IBM **2BFAIR**

User Guide

The 2BFAIR-frontend is divided in six pages:

- Evaluate: start page where the user supply the digital object identifier to start its FAIRness evaluation.
- Result: visual representation of the overall FAIRness result.
- Explorer: overview of the evaluation for each dimension. We define F, A, I, and R as FAIR dimensions.
- Details: details of the evaluation for principles, metrics, and tests.
- Glossary: presents the definition of the FAIR concepts used in the tool development.
- User Guide: explanations about it page and functionality available in the 2BFAIR-frontend.

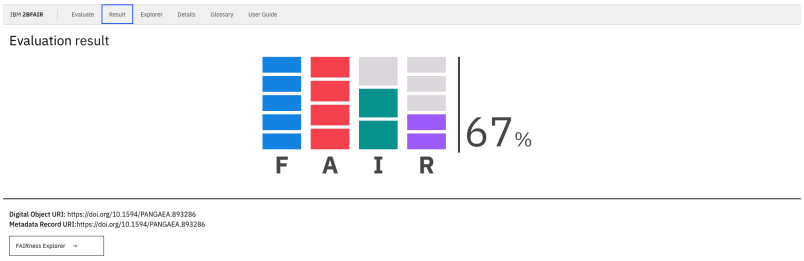
Evaluate

1. The page **Evaluate** is composed by two components:
   a. A text box to fill the digital object's identifier, which usually is a URI, URL, or GUID.
   b. A button to run the evaluation.

2. To start an evaluation fill the textbox with the digital object identifier and click on the button **Run**.

Result

1. The page **Result** is composed by three components:
   a. A badge which is a graphic representation of the overall FAIRness assessment.
   b. The URI that was filled as the digital object's identifier.
   c. A button to go to the Explorer page



2. Each badge's column represents the FAIRness evaluation result achieved by the digital object corresponding to a FAIR dimension. The number on the right of the badge represents the total score in percentage achieved by the digital object, i.e., it considers all evaluated FAIR dimensions.

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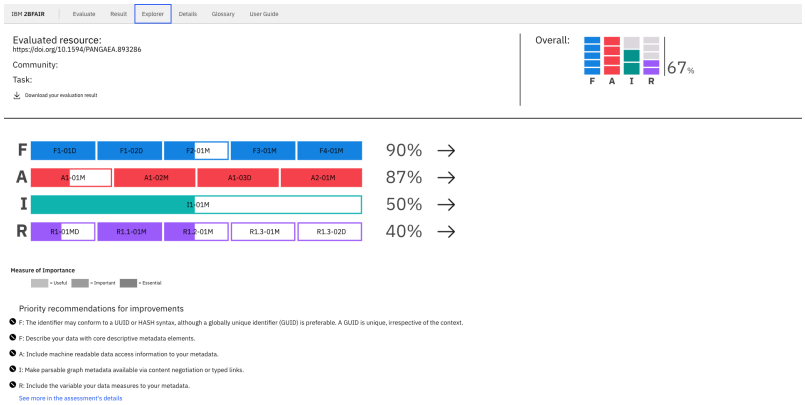
3. To learn more about your result, click on the button **FAIRness Explorer** to navigate to the page Explorer.

Explorer

1. The page **Explorer** is composed by 4 components:
   a. A header: presenting information about the evaluated object, a link to download the evaluation result, and the FAIRness badge.
   b. A graph representing the score in percentage achieved for each dimension with boxes to represent the result achieved for each evaluated metric for the dimension.
   c. A legend (below the graphic) that explains how importance of each metric is presented.
   d. A list of priority recommendations, i.e., the most important recommendation to improve the FAIRness of the digital object.

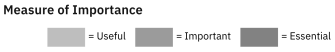


These components are detailed as follows.

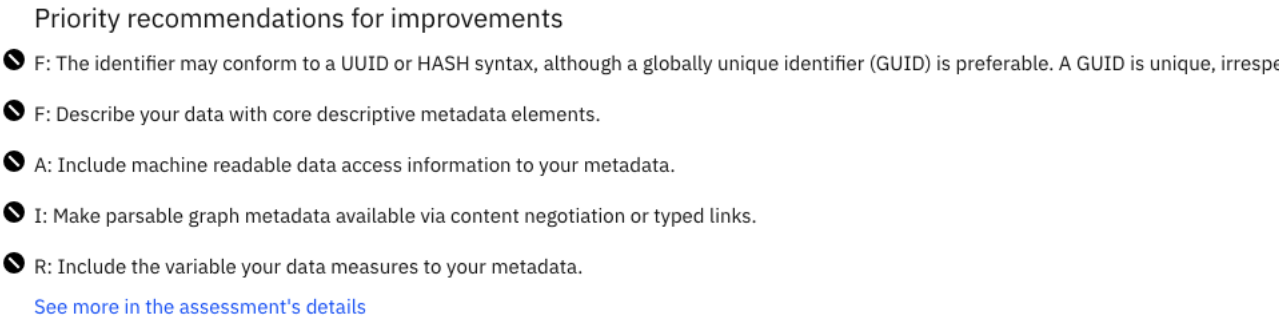
2. The header is composed by 3 components:
   a. The identifier of the evaluated resource.
   b. A link to download the FAIRness result in JSON format.
   c. The badge with the FAIRness result.

3. The graphic presents, for each dimension, the metrics used to evaluate the digital object presented as a rectangle and the score in percentage achieved by the Dimension evaluation. Next to each dimension there is an arrow that, if clicked, opens the details page in the section corresponding to dimension. Each rectangle depicts:
   a. The metric ID in the middle of the rectangle.
   b. The FAIRness result of the metric, which varies from 0 (the rectangle is not filled) to 1 (the rectangle is fully filled).
   c. The importance of the metric represented as three color tones.
   d. Even though the metric's score is 0, the border is presented to depict the metric importance.

4. The legend represents the importance of the metric. We are using the definition presented by the RDA FAIR Data Maturity Model which may be:
    a. **Essential:** The metric addresses an aspect with crucial importance to achieve FAIRness under most circumstances, i.e., the digital object will not be FAIR if it does not fulfill the metric.
    b. **Important:** The metric "addresses an aspect that might not be of the utmost importance under specific circumstances, but its satisfaction, if at all possible, would substantially increase FAIRness".
    c. **Useful:** The metric "addresses an aspect that is nice-to-have but is not necessarily indispensable".

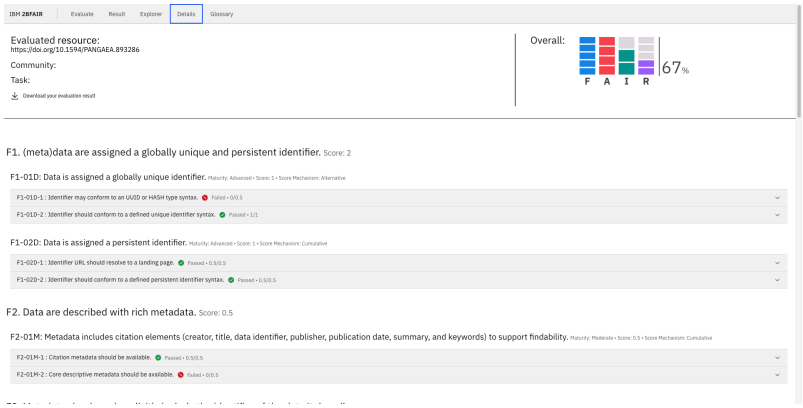


5. Priority recommendations shows the most important recommendations to be followed to improve the FAIRness level of the digital object. If there are more than **n** priorities, where n is defined in the 2BFAIR configuration, it is presented the link **See more in the assessment's details**. When the user click on this link, it opens the Details page in the dimension corresponding to the first recommendation.



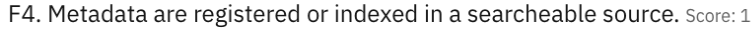
Details

1. The page **Details** is composed by 2 components:
    a. The same header as in the explorer page.
    b. An accordion with the evaluation details, which fields are explained as follows.



2. The accordion is divided into three instances:
    a. Principle
    b. Metrics
    c. Test

3. For each principle, it is presented:
    a. **Name**: the definition of the principle.
    b. **Score:** a value between 0 and 1 corresponding to the average of the scores of all principle's metrics score.



4. For each metric, it is presented:

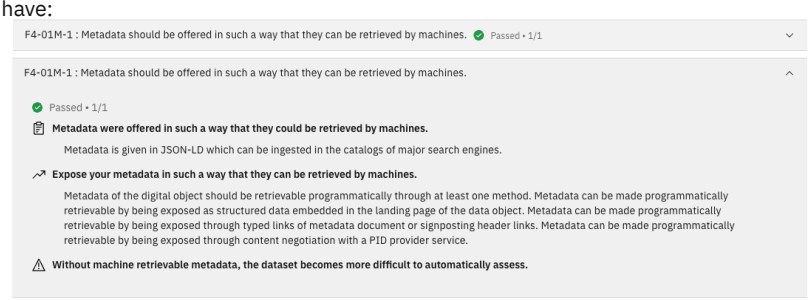
advanced being the highest.

c. **Score:** A value between 0 and 1 which represents the average score achieved by all the FAIRness tests of the metric.

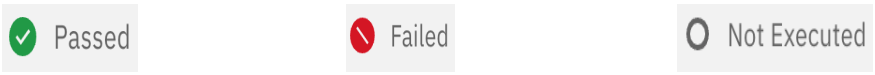
d. **Score Mechanism**: which definition is presented here, in the tool glossary.

F4-01M: Metadata are offered in such a way that they can be retrieved by machines. Maturity: Initial • Score: 1 • Score Mechanism: Cumulative

5. For each test we have:



a. **Status:** It can be **passed**, **failed** and **not executed**. The status is passed when the digital object passes in the test evaluation, and failed if not. The status is not executed when the test doesn't run because of missing requirements.



b. **Score:** A value between 0 and the maximum test score, which varies from test to test.

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c. **Results:** A summary of the test's result.

d. **Results details:** This field is optional and, when present, it provides details about the test execution.

Metadata were offered in such a way that they could be retrieved by machines.

Metadata is given in JSON-LD which can be ingested in the catalogs of major search engines.

e. **Recommendations:** Gives recommendations about what should be done to get a higher FAIRness score. It is presented even if the test passes.

f. **Recommendations details:** This field is optional and, when present, it provides details about the recommendation, e.g., steps about how to execute the improvement.

Expose your metadata in such a way that they can be retrieved by machines.

Metadata of the digital object should be retrievable programmatically through at least one method. Metadata can be made programmatically retrievable by being exposed as structured data embedded in the landing page of the data object. Metadata can be made programmatically retrievable by being exposed through typed links of metadata document or signposting header links. Metadata can be made programmatically retrievable by being exposed through content negotiation with a PID provider service.

g. **Losses:** It presents what is lose if the digital object doesn't pass the test.

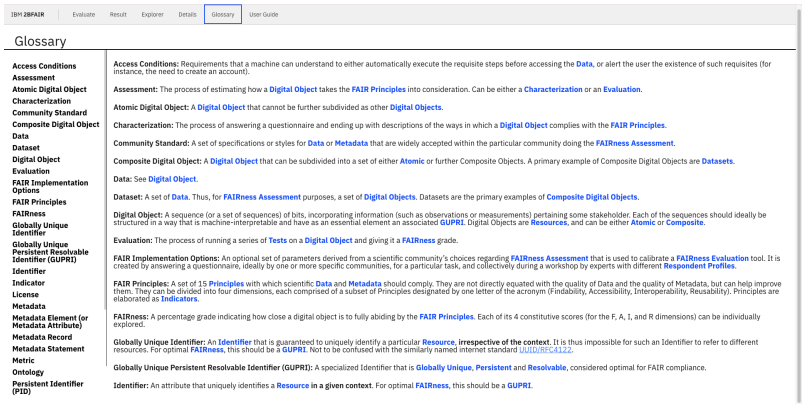
Without machine retrievable metadata, the dataset becomes more difficult to automatically assess.

Glossary

1. The page **Glossary** is composed by two components:

   a. The sidebar that allows to browse commonly used terms in the FAIR concepts.

   b. The definition of each term



2. We included links in all terms present in the glossary that appears on 2BFAIR's Web pages so that the user can access the Glossary by clicking on the word to access it definition.
3. We included also self-references on the Glossary page, to allow the navigate in the cross-terms used in the glossary.