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Report design and data visualization in ActivityInfo

Starting shortly, Please wait!

Presented by the ActivityInfo Team

All in one information management software for humanitarian and development operations

○ Track activities, outcomes
○ Beneficiary management
○ Surveys
○ Work offline/online

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Meet your instructors

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Outline

1   Data Preparation and Analysis Setup

2   Analysis tools in ActivityInfo

3   Visualization tools in ActivityInfo

4   Best practices and Q&A

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Data Preparation and Analysis Setup

Scenario

Crisis intervention model for conflict-affected households in Ethiopia

In response to conflict-related violence in Ethiopia, a Crisis Intervention Model has been implemented, integrating;

- a Vulnerability Assessment Tool to prioritize households in need of assistance.
    - The tool evaluates criteria including household size,
    - dependency ratios,
    - income loss duration,
    - injuries, displacement risk, and coping mechanisms.

Scores derived from these criteria categorize households into three vulnerability brackets, determining their eligibility for cash assistance. This model aims to effectively allocate resources and support to those most affected by conflict, ensuring assistance reaches those in dire need within Ethiopia's conflict-affected communities.

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Data model

Understand your data model

Reference Folder

Case workers: Contains names and contacts of case workers

Partners: Contains names of partners

Vulnerability Assessment Tool: contains details of households in need of assistance

Subform

Vulnerability score: details of head of households, dependencies, income situation, injuries, displacement risk, and coping mechanisms.

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Preparing data to generate analysis

Clarify

Clearly state your analysis **objective**.

Identify

Identify all required **inputs** for your analysis.

Map

Understand how your inputs **connect** to the final output.

Understand data model

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Analysis tools in ActivityInfo

Key features and functionalities for analysis

Analysis

Calculations
- Calculated Fields
- Calculated Measures
- Calculated Tables

Reports
- Pivot Table

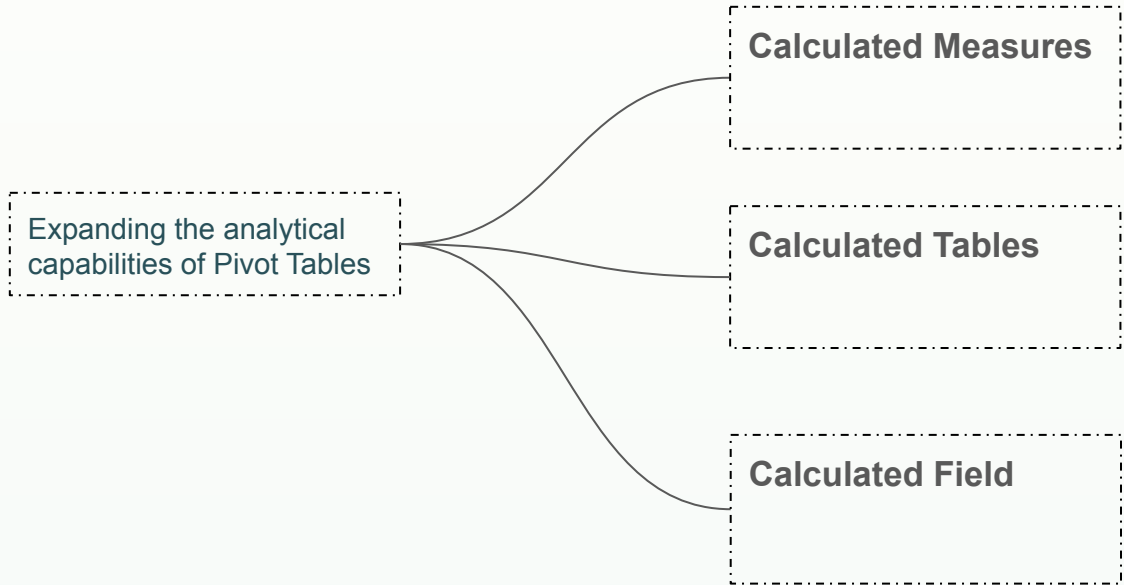ActivityInfo

Analysis using Activityinfo

Pivot table for analysis

- Designing Reports
- Select fields, apply Measures, Dimensions, and Statistics.
- Choose relevant fields from Forms, Subforms, or Reports.

Pivot tables allow you to…

- Summarize data
- Make comparisons
- Glean patterns and trends

….more efficiently

Expanding the analytical capabilities of Pivot Tables

Calculated Measures

Calculated Tables

Calculated Field

Pivot Table for Analysis in Activityinfo

Date	Drenthe	Flevoland	Friesland	Gelderland	Groningen	Limburg	Noord-Brabant
2020-	72	16	37	39	18	59	134
2020-	39	37	76	100	64	47	122
2020-	70	18	91	61	31	148	221
2020-	63	20			78	64	35
2020-	91				36	89	124
2020-	56	1	129	101	10	26	161
2020-	24	11	57	89	51	63	103
2020-06-12	81	9	61	35	23	51	125

Column dimension

Row dimension

Measures

Filters

Calculated fields in Activityinfo

✅ Automate for calculations: Saves time on repetitive calculations

✅ Accuracy: Minimize errors with automated processes.

✅ Real-time Updates: Instantly reflect changes.

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Calculated fields in form design and Pivot Tables

- add, subtract, multiply and divide indicators
- find the count, count distinct, average, median, max, min of indicators
- search in text values
- concatenate (merge) text values
- use date functions
- use logical functions
- use geographic functions
- and many more

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Calculated fields in Forms and Pivot Tables

What's the difference?

- ○ **Calculated fields in pivot table** reports enable users to perform additional calculations on the summarized data in pivot tables. These calculations can include basic arithmetic operations (e.g., sum, average, count) or more complex formulas.
- ○ These calculated fields are applied within the context of the pivot table report and are used to derive new insights or metrics from the existing data.
- ○ They do not modify the original data stored in the forms.
- ○ They can only be used as measures and not as dimensions
- ○ **Calculated fields in forms** allow users to automate the calculation of certain values based on predefined formulas or logic.
- ○ These calculated fields are typically used to compute values within individual forms.

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Calculated measures in Activityinfo

When you create a calculated measure, you <u>add a new measure to your data model</u> that goes beyond the fields already added to your forms.

Calculated measures are <u>not bound by row context</u>, thus opening up a range of new analytical possibilities.

When you create a Calculated Measure, you can:

✓ **Combine data** from different forms into one measure

✓ Use **different types of aggregations** together in the same measure

✓ **Aggregate data multiple times** at different levels

✓ Apply an **explicit filter** to run a calculation on a subset of data

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Calculated measures in Activityinfo

Aggregation Functions

- SUMX

- AVERAGEX

- COUNTX

- COUNTDISTINCTX

- MINX

- MAXX

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Calculated measures in Activityinfo

Indicator Evaluation: Use calculated measures to evaluate indicators across different dimensions or criteria, providing insights into the effectiveness of policies, programs, or interventions.For example, use calculated measures to assess the effectiveness of policies and laws regarding violence against women and girls (VAWG) by aggregating scores across different dimensions per country.

Monitoring and Reporting: Employ calculated measures to monitor and report on various metrics, such as the number of inquiries, participant understanding, or activity impact, enabling organizations to track progress and outcomes.

Evaluation of Training Programs: Utilize calculated measures to assess the effectiveness of training programs or educational initiatives by analyzing participant feedback and performance metrics.For example, to determine the percentage of participants who report an improved understanding of a specific subject after completing a training program.

Assessment of Cluster Activities: Implement calculated measures to assess the impact of activities within different thematic clusters or program areas, aiding in decision-making and resource allocation.Implement calculated measures to aggregate data from specific activities within different clusters (e.g., WASH, Education) to assess the overall impact of interventions in those areas.

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Calculated tables in Activityinfo

Misalignment between data collection and ideal analysis structures.

→
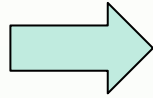
Transformation of raw data into a suitable analysis format.

→
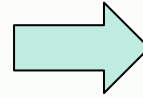
Explanation example 2
CALCULATED TABLE

Beneficiaries

Region

Date

service type

Count

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- **Calculated tables** enable the transformation of data from its original structure to a more analytically convenient format.
- During data collection, forms are designed for simplicity, and calculated tables aid in restructuring this data for easier analysis.
- Calculated Tables are generated by using a table function
  a. Table functions generally require you to
     i. **specify** the table containing the data you need and
     ii. **define** the way by which that data will be transformed

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Calculated tables in Activityinfo

Table functions in ActivityInfo

Function	Result
ADDCOLUMNS	new calculated columns added to an existing table
SELECTCOLUMNS	selected columns from a given table
FILTER	subset of a table that matches a specified condition
UNION	new table combined from two or more tables
SUMMARIZE	table with values summarized by specified groups
PIVOTLONGER	new table where columns are moved to rows

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Calculated tables in Activityinfo

Table functions in creating Calculated Tables

UNION

new table combined from two or more tables

Usage

`UNION(Table Expression, Table Expression2, Table Expression3)`

Food distribution

Activity	Beneficiary
Food distribution	Jay
Food distribution	June

Medical outreach

Activity	Beneficiary
Medical outreach	Jerry
Medical outreach	Jones

`UNION(Food distribution, Medical outreach)`

Activity	Beneficiary
Food distribution	Jay
Food distribution	June
Medical outreach	Jerry
Medical outreach	Jones

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Creating Calculated Tables

Table functions in ActivityInfo

ADDCOLUMNS

new calculated columns
added to an existing table

Usage
```
ADDCOLUMNS(Table Expression, "NewColumnName1",Expression1[,
"NewColumnName2", Expression2] ...)
```

Food distribution

Activity	Beneficiary
Food distribution	Jay
Food distribution	June

Beneficiaries

Beneficiary	Sex
Jay	Male
June	Female

```
ADDCOLUMNS(
        Food distribution, "Sex",
        LOOKUP(Beneficiary,Beneficiaries,
        Beneficiary,Sex)
        )
```

Activity	Beneficiary	Sex
Food distribution	Jay	Male
Food distribution	June	Female

Creating Calculated Tables

Table functions in ActivityInfo

SUMMARIZE

table with values summarized by specified groups

Activities

Activity	Beneficiary
Food distribution	Jay
Food distribution	June
Medical outreach	Jerry
Medical outreach	Jones

```
SUMMARIZE(
    Activities, Activity,
    "Beneficiaries",
    COUNTDISTINCT(Beneficiary)
    )
```

Activity	Beneficiaries
Food distribution	2
Medical outreach	2

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Demo

Real-time data Visualization

Key features and functionalities for visualization

Visualization

Charts
- Bar
- Line
- Pie

Map report

Report Layouts
- Single
- Notebook
- Dashboard

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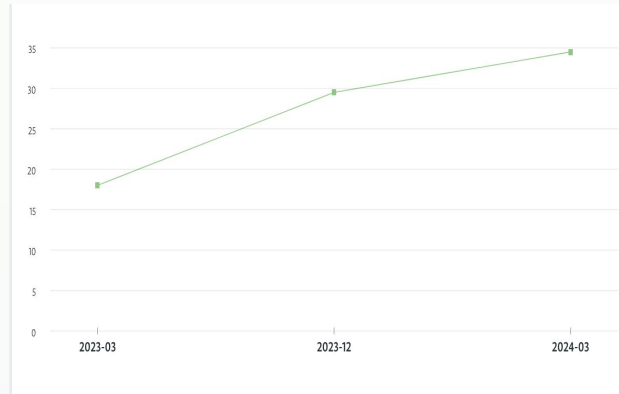# Real-time data visualization in Activityinfo

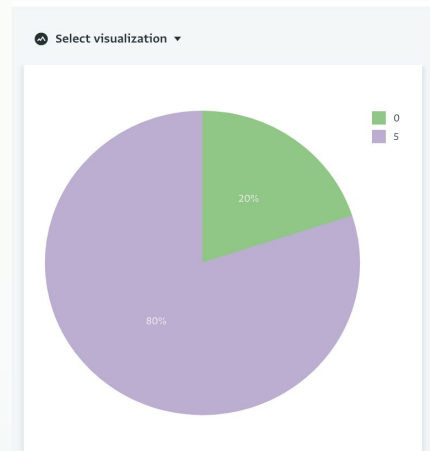## Create reports that connect to your data in real-time

Pivot tables and charts

Bar
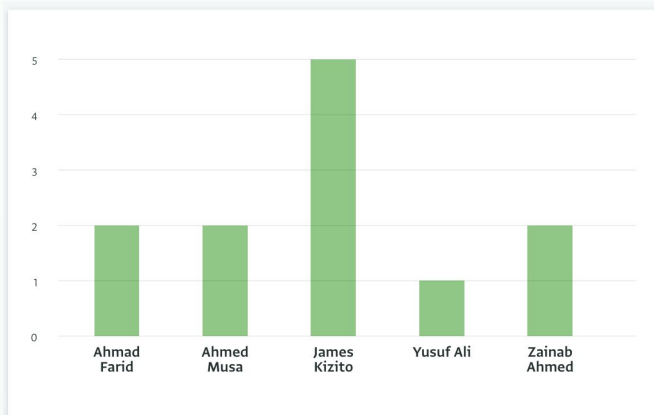
Lines

Pie

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Real-time data visualization in Activityinfo

Create reports that connect to your data in real-time
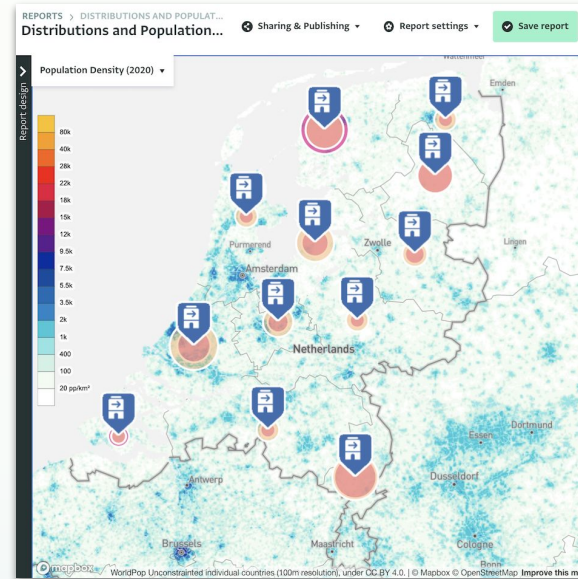
Report types

Maps can be built using:

- Geographic point field
- Referencing the built-in Geodatabase

Basemaps available:

- Light
- Street
- Satellite
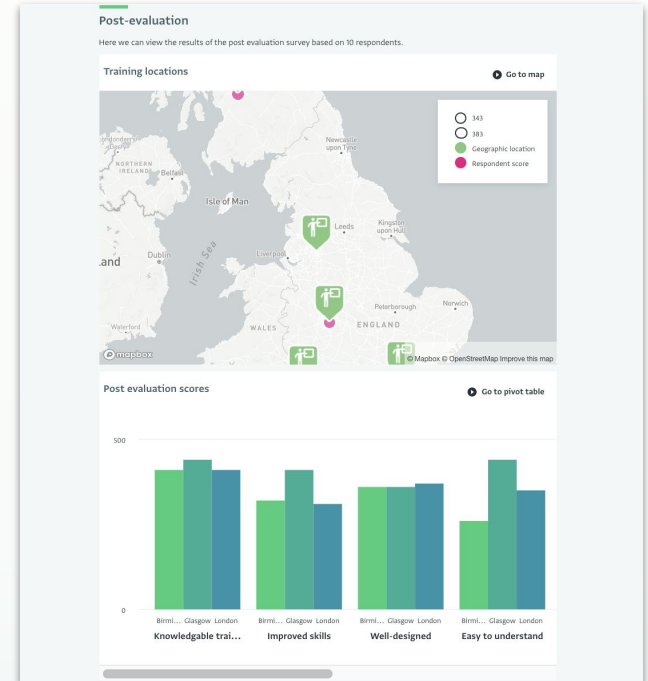- Population density (2020)

Maps

Real-time data visualization in Activityinfo

Combine multiple reports to form a cohesive narrative

Notebooks

A Notebook is a collection of tables, charts, and maps along with text and section headings. Notebooks allow administrators and data analysts to combine individual analysis or visualizations into a coherent narrative structure.

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Real-time data visualization in Activityinfo

Combine multiple reports to form a cohesive narrative

Dashboards

A Dashboard is a Report layout that combines tables, charts, maps, text, and section headings in a grid format.

The Dashboard layout enables administrators, data analysts, and decision-makers to merge individual analysis and visualizations to easily identify issues and problems at a glance.
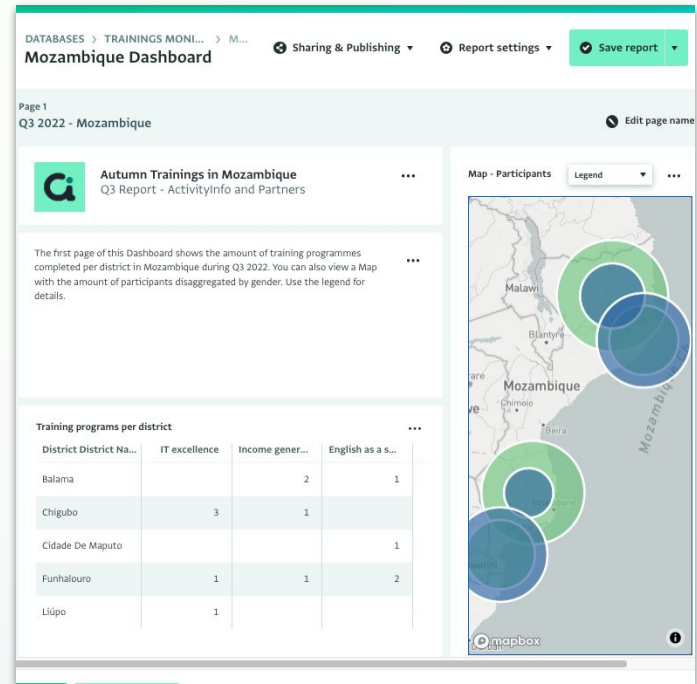
Demo

Best Practices

Understand Your Data and Objectives: Before diving into report design, ensure a clear understanding of the data you're working with and the objectives of your analysis. Identify key metrics, trends, and insights you want to communicate through your reports.

Simplify and Focus on Key Messages: Keep your reports clear, concise, and focused on conveying key messages. Avoid cluttering your visuals with unnecessary details. Use visual elements such as charts, graphs, and maps to highlight important trends and patterns effectively.

Design for Accessibility and User-Friendliness: Ensure that your reports are accessible and user-friendly for users with varying levels of knowledge and expertise.

Iterate and Solicit Feedback: Continuously iterate on your report designs based on feedback from users and stakeholders. Encourage users to provide input on the usability, relevance, and effectiveness of the reports.

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Questions?

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