



## OPEN DATA HACKATHON CONCEPT

THIRD EDITION

(24 – 27 March, 2022)

### Goal of the Hackathon

The Open Data Hackathon is a four-day competition in which participants need to create 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 the citizens and present it in a simple and innovative way.

The final product of the Hackathon is expected to 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 will be selected, the one which will be ranked the highest.

### General information

Teams of students or IT startups are eligible to participate in the Hackathon. It is essential that members of each team have knowledge of programming, design, economics, marketing and similar areas.

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

The available databases and registers are in different forms and have a different method 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 it 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 will correspond to the structure of the database. In case the winning concept is based on a base that is not suitable for processing, that will be additionally provided by the relevant institution, in order to successfully implement the winning concept.

### Registration of participants

Teams made up of students or IT startups can apply for the Hackathon. It is essential that each team member has knowledge of programming, design, economics, marketing, and the like. A team can be composed of at least three members and a maximum of eight. One enterprise (\*startup company) can only register one team.

*\*A startup company is a company that is not older than 6 years, that has or is still working on developing an innovative product or service and is in an early investment phase.*

The registration is on the [following link](#). The application is open until **March 23, 2022, until 12:00**.

## Rules

- The maximum number of teams - participants in the Hackathon is ten (10);
- A team can be composed of at least three members and a maximum of eight;
- One enterprise (startup company) can apply for participation with only one team;
- Teams work with physical presence in a predetermined location;
- During the Hackathon, teams will receive advice and support from mentors and organizers;
- Meetings with Hackathon mentors will be arranged and conducted in person
- Mentoring time slots are defined by the mentors, and participants choose a slot or slots 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 Hackathon is over (March 27 at 11:00 am). The presentation of the demo product together with the link to it should be sent to the e-mail address [hakaton@metamorphosis.org.mk](mailto:hakaton@metamorphosis.org.mk);
- The demo product must be made for the duration of the Hackathon;
- The demo product should be made in Macedonian language.

## Concept for linking, presentation or visualization of databases published by public institutions

### Requirements

It is necessary 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 is permitted.

It is necessary to develop a web / mobile application that will enable continuous display of databases that are regularly published by state administration bodies. In the last 5 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 be used to better use publicly available data. At the same time, many databases are published as raw data, and the public sees no added value from their publication. The main purpose of the application should be to display data that are published today in a tabular form and without additional information. At the same time, there are data that are related and by combining them, they can provide additional information that will be of benefit and interest to the citizens.

Teams can select and combine data sets from those offered below or process data of their choice.

Involvement of gamification or data interaction will be considered an advantage when choosing the best solution.

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

Concepts that will display potential for commercialization or the use of publicly available data to solve a particular problem or meet a market need will have an advantage when selecting the best solution.

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

## Evaluation criteria

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

**a. Compliance with Hackathon goals - 20%**

This criterion assesses the level of fulfillment of the Hackathon criteria. The idea should follow the guidelines for promoting, bringing closer and simplifying the processes and mechanisms for open data.

**b. Feasibility of the 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 should have an advantage in evaluating this criterion.

**c. Presentation - 20%**

This criterion evaluates the quality of the presentation, whether the time allotted for the presentation was respected, and the readiness of the team, their coordination and clear answer to the questions asked by the members of the commission.

**d. 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 the manner of continuous updating, whether there is a clearly defined data source 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.

**e. 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 which possess different skills and professional backgrounds that are complementary and key to the successful realization of the idea.

**f. 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 the current offer or to provide 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 an

innovation.

**Total number of points: 100**

**Assessment scale:** from 1 to 5 (where 1 is the lowest and 5 is the highest grade)

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

## Questions & Answers

You can send your hackathon questions to [hakaton@metamorphosis.org.mk](mailto:hakaton@metamorphosis.org.mk); latest by 20 March, 2022.

## Suggested examples, registers and databases

Examples of portals from other countries:

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/)

Government of Singapore - 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)

Transparency International

<https://www.transparency.org/gcb2013/country?country=afghanistan>

Georgia - <https://budgetmonitor.ge/en>

40 open data projects - <https://carto.com/blog/forty-brilliant-open-data-projects-preparing-smart-cities-2018/>

## Suggested registers:

- [www.data.gov.mk/organization/mnhnctepctbo-3a-06pa3obahne-n-hayka](http://www.data.gov.mk/organization/mnhnctepctbo-3a-06pa3obahne-n-hayka) - Register of all primary schools on the territory of RNM. This register can be combined with other registers available to the public.

- *Finances*

\* [www.finance.gov.mk/mk/igri](http://www.finance.gov.mk/mk/igri) - there is no register of issued licenses for games of chance, but after the issued licenses are published, it would be easy to prepare 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, but also data that are not of the Bank, but are related to the monetary policy.

- *Healthcare*

\* [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.moepp.gov.mk/?page\\_id=2699](http://www.moepp.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 (should go to Active Registers in MAFWE)

#### - *Economy*

\* <http://data.gov.mk/organization/ekohomnja> – registers on the open data portal

\* <http://www.economy.gov.mk/docs/registri> – registers published on the website of the Ministry

### **Suggested bases:**

- [www.open.finance.gov.mk](http://www.open.finance.gov.mk) – Database in which you can see 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 a XML format which allows their further processing. Budget data are summarized at [www.budget.finance.gov.mk](http://www.budget.finance.gov.mk), Citizen Budget web application. 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 units of local self-government.
- [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 in all state institutions. The database has no 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 (external database).
- [www.air.moepp.gov.mk](http://www.air.moepp.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 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.

### **Suggested databases from the civil sector:**

- [www.opendata.mk](http://www.opendata.mk) – The database of the Center for Civil Communications has 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 related data. There are also databases within the application (<https://github.com/jovanovski/MojVozduhExports>) which are easy to process and have a visualization of some of the data (<https://mojvozduh.eu/projects/crowdsour>)