International Journal of Engineering & Technology, 7 (4.25) (2018) 212-214

International Journal of Engineering & Technology

Website: www.sciencepubco.com/index.php/IJET

Research paper

Applications for the Disabled People with Health Limitations and Old People

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Abstract

Currently, there are various specialized devices that make life easier for people with limited mobility, the disabled, and the elderly. It should be borne in mind that a modern mobile phone or tablet with special applications installed on it can, if not replace, complement these devices, making life easier for deaf, hard of hearing, blind, visually impaired people, and autists. Some versions of the considered applications are accessible from a computer using a browser. If desired, you can install the android emulator on your computer and run some of the programs reviewed. This research has considered applications created to make life easier for people with disabilities, people with health limitations and the elderly.

Keywords: *universal design, software, application, mobile, disability.*

1. Introduction

Today, the most important discussion about the suitability of urban spaces for people with disabilities is the removal of obstacles in the paths of movement and suitability for this cortex. Paragraph 25 of the 37th UN General Assembly resolution on the rights of persons with disabilities states: "The principle of equal rights for persons with disabilities and healthy people implies that the needs of all people in society are of equal importance and to meet these needs." It must be based on the planning of communities. Therefore, the fitting of urban spaces for people with disabilities and for the poor is not only important for transport and relocation, but also from a social and human perspective. The desirable criterion of a place for disabled people and veterans is the appropriateness of the surrounding urban space around their motor needs and their usability. In this article, we first discuss the recognition of disability and, by mentioning their major problems in urban areas, they have been trying to provide solutions to the problems of the disabled. Also, by criticizing the traditional attitudes towards the public spaces of urban space and designing new approaches in this regard, the challenges of using the social group of people with disabilities from these spaces have been evaluated.

2. Applications for people with impaired hearing

RogerVoice. The program is designed so that people with impaired or hearing impaired can talk on the phone (Fig. 1). The program converts incoming speech through a cellular telephone channel or the Internet into text in real time and, conversely, converts text printed by non-persistent person into generated speech. The program supports telephone and Internet calls. The disadvantage is the lack of translation of the application into Russian. For the program to work, you must enable an Internet connection on the device (data transfer). The free version supports internet calls and phone calls with time limits. The application is available for android and iphone.

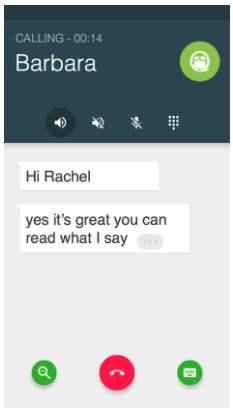

Fig. 1: RogerVoice app

Yandeks. Povgovor: Help the deaf. The application was created to facilitate the communication of an ordinary and non-sensible person, converting the printed text into speech and the spoken speech into text, showing the result on the screen and presenting the dialogue in the form of a dialogue resembling modern messengers or sms. The program can save the history of communication, has prepared phrases (Fig. 2). The application is recommended to use in a quiet place, available for android.

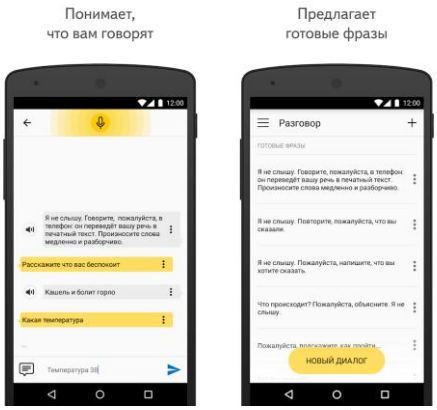

Fig. 2: Yandex. Phone application: Help for the deaf

Souddofon. The program is designed to translate oral speech into sign language, which is displayed on the screen using a 3d model (Fig. 3). An application can convert printable text to speech. It is possible to establish a video call with a professional sign language interpreter (this option is available from 5:00 to 13:00 Moscow time). The program is available in Russian for android and ios.

Fig. 3: Appendix Souddofon.

If you need round-the-clock access to video communication and video translation, you can use the paid translator software.
The Language of Gestures (Alphabet and Words) program is designed to learn sign language (alphabet, words) using images and video.
A similar application Sign language (learning fingerprint) is designed to learn sign language using images in Russian and Ukrainian languages (Fig. 4), has 3 modes: training, practice, vocabulary. The program is available for android.

Fig. 4: Sign language program (learning fingerprinting)

The Spread Signs program teaches the user 22 sign languages, but users notice translation errors.
The HearYouNow program enhances the sound of the environment and transmits it through customizable headphones (Fig. 5). Available for ios.

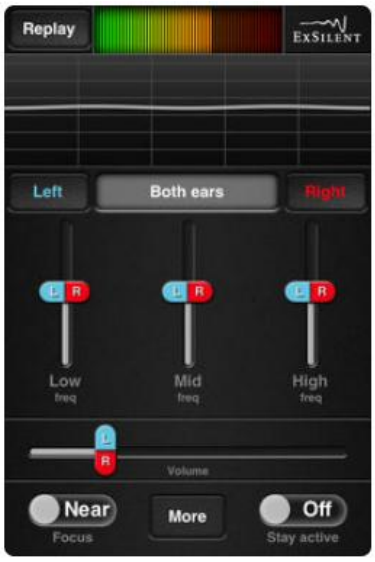

Fig. 5: HearYouNow application

3. Application for People with Visual Impairment

The Toolwiz Eyes Voice Guide Cam program is capable of identifying plants, animals, vehicles, food and other things in real or near real time using a mobile device camera (more than 5,000 plants, animals, things (Fig. 6)) and also has a flashlight function. The program can not recognize those things that it does not know. The program is available for android and for ios called Toolwiz Eyes-AI camera in English.

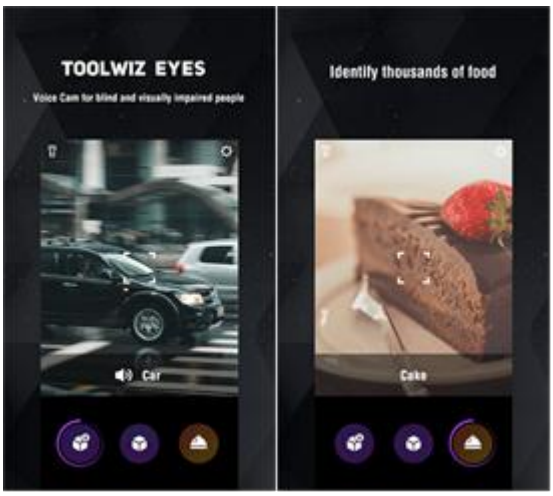

Fig. 6: Toolwiz Eyes Voice Guide Cam application

The application Visually Impared allows you to interact with the phone by shaking it, to recognize the text using the camera.
The program Eye + (For Blind & Visually impaired) changes the interface of the smartphone, displaying 4 large buttons on the whole screen for ease of use by people with impaired or no sight, also suitable for older people. Available for android.
The Help Launcher program is similar to it, but uses colors and icons, designed for the elderly and people with visual impairments.

The BigBrowser browser is designed for people with low vision, has an enlarged keyboard and controls, approximation functions, is available for the ipad.
The Walk Helper for Blind app helps the blind people navigate the space, but is not a substitute for a guide or guide dog, in some cases it can be dangerous due to possible navigation errors and errors in satellite positioning (cloudiness, thunderstorms, rain and other factors). affect the accuracy of determination, in addition, even in clear weather, the error can reach several meters), it should be taken into account. The program gives advice on navigation.
The ICSEE program (I Can See) performs the role of an electronic magnifying glass using a camera of a smartphone or tablet. The program has audio instructions, 8 filters to facilitate the reading of the text for people with visual impairments. There are also programs similar to it: for example, the Magnifier, the Magnifier and a microscope and others. The program Screen Reader For the Blind allows you to increase what is on the screen, read with the help of a speech generator screen contents, pages.
The Be My Eyes application allows a blind person to contact the volunteer via the Internet and receive instructions from the volunteer using the camera of a mobile phone or tablet, the volunteer in this case is the temporary eyes of a blind person, using voice communication, the camera and the display says what he sees. The application is designed for blind or partially sighted people and volunteers who want to help them. The program supports more than 180 languages. The program is available for android and ios.

4. Navigation accessibility maps other

The Disabled Facilities Map application contains a map of accessible or inaccessible facilities: temples, hotels, cafes, parkings, toilets in the city of Moscow (Fig. 7). Program Map Availability Len. The region provides similar functionality. A program with a similar name Accessibility Map is distinguished by a large number of settings, cities, is available as an android application and from a computer.
Application Available environment: Questionnaire survey was created to view and edit information about the accessibility of various objects for people with disabilities, people with limited mobility.
Diabetes Program - Blood Glucose Diary, Diabetes: M, Diabetes. Nutrition developed to control this disease.

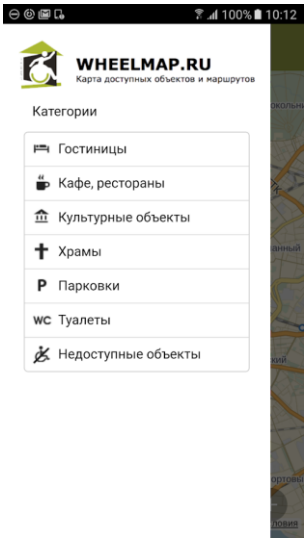

Fig. 7: Application Object Map for Disabled

In the app sesame, online communication takes place with the help of icons, making it more accessible for people with various diseases. Programs Autism Learning ABC and Words, miracle modus, Grace App for Autism, Socks Sasha - for children with autism, Talking pictures: Autism cerebral palsy, Talking cards are designed mainly for children with autism [1-4, 7, 8].

5. Conclusion

It is necessary to take into account the approaches used in the applications described in this article for designing future programs, including distance learning [10].
As a result of studying these programs, it becomes obvious that with the help of a mobile device and special applications it is possible to make life easier for people with various disabilities and older people.

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