Inspiring4Biodiversity

"INTRODUCING THE BIODIVERSITY OF LAKE BALATON REGION"

Developing an app / smartphone application

Erasmus+

Introduction

The use of mobile phones has become the primary means of communication. We bring our mobile phones with us almost everywhere we go. With the help of mobile internet, we are always connected to each other and to the world.

The patterns of using mobile phones are constantly changing. We spend nearly 90% of our time spent on smartphones using apps, since they are faster, more user-friendly, more convenient and more functional than just browsing websites.

The majority of users use the applications mainly for entertainment, social media, shopping or managing other issues. However, smartphone applications can also be an effective tool to raise awareness and share knowledge. Users can use the application to get a more accurate and detailed picture of the biodiversity of the area where they live.

The advantage of a mobile application over a mobile-optimised website is that it is not limited by browser limitations and it can be used offline too. They are interactive and provide a better user experience. They are faster and easier to use than mobile browsers. Users spend 3-4 times more time using mobile applications. Moreover, mobile applications are widely available. They can be found in the AppStore, Google Play and/or Windows Marketplace. Thus, those people who are looking for downloadable apps can easily find the applications.

There are plenty of mobile apps, mainly available in English. In the field of nature conservation and environmental education, users can choose from a range of applications with different themes and structures, depending on their personal goals and interests.

Unfortunately, the Lake Balaton Development Coordination Agency did not have opportunity to develop the proposed pedagogical application in practice in the framework of the "Inspiring for Biodiversity" project. Therefore, in this description we are going to present the applications developed by our partner organisations, introducing them as good practices, and we are going share their tips and recommendations in order to help other organisations to develop similar awareness-raising tools.

Developing an application – as a pedagogical tool

The smart devices have brought many benefits to our lives. Years ago, identifying plants, which were unknown to us, was very difficult. By the spread of the internet, it became a little easier, but the real breakthrough has come with the appearance of apps, which can be downloaded to phones and tablets. We can always have free plant identification applications with us, by which we can quickly and accurately identify plants even from a photo.

There are very few plant identification applications in Hungarian. Most of them are available in English. Nevertheless, there is no need to panic if you are not familiar with English. All plant identification apps offers to display the name of the plant in Latin. Know the Latin name, it is easy to find the Hungarian name of the plant and get detailed information on it. Reptile and bird identification apps are also available in Hungarian. They are a great help in identifying the species.

Therefore, an app that can be installed on smartphones can be an effective tool for raising the awareness of the local population and sharing information about biodiversity. Thereby, people can get more accurate and detailed picture of the habitats in their area. The application not only helps to learn more about local biodiversity, but it also helps to enhance the ecosystem by creating new habitats.

For who is it recommended?

- for gardeners who want to try organic gardening,
- for garden owners who want to better connect their homes with nature,
- for the general public interested in nature and biodiversity who want to protect local flora and fauna.

The aim of the proposed application is to:

- ***Increase biodiversity*** - the diversity and variability of plants, animals and micro-organisms of a habitat or ecosystem play important role, both in terms the health of communities and sustainability efforts. By creating different habitats, we can observe the living organisms and we can learn more about their environmental needs.
- ***Contribute to the protection of pollinators***, which play a crucial role in growing healthy small garden plants. One third of the world's food production depends on pollinators. Therefore, their protection is a priority not only for the ecosystem, but also for human health as well.

- ***Contribute to the protection of the decomposing organisms/soil life*** that are essential for the development of healthy soils and the production of healthy garden plants.
- ***Ensure free access*** for the public and garden owners to a detailed knowledge base and collection of ideas, by downloading the application.

The application introduces the diversity of plants and helps users to get information about the condition of the soil for example based on the weeds growing at the area.

Organic gardening at home is becoming more and more fashionable. People gather a lot of information from the Internet, which they might can adapt into practice or might not. The application gives practical help to create different types of habitats, by which we can attract many useful organisms into our garden. Using the habitat design function of the application, we can plan different types of habitats, e.g. wetland habitat, dry habitat, or habitat for decomposers, etc.

Example of information materials to upload:

Some wild plants indicate that the soil is calcareous, calcareous-poor or acidic. If you are designing a garden, this information will be useful to plant ornamental plants, as you will be able to select the most suitable plants to the given soil type.

The field bindweed (Convolvulus arvensis) indicate that the soil is calcareous, rich in humus and has a deep fertile layer – thus, it is good for gardening.

Sometimes the common knotgrass (Polygonum aviculare) indicates a stagnant water and wet surface

If you there are nettles (Urtica sp.) in the garden, the soil is slightly acidic, rich in nitrogen and iron.

How to develop an application?

It is important to emphasise that you need professional expertise for the development of application, even from the very first step.
This requires the involvement of professionals, both for the programming of the application and for the selection and elaboration of information materials to be uploaded as well. When you are designing a mobile app, keep in mind to make a user-friendly product.
In addition, the application must be compatible with the different types of smart devices, even for a tablet or a smartphone.

Main steps of application development:

- Define the goal we want to achieve by the development of the app.
- In line with the defined goal, determine the topics along which we can create the structure of the application, the menus and the content to be uploaded.
- Keeping our goal in mind, we has to prepare and collect the texts, images, audios, videos, etc. that we will uploaded into the application.
- In accordance to the content uploaded, a unique graphic appearance for the app should be designed.

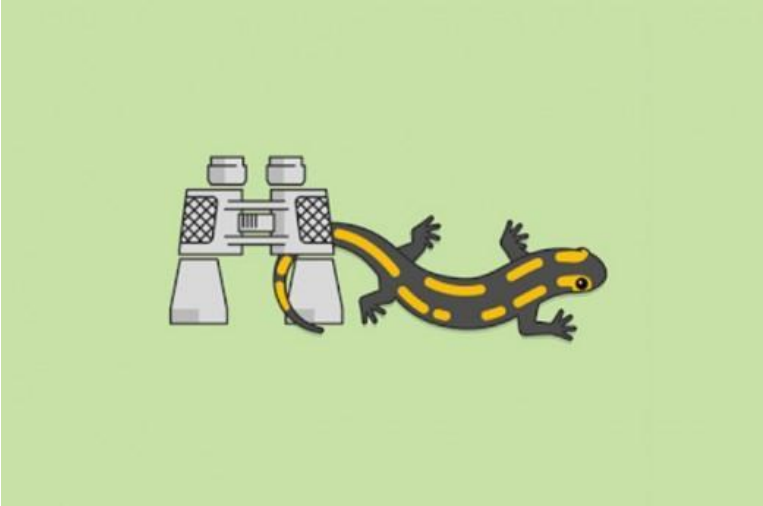
It is recommended to cooperate with other people and organisations (e.g. associations, national parks, etc.) who has developed or are planning to develop similar application to raise awareness on biodiversity. They can give us advice, and we can learn from their mistakes too.

In any case, we must made the content of the application proofread by professionals.

Good practices for biodiversity applications

Amphibian and reptile identification app

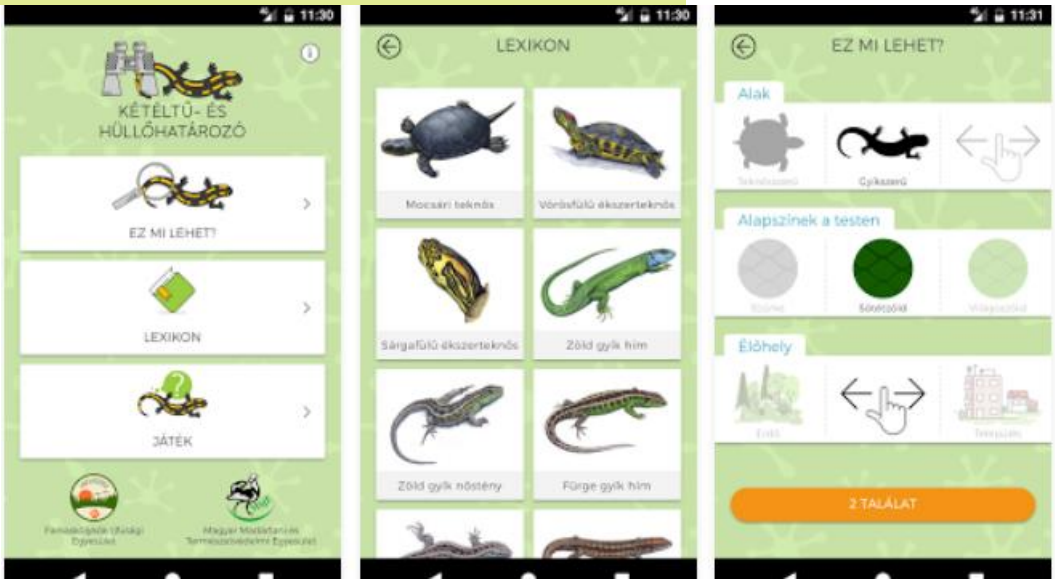
The application, developed in cooperation of Hungarian Ornithological Society and the Wolf Cubs Youth Association, was launched in April 2017 and some a new feature was added in 2021. The app runs on both Android and iOS. With the application, we can identify all the 17 amphibian species and 18 reptile species available in Hungary. There are 41 colour illustrations, 12 frog sounds and detailed descriptions on the species.



The identification app is designed for those people who are not expert but still they want to know what amphibian or reptile they have seen in their garden, on the coast or in the woods. The app shows you the possible species based on even one selected feature. Of course, you can narrow the search results, for example by giving the shape, colour and habitat as well.

On the data sheet of the species, we can find a short description of the species, including the Latin and English names, taxonomic classification and conservation value. Regarding frogs, we can also listen to the voices of the different species. There is a link at the bottom of page, which directs us to the website of the Hungarian Ornithological Society, where we can find more detailed descriptions of the species and we can find more photos too.

If we do not want to identify species, just to learn and get information about the animals, we can use the "Lexicon" function, which lists the species in the application. Moreover, we can also test our knowledge with the "Game" function.

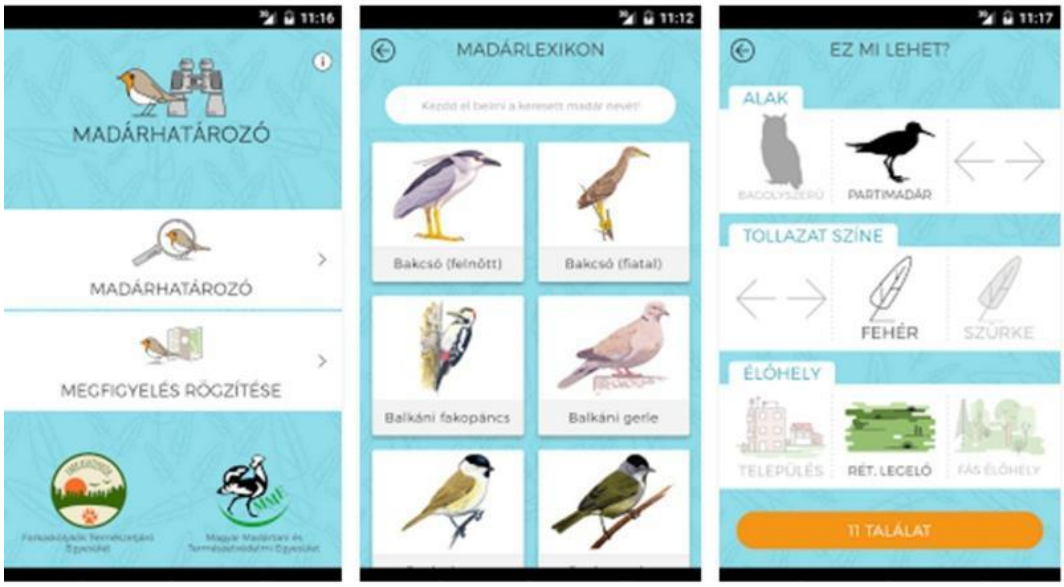


Bird identification app

This application was developed also in cooperation of Hungarian Ornithological Society and the Wolf Cubs Youth Association. It also runs on both Android and iOS. It was launched in April 2016 with the 157 most common bird species. By the update in April 2018, and the number of bird species increased by 210 new species. Now 367 bird species are available in the app, which covers almost the entire bird fauna in Hungary.

The bird identification app is designed for those people who are not skilled birdwatchers, but they want to get more information about the bird species they have observed in their garden, in the park, in the bird feeders, etc. It is the first bird identification app for mobiles in Hungary. It has the following features:

- Bird identification
- Bird lexicon
- Recording observation
- Game
- Data upload to the Bird Atlas Programme
- 367 bird species, 547 illustrations and 203 bird songs



Conclusion

The smartphone application is designed to raise the awareness of the younger generation in particular, who use their phones not only for making calls and sending messages, but who also use the phones for getting new information and for recreation and leisure activities. The application can be an effective tool for raising awareness, allowing users to learn about the biodiversity of their environment and to get detailed information about the plant and animal species native to their area. The app offers an an easy and fun opportunity to increase their knowledge about the protection of biodiversity.

The development of applications is a complex task. It is recommended to involve nature conservation experts in the elaboration of the content and to assign a professional web developer to make the application. The development of the application is time-consuming and costly, but there is no doubt, the user experience provided by the application will compensate us for all our efforts.

Imprint

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