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Republic of North Macedonia  
Ministry of Information  
Society and Administration



Foundation for sustainable ICT solutions

## CONCEPT

### Open Data Hackathon (30 November – 3 December 2021)

#### The main goal of the Hackathon

The Open Data Hackathon is a 4-day challenge in which participants need to develop a creative solution that will enable the promotion of the open data concept. The main goal of the Hackathon is to bring open data to all citizens and present it simply and innovatively.

The final product of the Hackathon should be a creative solution for visualizing databases, linking two or more databases or facilitating the process of filling in and updating publicly available databases published by one or more public institutions. Teams can choose to develop only one of the required concepts or develop an integral solution that includes two or three elements. Based on the set criteria, only one of the proposed solutions, which will be ranked the highest, will be selected as a winner.

#### 1. Who is eligible to participate?

Eligible to participate are teams composed of students or startup companies in the field of IT. The members of each team must know programming, design, economics, marketing, etc.

The winner of the Hackathon **will receive a financial support of \$ 3,000 intended for the completion of the demo version in a functional application.**

The available databases and registers are in different forms and have different ways of publishing. The Hackathon organizer has no obligation to submit the databases in a form suitable for processing. Teams should process the data independently if the data is not in the proper form. The concept that will be developed during the Hackathon does not have to contain the relevant data, i.e. it can be based on similarly distributed data that correspond to the structure of the database. In case the winning concept is developed on a base that is not suitable for processing, the base will be additionally provided by the relevant institution, to successfully implement the winning concept.

## 2. Hackathon rules

- The number of teams participating in this Hackathon is 10;
- A team can have at least 3 members and a maximum of 8 members;
- One company (startup company) can register only one team;
- Teams work at their own choice virtually or with a physical presence in the premises of the company or other public premises where the gathering of groups is allowed;
- During the Hackathon, teams will receive advice and support from mentors and organizers;
- Meetings with Hackathon mentors will be arranged and conducted via online tools;
- Mentoring hours are defined by the mentors, and participants choose them according to their schedule and preferences;
- The operation of the code before the event with the sole purpose of using the code during the event is against the rules and is not allowed;
- Teams must stop coding as soon as the end of the Hackathon is marked (3 December at 11:00) and the presentation of the demo product along with a link to it is sent to the e-mail address [hakaton@metamorphosis.org.mk](mailto:hakaton@metamorphosis.org.mk);
- The demo product must be made during the Hackathon;
- The demo product should be made in Macedonian.

## 3. Registration of participants

The registration of participants is done by filling in the following [form](#). All team members must register individually.

## 4. The concept for linking, presentation or visualization of databases published by public institutions

### What are we looking for?

Participants need to develop a web/mobile application that will enable visualization, interactive display and/or facilitation/digitization of the processes for filling in and updating data from databases published by the state administration bodies. Merging, combining and linking of two or more related data sets are allowed.

Participants need to develop a web/mobile application that will enable the continuous display of databases that are regularly published by state administration bodies. In the last 4 years, the Government has published numerous tools and databases that have been made available to the public. There are currently numerous opportunities to use the data and create new databases or products that will serve to the improved use of publicly available data. At the same time, many of the databases are published as raw data, and the public does not experience any added value from their publication. The main purpose of the application should be to display data published today in tabular form and without additional information. At the same time, some data are related and

by combining them additional information can be provided that will be useful and in the interest of citizens.

Teams have the freedom to select and combine data sets from those offered below or to process data of their choice. Involving gamification or data interaction will be considered an advantage in choosing the best solution.

Additionally, the teams that will enable and offer an innovative solution for simpler filling, collection and processing of data (which will facilitate or digitize the current practice), will have an advantage in the process of choosing the best solution. Therefore, the solution should have an understandable design and a simple back end. *The user should be able to access the data simply, be able to make various searches, comparisons or calculations. The institution should be able to enter and update the data in a tabular format in a simple or automated way, and the system should load, process and display data independently.*

Finally, concepts that demonstrate the potential for commercialization, or the use of publicly available data to address a particular problem or satisfy market need will take precedence in selecting the best solution.

If the team participating in the Hackathon has a private database and they wish to combine it with public datasets, this will also be considered an advantage in choosing the best solution.

## **5. Evaluation criteria**

Each demo project during the online Pitching / Presentation of the demo solutions for the application before the Commission for selection of a winning solution is evaluated individually by each member of the Commission, based on the following evaluation criteria:

### **a. Innovation of the idea/solution - 10%**

This criterion assesses the degree of originality of the idea. It is necessary for the idea to be different from what currently exists or to offer something new that does not exist at all in North Macedonia. A drastic improvement of a solution that currently exists, but has shortcomings is also considered as an innovation..

### **b. Compliance with Hackathon goals - 20%**

This criterion assesses the level of fulfillment of the Hackathon criteria. The idea must follow the directions for promotion, the approximation to the public and simplification of the processes and mechanisms for open data.

### **c. Degree of integration - 15%**

This criterion evaluates the technical characteristics of the concept, i.e. how simple it is to operate, whether there is a solution for constant updating, whether there are clearly defined data sources and possibilities for connection to existing databases.

If the data is in a format that is unsuitable for processing, then the concept should offer a way to continuously provide the relevant data in an appropriate format.

### **d. Feasibility of a conceptual solution - 20%**

This criterion assesses the level of feasibility of the offered solution. Teams that have a clear idea of how to implement the concept will have an advantage in this criterion.

#### e. Presentation - 20%

This criterion evaluates the quality of the presentation, respect for the time for presentation, the readiness of the team, their coordination and clear answer to the questions asked by jury members.

#### f. Team capacity - 15%

This criterion assesses the readiness of the team to implement the concept after the completion of the Hackathon. The team needs to be composed of members with different skills and professional backgrounds that are complementary and essential to the successful realization of the idea.

**Total number of points: 100**

**Assessment scale:** from 1 to 5 (1 being the lowest and 5 being the highest)

The winner of the Hackathon is the team/demo solution that received the most points. In the case of an equal number of points between two or more teams, the vote of the project holders is decisive.

## 6. Q and A

Please send your questions regarding the Hackathon to [hakaton@metamorphosis.org.mk](mailto:hakaton@metamorphosis.org.mk); no later than 20 November 2021.

## 7. Examples of registers and databases

Examples of portals from other countries:

- a. World Health Organization (WHO) - Global Health Observatory data [https://www.who.int/gho/maternal\\_health/reproductive\\_health/adolescent\\_fertility/en/](https://www.who.int/gho/maternal_health/reproductive_health/adolescent_fertility/en/)
- b. Singapore Government – demographic data [https://data.gov.sg/dataset/resident-population-by-ethnicity-gender-and-age-group?resource\\_id=f9dbfc75-a2dc-42af-9f50-425e4107ae84](https://data.gov.sg/dataset/resident-population-by-ethnicity-gender-and-age-group?resource_id=f9dbfc75-a2dc-42af-9f50-425e4107ae84)
- c. Transparency International <https://www.transparency.org/gcb2013/country?country=afghanistan>
- d. Georgia - <https://budgetmonitor.ge/en>
- e. 40 open data projects - <https://carto.com/blog/forty-brilliant-open-data-projects-preparing-smart-cities-2018/>

Proposed registers:

- [www.data.gov.mk/organization/mnhnctepctbo-3a-o6pa3obahne-n-hayka](http://www.data.gov.mk/organization/mnhnctepctbo-3a-o6pa3obahne-n-hayka) - register of all elementary schools on the territory of RNM. This register can be combined with other registers available to the public.

### - Finance

- \* [www.finance.gov.mk/mk/igri](http://www.finance.gov.mk/mk/igri) - there is no register of issued gambling licenses, but after the issued licenses are published, it is easy to create a register that could be displayed in combination with other registers.
- \* <http://nbstat.nbrm.mk/pxweb/mk/> -NBRNM database which contains all data produced by the National Bank, and also data that are not from the Bank, but are related to monetary policy.

### - Health

- \* [www.data.gov.mk/organization/3dpabctbo](http://www.data.gov.mk/organization/3dpabctbo) - registers on the Open Data Portal
- \* [http://zdravstvo.gov.mk/sekundarna i tercierna/](http://zdravstvo.gov.mk/sekundarna_i_tercierna/) - registers for health institutions in RNM
- \* <https://lekovi.zdravstvo.gov.mk/> - registers related to medicines, pharmacies and medical devices

### - Environment

- \* [http://www.moep.gov.mk/?page\\_id=2699](http://www.moep.gov.mk/?page_id=2699) – registers maintained by the Ministry
- \* <http://data.gov.mk/organization/mxctttt> - additional registers, published on the Open Data Portal

### - Agriculture, Forestry and Water Economy

- \* <http://data.gov.mk/organization/mnhnctepctbo-3a-3emjodejictbo> – registers published on the Open Data Portal
- \* <http://www.mzsv.gov.mk/> - additional registers published on the website of the Ministry (you should go to Active Registers on the Ministry's website)

### - Economy

- \* <http://data.gov.mk/organization/ekohomnja> – registers on the Open Data Portal
- \* <https://economy.gov.mk/docs/registri> – registers published on the Ministry's website

### Proposed bases:

- [www.open.finance.gov.mk](http://www.open.finance.gov.mk) - Database in which can be seen all the transactions that have been made and passed through the Treasury of the Ministry of Finance. The database is updated every 2 weeks and contains raw data that can be processed for research purposes.
- [www.finance.gov.mk/mk/node/575](http://www.finance.gov.mk/mk/node/575) - Data sets related to the Budget of RNM. Some of the data is in XML format which allows their further processing. Budget data are summarized at [www.budget.finance.gov.mk](http://www.budget.finance.gov.mk), web-application for Citizen Budget. Budget data are useful in analyzing public policies and funds provided for their implementation in the current and past years.
- [www.finance.gov.mk/mk/node/898](http://www.finance.gov.mk/mk/node/898) - Datasets related to the execution of central and local government budgets. This data can be used for cross-referencing with databases of other institutions and local self-government units.

- [www.e-nabavki.gov.mk/PublicAccess/Home.aspx#/home](http://www.e-nabavki.gov.mk/PublicAccess/Home.aspx#/home) - Web-application that provides a complete overview of past, present and future public procurement processes in all state institutions. The database does not contain open data and all research should be done independently or by providing access to public information. [www.opendata.mk/Home/Tekstualni?Category=2](http://www.opendata.mk/Home/Tekstualni?Category=2) - Portal that processes data related to public procurement processes (external database).
- [www.air.moep.gov.mk](http://www.air.moep.gov.mk) - Database for air quality measuring stations set up by the Ministry of Environment and Physical Planning.
- [www.data.gov.mk/organization/mbp](http://www.data.gov.mk/organization/mbp) - data.gov.mk is a portal that contains all the open data of state institutions, but it is most accurate to search by organizations. This link is intended for the data of the Ministry of Interior. Most often, data sets are aggregated and are related to public safety and traffic safety.

#### Proposed databases from the civil sector:

- [www.opendata.mk](http://www.opendata.mk) - The database of the Center for Civil Communications contains a lot of data related to public finances. Most of the data is processed by the Center.
- [www.mojvozduh.eu](http://www.mojvozduh.eu) - My Air Database consists of air quality data. Within the application, there are also databases (<https://github.com/jovanovski/MojVozduhExports>) which are easy to process and have visualizations of part of the data (<https://mojvozduh.eu/projects/crowdsourcing>)