navigation links, with the key attention paid to the following three main areas: applying of skip navigation links, visual hiding of skip navigation links, and web browsers' bug related to skip navigation links. The second part of the study concentrates on the basis of analysis of applying the skip navigation links on the websites of the central public administration bodies in the Trnava Region on the processes focused on detection of potential deficits and gaps in the websites' accessibility or related possible non-compliance with the legislation in force.*

Key Words: *Websites; Websites' Accessibility; Skip Navigation Links; Public Administration; Central Public Administration Bodies; Compliance with Legislation in Force; the Trnava Region; Analysis.*

Introduction

The on-line form of presentation and communication of the public administration authorities via Internet belongs not only to the most effective forms of communications – in relation to the territorial impact of the communicated information, but also to the most problematic – in the context of technical realization due to a number of specific standards required by handicapped web users with various forms of disabilities. In the following study the author focuses on the questions of applying the skip navigation links as key elements by building the websites.

¹ This study was created within the institutional project of the Faculty of Law of Trnava University in Trnava No. 10/2013 "Websites' Accessibility in Public Administration", in the Slovak original "Prístupnosť webových stránok vo verejnej správe".

While sighted web users use their eyes as a built-in skip navigation mechanism which enables them to bypass several links with only one click or to move directly to the link they want to reach with the mouse, for users with some forms of visual or motor disabilities means bypassing the navigation links or direct browsing the website a very serious technical problem. Importance and wide-social interest in solving this problem is reflected also in the adopted related legislation which is in the Slovak Republic represented by the latest Ministerial Decree of the Ministry of Finance of the Slovak Republic No. 55/2014 Coll. of Standards for Information Systems of Public Administration issued on March 4th, 2014, and effective from March 15th, 2014.²

The aim of the study is to analyze applying the skip navigation links on the websites of the central public administration bodies in the Trnava Region. In the context of the research questions we define the main hypothesis as follows: *Homepages of the central public administration bodies in the Trnava Region apply technically correctly the skip navigation links mechanism.*

Skip navigation links

The following part of the study familiarizes the readers with the main questions of applying of skip navigation links, visual hiding of skip navigation links, and web browsers' bug related to skip navigation links.

Applying of skip navigation links

The idea of applying the skip navigation links is simple: they serve to provide a link at the top of the webpage which jumps the user down to an anchor or target at the beginning of the main content. For the most part it seems to be easy, though there is more than one way to accomplish the goal. From the technical view the process of creating the skip navigation link could be explained through a HTML code as it is shown in the following example:³

² See *Výnos Ministerstva financií Slovenskej republiky č. 55/2014 Z.z. o štandardoch pre informačné systémy verejnej správy zo 4. marca 2014* [Ministerial Decree of the Ministry of Finance of the Slovak Republic No. 55/2014 Coll. of Standards for Information Systems of Public Administration issued on March 4th, 2014].

³ "Skip Navigation" Links. In: *WebAIM: Web Accessibility in Mind* [online]. 2013-10-25 [cit. 2015-03-01]. Available at: <http://webaim.org/techniques/skipnav/>; and KOPRLOVÁ, J. Applying the Skip Navigation Links in the Context of the Websites' Accessibility of Central State Administration Bodies in the Slovak Republic. *Societas et iurisprudencia* [online].

✚ HTML code:
<body>
Skip to Main Content
...
<main id="main-content">
<h1>Heading</h1>
<p>This is the first paragraph.</p>.

Visual hiding of skip navigation links

By building the website the most required form of applying the skip navigation mechanism is to make it invisible. For hiding the skip links there are several techniques to be applied. Two parallel conditions should be necessarily taken into account in this process: the first one means the requirement of visual hiding of the skip links content, and the second one represents the requirement of accessibility of the skip links content for screen readers. Nowadays, the best known and most often used CSS code “*visibility: hidden;/display: none;*” satisfies the only first one from the two above-mentioned conditions and so it cannot be recommended in relation to its non-visibility and inaccessibility for screen readers. An effective solution of this problem, satisfying the both conditions, offer the following HTML and CSS codes:⁴

✚ HTML code:
<div class="hidden">This text is hidden.</div>;
✚ CSS code:
.hidden {
 position: absolute;
 left: -10000px;
 top: auto;
 width: 1px;
 height: 1px;

2014, roč. 2, č. 2, pp. 134-135 [cit. 2015-03-01]. ISSN 1339-5467. Available at: <http://sei.iuridica.truni.sk/archive/2014/02/SOCIETAS-ET-IURISPRUDENTIA-2014-02.pdf>.

⁴ CSS in Action: Invisible Content [just for Screen Reader Users. In: *WebAIM: Web Accessibility in Mind* [online]. 2013-09-24 [cit. 2015-03-01]. Available at: <http://webaim.org/techniques/css/invisiblecontent/>; and KOPRLOVÁ, J. Applying the Skip Navigation Links in the Context of the Websites' Accessibility of Central State Administration Bodies in the Slovak Republic. *Societas et iurisprudencia* [online]. 2014, roč. 2, č. 2, p. 135 [cit. 2015-03-01]. ISSN 1339-5467. Available at: <http://sei.iuridica.truni.sk/archive/2014/02/SOCIETAS-ET-IURISPRUDENTIA-2014-02.pdf>.

```
overflow: hidden;  
}.
```

By generally recommended requirement to make the skip navigation links invisible until they receive keyboard focus, the following HTML and CSS codes should be applied:⁵

✚ HTML code:
`<div id="hidden">Skip to Main Content
</div>;`

✚ CSS code:
`#hidden a {
 position: absolute;
 left: -10000px;
 top: auto;
 width: 1px;
 height: 1px;
 overflow: hidden;
}
#hidden a:focus {
 position: static;
 width: auto;
 height: auto;
}.`

This means a very useful solution which could be preferred above all for sighted keyboard users those cannot use a mouse.

Web browsers' bug related to skip navigation links

The recommended above-mentioned skip navigation links related solutions are working effective in most web browsers, but nowadays there still exists one bug which lowers the efficiency of their applying through disrupting the logical order by browsing or reading the webpage links. This makes the webpage browsing with keyboard distortable or even non-effective. An appropriate solution for healing this bug offers the HTML code as follows:⁶

⁵ CSS in Action: Invisible Content Just for Screen Reader Users. In: *WebAIM: Web Accessibility in Mind* [online]. 2013-09-24 [cit. 2015-03-01]. Available at: <http://webaim.org/techniques/css/invisiblecontent/>.

⁶ Skip Navigation Links (Updated 6/19/2009). In: *JimThatcher.com* [online]. 2014-09-16 [cit. 2015-03-01]. Available at: <http://www.jimthatcher.com/skipnav.htm>; and KOPRLO-

✚ HTML code:
<body>
Skip to Main Content
...
<main id="main-content" tabindex="-1">
<h1>Heading</h1>
<p>This is the first paragraph.</p>.

Analysis of applying the skip navigation links on the websites of the central public administration bodies in the Trnava Region

Our analysis of applying the skip navigation links on the websites of the central public administration bodies in the Trnava Region has been legislatively based on the Ministerial Decree of the Ministry of Finance of the Slovak Republic No. 55/2014 Coll. of Standards for Information Systems of Public Administration issued on March 4th, 2014, and effective from March 15th, 2014, with the main attention laid on the § 14 Websites' Accessibility (in the Slovak original "§ 14 Prístupnosť webových stránok"), including related appendix Guideline 13. Providing Clear Navigation Mechanisms (in the Slovak original "Pravidlo 13. Poskytovanie prehľadného mechanizmu navigácie").⁷

Our analysis was realized in the early March 2015 by applying web browser Internet Explorer 11 (with style sheets and active elements turned off). Complete sample was represented by all websites of all the central public administration bodies in the Trnava Region, while research

VÁ, J. Applying the Skip Navigation Links in the Context of the Websites' Accessibility of Central State Administration Bodies in the Slovak Republic. *Societas et iurisprudentia* [online]. 2014, roč. 2, č. 2, pp. 136-137 [cit. 2015-03-01]. ISSN 1339-5467. Available at: <http://sei.iuridica.truni.sk/archive/2014/02/SOCIETAS-ET-IURISPRUDENTIA-2014-02.pdf>.

⁷ Compare with KOPRLA, M. and J. KOPRLOVÁ. Analýza prístupnosti webových stránok vybraných webových sídiel verejnej správy z pohľadu administratívno-správneho členenia Slovenskej republiky. *Societas et res publica* [online]. 2013, roč. 2, č. 1, pp. 93-160 [cit. 2015-03-01]. ISSN 1338-6530. Available at: <http://serp.fsv.ucm.sk/archive/2013/01/SOCIETAS-ET-RES-PUBLICA-2013-01.pdf>; and with KOPRLA, M. Prístupnosť webových stránok ako významný faktor zvyšovania konkurencieschopnosti. In: K. ĎURKOVÁ, A. BOBOVNICKÝ and A. ZAUŠKOVÁ, eds. *Inovácie a vedomostná spoločnosť/digitálny marketing - udržateľný rast a návrat investícií* [CD-ROM]. 1. vyd. Trnava: Univerzita sv. Cyrila a Metoda v Trnave, Fakulta masmediálnej komunikácie, 2012, pp. 49-63. ISBN 978-80-8105-454-9.

sample was defined by all homepages of all the central public administration bodies in the Trnava Region, namely of:⁸

- ✚ Central public administration body of Dunajská Streda (<http://www.dunstreda.sk/>);
- ✚ Central public administration body of Galanta (<http://www.galanta.sk/>);
- ✚ Central public administration body of Hlohovec (<http://www.hlohovec.sk/>);
- ✚ Central public administration body of Piešťany (<http://www.piestany.sk/>);
- ✚ Central public administration body of Senica (<http://www.senica.sk/>);
- ✚ Central public administration body of Skalica (<http://www.skalica.sk/>);
- ✚ Central public administration body of Trnava (<http://www.trnava.sk/>).

Central public administration body of Dunajská Streda

Next figure displays homepage of the central public administration body of Dunajská Streda, with style sheets and active elements turned off. There is no skip link applied.

Analyzing the homepage of the central public administration body of Dunajská Streda in context of using the skip navigation links following key findings could be detected:⁹

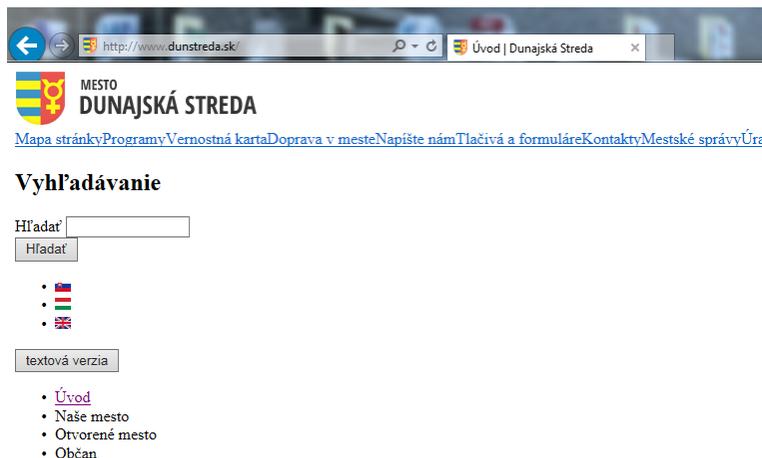
- ✚ Number of links before the main content: 157 links;
- ✚ Number of skip links: 0 links.

According to the presented results we can conclude that there is no skip navigation mechanism applied on the analyzed homepage of the central public administration body of Dunajská Streda. In relation to this finding we can recommend to add the skip navigation links in accordance with the model examples shown in the previous part of the study named “Skip navigation links”.

⁸ See Zákon č. 575/2001 Z.z. o organizácii činnosti vlády a organizácii ústrednej štátnej správy v platnom znení [Act No. 575/2001 Coll. on Organization of the Activities of the Government and Organization of the Central Public Administration, as amended].

⁹ Source code of the central public administration body website of *Dunajská Streda* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.dunstreda.sk/>.

Figure 1 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Dunajská Streda



Source: Website (with style sheets and active elements turned off) of the central public administration body of *Dunajská Streda* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.dunstreda.sk/>.

Central public administration body of Galanta

Next figure displays homepage of the central public administration body of Galanta, with style sheets and active elements turned off. There is no skip link applied.

Analyzing the homepage of the central public administration body of Galanta in context of using the skip navigation links following key findings could be detected:¹⁰

-  Number of links before the main content: 39 links;
-  Number of skip links: 0 links.

According to the presented results we can conclude that there is no skip navigation mechanism applied on the analyzed homepage of the central public administration body of Galanta. In relation to this finding we can recommend to add the skip navigation links in accordance with the model examples shown in the previous part of the study named “Skip navigation links”.

¹⁰ Source code of the central public administration body website of *Galanta* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.galanta.sk/>.

Figure 2 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Galanta



Source: Website (with style sheets and active elements turned off) of the central public administration body of *Galanta* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.galanta.sk/>.

Central public administration body of Hlohovec

Next figure displays homepage of the central public administration body of Hlohovec, with style sheets and active elements turned off. The analyzed skip link is marked by red rectangle.

Analyzing the homepage of the central public administration body of Hlohovec in context of using the skip navigation links following key findings could be detected:¹¹

- ✚ Number of links before the main content: 30 links;
- ✚ Number of skip links: 6 links;
- ✚ Number of links before the first skip link: 0 links;
- ✚ Visual display of skip links: hidden;
- ✚ HTML code of skip links:

```
<div class="hidden-special">  
  <a href="#m_00" title="Prechod na navigáciu block menu">Prechod na navigáciu block menu</a>  
  <a href="#m_170639" title="Prechod na navigáciu Hlavné
```

¹¹ Source code of the central public administration body website of *Hlohovec* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.hlohovec.sk/>.

```
menu">Prechod na navigáciu Hlavné menu</a>  
  <a href="#m_221500" title="Prechod na navigáciu Hlavné menu  
3">Prechod na navigáciu Hlavné menu 3</a>  
  <a href="#m_215382" title="Prechod na navigáciu Hlavné menu  
4">Prechod na navigáciu Hlavné menu 4</a>  
  <a href="#m_110215" title="Prechod na navigáciu Hlavné menu  
5">Prechod na navigáciu Hlavné menu 5</a>  
  <a href="#m_222476" title="Prechod na navigáciu Hlavné menu  
6">Prechod na navigáciu Hlavné menu 6</a>  
</div>
```

```
[Missing selector name="m_00"]
```

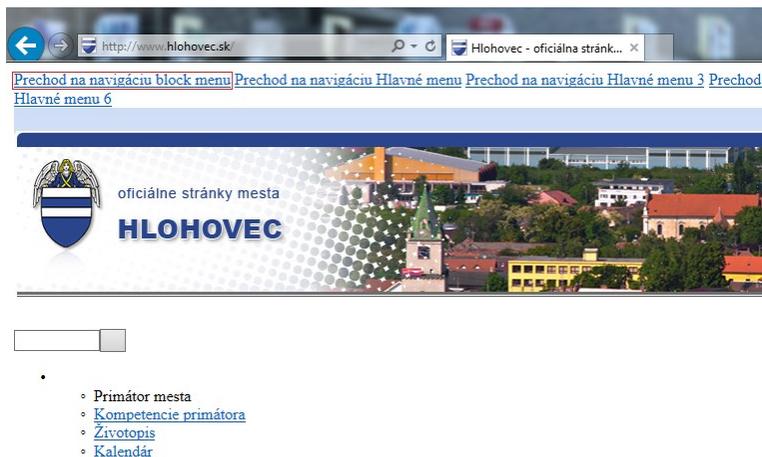
```
<a name="m_170639"></a>  
<a name="m_221500"></a>  
<a name="m_215382"></a>  
<a name="m_110215"></a>  
<a name="m_222476"></a>;
```

✚ CSS code of skip links:

```
.hidden-special {  
  height: 0;  
  overflow: hidden;  
  margin: 0;  
  padding: 0;  
  border: 0;  
}
```

According to the presented results we can conclude that there is a skip navigation mechanism applied on the analyzed homepage of the central public administration body of Hlohovec, but it works technically incorrectly. In relation to our finding we can recommend to replace element "`Prechod na navigáciu block menu`" with element "`Prejst' na obsah stránky`", then to add the attribute `tabindex="-1"` to website's target elements and to replace CSS code "`height: 0;`" with CSS code in accordance with the model examples shown in the previous parts of the study named "Visual hiding of skip navigation links" and "Web browsers' bug related to skip navigation links", with the aim, firstly, to make the skip navigation links content accessible/visible for screen readers and, secondly, to eliminate the disrupted logical order by browsing or reading the webpage links that occurs by most of web browsers.

Figure 3 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Hlohovec



Source: Website (with style sheets and active elements turned off) of the central public administration body of *Hlohovec* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.hlohovec.sk/>.

Central public administration body of Piešťany

Next figure displays homepage of the central public administration body of Piešťany, with style sheets and active elements turned off. There is no skip link applied.

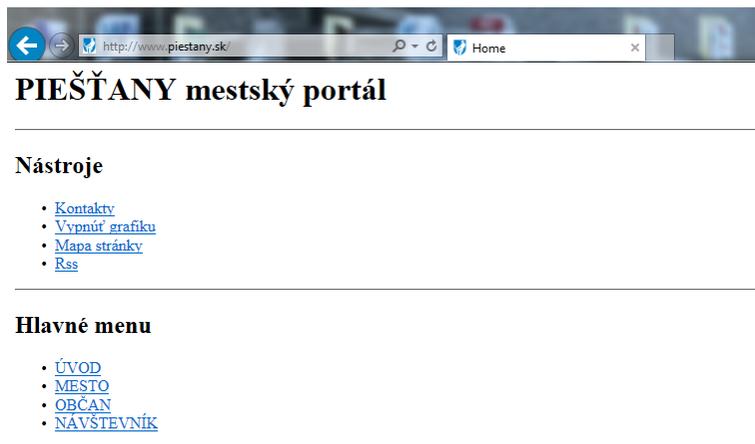
Analyzing the homepage of the central public administration body of Piešťany in context of using the skip navigation links following key findings could be detected:¹²

- ✚ Number of links before the main content: 49 links;
- ✚ Number of skip links: 0 links.

According to the presented results we can conclude that there is no skip navigation mechanism applied on the analyzed homepage of the central public administration body of Piešťany. In relation to this finding we can recommend to add the skip navigation links in accordance with the model examples shown in the previous part of the study named “Skip navigation links”.

¹² Source code of the central public administration body website of *Piešťany* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.piestany.sk/>.

Figure 4 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Piešťany



Source: Website (with style sheets and active elements turned off) of the central public administration body of *Piešťany* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.piestany.sk/>.

Central public administration body of Senica

Next figure displays homepage of the central public administration body of Senica, with style sheets and active elements turned off. There is no skip link applied.

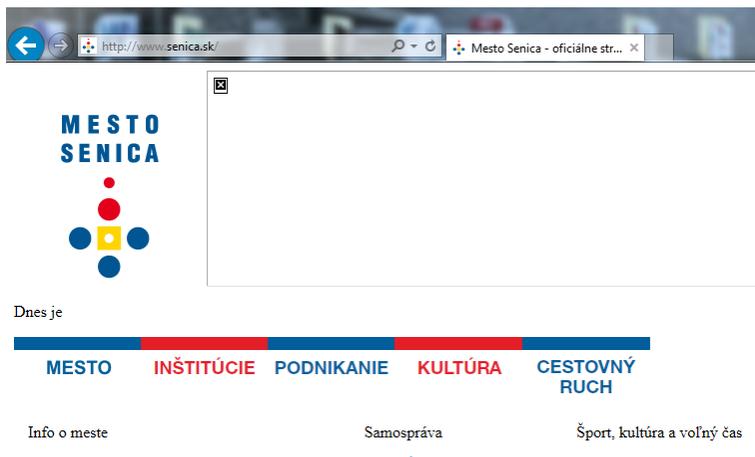
Analyzing the homepage of the central public administration body of Senica in context of using the skip navigation links following key findings could be detected:¹³

-  Number of links before the main content: 47 links;
-  Number of skip links: 0 links.

According to the presented results we can conclude that there is no skip navigation mechanism applied on the analyzed homepage of the central public administration body of Senica. In relation to this finding we can recommend to add the skip navigation links in accordance with the model examples shown in the previous part of the study named "Skip navigation links".

¹³ Source code of the central public administration body website of *Senica* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.senica.sk/>.

Figure 5 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Senica



Source: Website (with style sheets and active elements turned off) of the central public administration body of *Senica* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.senica.sk/>.

Central public administration body of Skalica

Next figure displays homepage of the central public administration body of Skalica, with style sheets and active elements turned off. There is no skip link applied.

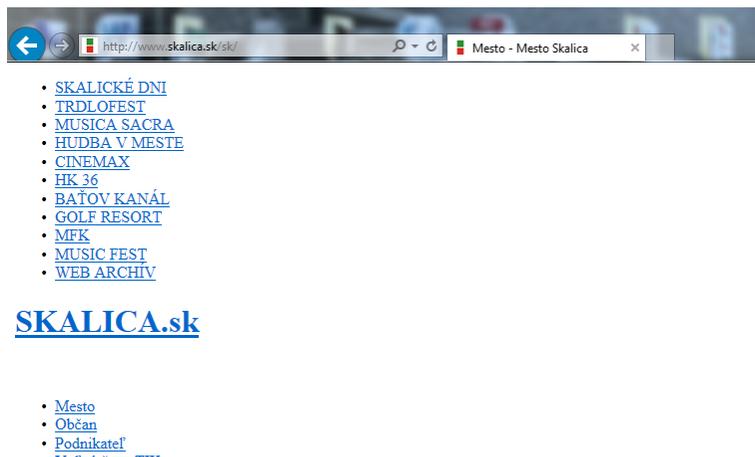
Analyzing the homepage of the central public administration body of Skalica in context of using the skip navigation links following key findings could be detected:¹⁴

- ✚ Number of links before the main content: 295 links;
- ✚ Number of skip links: 0 links.

According to the presented results we can conclude that there is no skip navigation mechanism applied on the analyzed homepage of the central public administration body of Skalica. In relation to this finding we can recommend to add the skip navigation links in accordance with the model examples shown in the previous part of the study named “Skip navigation links”.

¹⁴ Source code of the central public administration body website of *Skalica* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.skalica.sk/>.

Figure 6 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Skalica



Source: Website (with style sheets and active elements turned off) of the central public administration body of *Skalica* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.skalica.sk/>.

Central public administration body of Trnava

Next figure displays homepage of the central public administration body of Trnava, with style sheets and active elements turned off. There is no skip link applied.

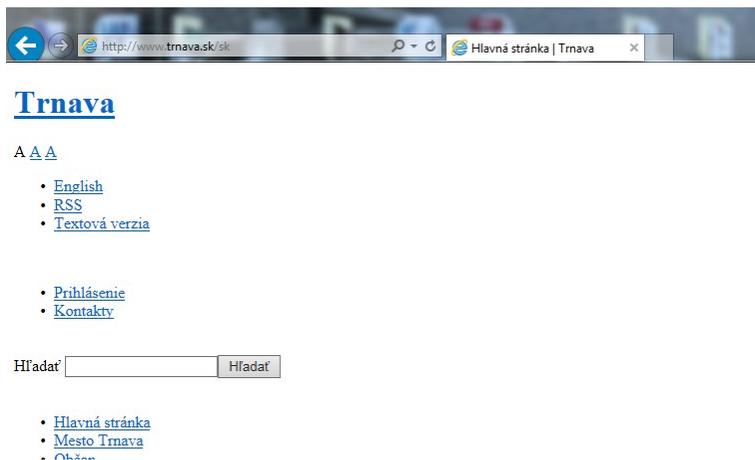
Analyzing the homepage of the central public administration body of Trnava in context of using the skip navigation links following key findings could be detected:¹⁵

- ✚ Number of links before the main content: 22 links;
- ✚ Number of skip links: 0 links.

According to the presented results we can conclude that there is no skip navigation mechanism applied on the analyzed homepage of the central public administration body of Trnava. In relation to this finding we can recommend to add the skip navigation links in accordance with the model examples shown in the previous part of the study named “Skip navigation links”.

¹⁵ Source code of the central public administration body website of *Trnava* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.trnava.sk/>.

Figure 7 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Trnava



Source: Website (with style sheets and active elements turned off) of the central public administration body of *Trnava* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.trnava.sk/>.

Conclusion

In the study “Applying the Skip Navigation Links in the Context of the Websites’ Accessibility of Central Public Administration Bodies in the Trnava Region” we have paid our attention in accordance with its main aim to seeking yet undetected or undefined deficits in relation to applying the skip navigation mechanism on the websites of the central public administration bodies in the Trnava Region in the context of improving the websites accessibility. In the context of our research questions we defined the main hypothesis as follows: *Homepages of the central public administration bodies in the Trnava Region apply technically correctly the skip navigation links mechanism.*

According to the results and key findings presented in previous parts of our study we can underline the following final conclusions (valid as of March 1st, 2015), divided in to three separate groups:

Homepages with the technically correctly working skip navigation mechanism – for this group we can recommend to add the attribute *tabindex="-1"* to website’s target elements which relates to none of central public administration bodies analyzed in this study.

Homepages with the technically incorrectly working skip navigation mechanism – for this group we can recommend to add the attribute *tabindex="-1"* to website's target elements and to replace CSS code *"display: none;"* with CSS code in accordance with the exactly in our study presented model examples. These recommendations relate namely to only one central public administration body:

- ✚ Central public administration body of Hlohovec.

Homepages with no skip navigation mechanism applied – for this group we can recommend to add skip navigation links, then to add target elements, to add the attribute *tabindex="-1"* to website's target elements and to avoid applying CSS code *"display: none;"* in accordance with the exactly in our study presented model examples. These recommendations relate namely to six central public administration bodies, which means the majority of analyzed central public administration bodies in the Trnava Region:

- ✚ Central public administration body of Dunajská Streda;
- ✚ Central public administration body of Galanta;
- ✚ Central public administration body of Piešťany;
- ✚ Central public administration body of Senica;
- ✚ Central public administration body of Skalica;
- ✚ Central public administration body of Trnava.

Finally, as for verifying the set main hypothesis of the study we can conclude that the hypothesis is not valid, so we have to reject it, because from the 7 analyzed homepages of the central public administration bodies in the Trnava Region no homepage was technically correctly working and in compliance with legislation in force¹⁶ (state valid as of March 1st, 2015).

References

"Skip Navigation" Links. In: *WebAIM: Web Accessibility in Mind* [online]. 2013-10-25 [cit. 2015-03-01]. Available at: <http://webaim.org/techniques/skipnav/>.

¹⁶ See *Výnos Ministerstva financií Slovenskej republiky č. 55/2014 Z.z. o štandardoch pre informačné systémy verejnej správy zo 4. marca 2014* [Ministerial Decree of the Ministry of Finance of the Slovak Republic No. 55/2014 Coll. of Standards for Information Systems of Public Administration issued on March 4th, 2014].

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- Source code of the central public administration body website of *Galanta* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.galanta.sk/>.
- Source code of the central public administration body website of *Hlohovec* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.hlohovec.sk/>.
- Source code of the central public administration body website of *Piešťany* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.piestany.sk/>.

Source code of the central public administration body website of *Senica* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.senica.sk/>.

Source code of the central public administration body website of *Skalica* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.skalica.sk/>.

Source code of the central public administration body website of *Trnava* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.trnava.sk/>.

Výnos Ministerstva financií Slovenskej republiky č. 55/2014 Z.z. o štandardoch pre informačné systémy verejnej správy zo 4. marca 2014.

Website (with style sheets and active elements turned off) of the central public administration body of *Dunajská Streda* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.dunstreda.sk/>.

Website (with style sheets and active elements turned off) of the central public administration body of *Galanta* [online]. 2015 [cit. 2015-03-01]. Available at: <http://www.galanta.sk/>.

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Zákon č. 575/2001 Z.z. o organizácii činnosti vlády a organizácii ústrednej štátnej správy v platnom znení.

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