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School of Science

Information Technologies in Medicine and Biology

Direction: *Bioinformatics*

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Assignment 2

Install on your computer the last version of the free screen reader NVDA. Make the software read a document written in Greek, and a webpage written in Greek. Learn the basic buttons for its usage. Write a small report (3-5 pages), including a short guide for the installation, settings and a usage description of NVDA, according to your experience. In case of any problem report relevant comments.

Assignment Description in Greek:

Εγκαταστήστε στον υπολογιστή σας την τελευταία έκδοση του δωρεάν αναγνώστη οθόνης NVDA. Κάντε τον να σας διαβάσει ένα Ελληνικό έγγραφο και μια Ελληνική ιστοσελίδα. Μάθετε τα βασικά κουμπιά για τη λειτουργία του. Κάντε μια σύντομη αναφορά (4-5 σελίδες) με σύντομες οδηγίες εγκατάστασης και ρύθμισης, οδηγίες χρήσης του NVDA, σύμφωνα με την εμπειρία που είχατε. Αναφέρατε επίσης τυχόν προβλήματα, παρατηρήσεις ή σχόλια σχετικά με το NVDA.

Most of people take the way they use a computer daily for granted. A keyboard, mouse and monitor seems necessary, even natural. Yet, many people must rely on other means of interacting with a computer. In this assignment, we were assigned to use and describe a screen reader software called NVDA.

NVDA (NonVisual Desktop Access) is a free “screen reader” which enables blind and vision impaired people to use computers. It reads the text on the screen in a computerised voice. You can control what is read to you by moving the cursor to the relevant area of text with a mouse or the arrows on your keyboard. NVDA can also convert the text into braille if the computer user owns a device called a “braille display”.

NVDA provides the key to education and employment for many blind people. It also provides access to social networking, online shopping, banking and news.

Unfortunately, NVDA, is not supported in MacOS or Linux operating systems, but there are other software for the same usage, most of them paid in MacOS. For the assignments' reasons and the declaration of this specific software I downloaded and tried it on my sister's personal computer that operates over Microsoft Windows 10.

This may change in future, as NVDA is open-source and its main code is written in python and C++. Being opensource can help developers to contribute to NVDA, add more feature and why not, create a linux or MacOS distribution.

Let's start.

Installation

We downloaded the .exe file and run the installation guide. We also checked if there was any other supported greek language voice from the eSpeak (https://github.com/nvaccess/nvda/wiki/ExtraVoices), but unfortunately we found nothing and we had to adjust to the system greek speaking language, which fortunately has been improved lately, but it's not that natural. Nevertheless, we pressed the Install NVDA button. In the installation dialog that appeared we confirmed that we wish to install NVDA and to update a previous install if existed. Pressing the Continue button started installing NVDA. There are also a few options in this dialog which are being explained below. Once the installation had completed, a message appeared telling us that it was successful. Pressing OK at this point restarted NVDA.

More specifically the options mentioned above are described here:

1. When asked for the start on windows logon, we accepted for allowing automatically start of NVDA while on the Windows Logon screen, before you have entered a password. This also includes UAC control and other secure screens, and
2. When asked for the creation of a desktop shortcut we allowed the creation of a shortcut on the desktop to start NVDA. By doing so, this shortcut was assigned a shortcut key of control+alt+n, allowing us to start NVDA at any time with this key stroke.

Settings

After installing the software, we launched the application and we found at the NVDA settings that they can be changed by using dialog boxes accessed through the Preferences sub-menu of the NVDA menu. In all NVDA settings dialog boxes, we pressed the OK button to all the changes you made and will discuss at follow. Some

settings could also be changed using shortcut keys, which were listed where relevant in the sections of preferences.

All changes that we made were at the submenu of “General Settings“, which could also be accessed by Control+g. There, in the general settings dialog box we found the following options:

1. Language: We made a change to the language (Greek) that NVDA's user interface and messages should be shown in, as the default language of the pc was English. We should mention that there are many languages, however the default option is "User Default, Windows". After this and all other changes we restarted NVDA for the settings to be implemented.
2. Save configuration on exit: We checked the checkbox. This option is a checkbox that, when checked, tells NVDA to automatically save the current configuration when you exit NVDA.
3. Show exit options when exiting NVDA. We checked the checkbox. This option is a checkbox that allows you to choose whether or not a dialog appears when you exit NVDA that asks what action you want to perform. When checked, a dialog will appear when you attempt to exit NVDA asking whether you want to exit, restart or restart with add-ons disabled.
4. Play sounds when starting or exiting NVDA. We unchecked this checkbox. It turns off the sounds when it starts or exits.
5. Logging level. Left unchecked as we used this application only once. This is a combo box that permits you to choose how much NVDA will log as it's running.
6. Automatically start NVDA after I log on to Windows. Disabled, as we preferred to run the NVDA only when we choose. If enabled, NVDA will start automatically as soon as you log on to Windows. This option is only available for installed copies of NVDA only.
7. Use NVDA on the Windows Logon screen (requires administrator privileges). Disabled.
8. Use currently saved settings on the logon and other secure screens. Disabled.
9. Automatically check for updates to NVDA. Enabled, in order to automatically check for updated versions of NVDA.

Other submenus of Preferences are:

- Synthesizer Selection (NVDA+control+s): This may be useful for someone who wishes to only use NVDA with Braille, or perhaps to sighted developers who only wish to use the Speech Viewer.
- Voice Settings (NVDA+control+v): Here we made some changed.
  Firstly, here this dialog is containing options that let us change the sound of the speech.

The Voice Settings dialog box contains the following options:

Voice, Variant, Rate, Pitch, Volume, Inflection, Automatic Language Switching, etc. We made some changed not that useful for this report. These were in Pitch and Rate, mostly from curiosity to test how this works.

- Synth Setting Ring
- Braille Settings
- Keyboard Settings (NVDA+control+k)
- Mouse Settings (NVDA+control+m)
- Review Cursor Settings
- Object Presentation Settings (NVDA+control+o)
- Input Composition Settings
- Browse Mode Settings (NVDA+control+b)
- Document Formatting Settings (NVDA+control+d)
- Speech Dictionaries
- Punctuation/symbol pronunciation
- Input Gestures

As one can easily assume from the above and from the application there is a wide range of settings to customize the NVDA program to his preferences.

Usage Guide on a Greek document

We read a document downloaded from internet about Children Psychology in .docx format. To do that, we used navigating with mouse. We noticed that when you move the mouse, NVDA by default reports the text that is directly under the mouse pointer as the pointer moves over it. Something that triggered my attention was that NVDA announced the type of object under the mouse as it moves, like ordered and unordered lists. Worth of telling also that NVDA provides a way for users to understand where the mouse is located relative to the dimensions of the screen by playing the current mouse coordinates as audio beeps. The higher the mouse is on the screen, the higher the pitch of the beeps. The further left or right the mouse is located on the screen, the further left or right the sound will be played (assuming the user has stereo speakers or headphones). These extra mouse features are not turned on by default in NVDA, but we found them by configuring them from the Mouse settings dialog, found in the NVDA Preferences menu. The experience was at first difficult as the mouse was difficult to handle, but we got used to it after the first paragraph reading.

Usage Guide on a Greek webpage

We read an html document in Mozilla Firefox, actually the same as above, but this time we used the browse mode. In browse mode, the content of the document is made available in a flat representation that can be navigated with the cursor keys. We used some of the NVDA's system caret key commands like “say all”, “report formatting”, etc. This was fun. Information such as whether text is a link, heading, etc. was also reported along with the text as we move the cursor keys. We tried to use the “focus mode” (clicked with mouse on the field and automatically changed mode) to take control of a form inside the document and interact with it. There existed an editable text field for input of my email to send me notifications. (After clicking out of the field browse mode enabled again). Then, by reading a tutorial we also found that by pressing enter or space (and escape respectively) we could also switch to “focus mode” and “browse mode”, which seems reasonable for the usage of people with lack of sight.

Summary

In conclusion of this experience, I really enjoyed it as it is very different to assume how such a tool is used, in comparison of how to use this. And a small story on this experience. In past, I used to study in the library of the Athens Medical School, where everyday a blind similar aged lawyer came to study. Every time he opened his laptop, he wore on his headphones and he was studying from documents of his expertise. One day he forgot to plug in the headphones and I heard a ‘awful’ greek voice to talk (this is something that needs to be changed as I commented above), then I became very curious of how this system is used. Now, at last, I think I learned some sort of things in the “how to customize and use” this tool. ☺

Links

http://www.nvaccess.org/

http://espeak.sourceforge.net/

http://espeak.sourceforge.net/languages.html