



Project

Visualising the currents of change in Maji Ndogo

In this part of our journey, the waters of Maji Ndogo continue to narrate their tales, but this time through the lens of PowerBI. As we step into the realm of visual storytelling, the data collected unfolds in colours and shapes, painting the picture of gender disparities and the ripple effects it has within the community. Our task is to mould this data into compelling visuals that not only narrate the current scenario but also advocate for balanced participation in water collection.

As we traverse through the weeks, the narrative evolves. From unveiling gender dynamics at communal water points to sculpting relational data models, each week propels us into a deeper understanding of the power that visuals hold in driving change. We will use PowerBI to orchestrate insightful visuals that intentionally communicate ideas.

The challenges will demand a blend of creativity, analytical insight, and a keen eye for detail. As the guidance lessens, we are propelled to not only interpret data but also to narrate a story that resonates with the community and stakeholders alike. By the end of this voyage, we won't just be adept at creating engaging visuals and dashboards, but we'll hold a lantern of knowledge illuminating the path of how data visualisation is pivotal in decision-making and fostering transparency.

Assessments

This module includes **four summative assessments** related to the integrated project **Visualising the currents of change in Maji Ndogo**.

Each week there will be an MCQ **assessment** based on the **work completed** that week. The MCQ tests will require you to **report** key metrics from your visualisations, **interpret** trends and insights, and **modify** your **visualisations** to answer questions about subsets of data.

The **datasets** you'll need to complete the integrated project and compulsory MCQs can be downloaded from the **Download Additional Files** button on the integrated project **slides** on Athena.

Week	Content name	Context	Learning objectives and outcomes
Integrated project overview			
	Integrated project: Starting the journey [Slides]	This slide deck introduces the format of the integrated project in Visualising data. We set out some goals to achieve at the end of the project and outline how to reach them.	
1	Part 1 – Visualising Maji Ndogo's past		
	Integrated project: Visualising Maji Ndogo's past (Part 1) [Slides]	<p>In this first part of the integrated project, we are introduced to updated data concerning the gender composition of queues at shared water taps in Maji Ndogo, and some new crime-related data.</p> <p>We will create basic visuals, gradually diving into crime-related data, and some gender parity data related to water, illustrating the correlation between women queueing and being victims of crime. The primary goal is to visualise the national survey data results, with the aim of reporting it in the future.</p>	<ul style="list-style-type: none"> • Create and analyse line, scatter, and composition plots in PowerBI. • Show the ability to create custom maps using Shape maps in PowerBI. • Demonstrate the ability to filter and slice data in a visual. • Demonstrate an understanding of how filters interact on a Power BI page.
	Integrated project: Maji Ndogo part 1 [MCQ]	<p>This MCQ will test your understanding of basic visuals, and interpreting them in PowerBI.</p> <p>Number of questions: 10</p> <p>Revise the following lessons:</p> <ul style="list-style-type: none"> • An introduction to dashboards and reports • Creating visuals in PowerBI 	<ul style="list-style-type: none"> • Demonstrate an ability to interpret meaning from visuals.

2	Part 2 – Moulding data into visual stories in Maji Ndogo		
	Integrated project: Moulding data into visual stories in Maji Ndogo (Part 2) [Slides]	In this second part of the integrated project, we focus on data models. We'll import tables separately, clean data, and set up a working relational data model in PowerBI. We will also recreate our visuals with the new data model, and see how the new model affected our visuals. Our goal is to refine the visuals, customising text, colours, and fonts to make the visuals clear and simple.	<ul style="list-style-type: none">• Demonstrate the ability to transform data to clean and restructure.• Demonstrate how to use colours, themes, fonts, and layouts to format visuals.• Show an ability to use conditional formatting to customise visuals.• Demonstrate a comprehensive understanding of data models in PowerBI.• Demonstrate an ability to use cardinality and directionality to troubleshoot relationships.
	Integrated project: Maji Ndogo part 2 [MCQ]	<p>This MCQ will test your understanding of data models, and refine the visuals.</p> <p>Number of questions: 10</p> <p>Revise the following lessons:</p> <ul style="list-style-type: none">• Formatting visuals in Power BI• Data models in Power BI• Data transformations in Power BI	
3	Part 3 – Communicating our findings in Maji Ndogo		
	Integrated project: Communicating our findings in Maji Ndogo (Part 3) [Slides]	In this third part of the integrated project, we finalise our national survey report. We will use DAX to create measures and columns to enrich our data to ensure accurate and useful data representation on the dashboard. We put together all we have learned in the module to create the survey report.	<ul style="list-style-type: none">• Demonstrate a comprehensive understanding of DAX data types, operators, variables, and functions in PowerBI.• Demonstrate the ability to use DAX to create calculated columns and DAX functions to aggregate, count, and
	Integrated project: Maji Ndogo part 3 [MCQ]	This MCQ will test your understanding of visual communication using all of the tools now at our disposal.	

		<p>Number of questions: 10</p> <p>Revise the following lessons:</p> <ul style="list-style-type: none"> • Communicating our findings • Design for impactful communication • Calculated columns with DAX • DAX aggregations • Building reports and dashboards 	<p>transform data.</p> <ul style="list-style-type: none"> • Demonstrate the ability to create and use various types of measures. • Demonstrate the ability to create reports, including the use of filters, slicers, and cross-visual interactions.
4	Part 4 – Transparency in tracking Maji Ndogo's water funds		
	Integrated project: Transparency in tracking Maji Ndogo's water funds (Part 4) [Slides]	<p>In this final part of the project, we use all the skills acquired in the course to build a public dashboard. Our mission is to communicate with transparency: Where did the money go? We will track the total budget against project completion, monitor teams' performance, and compare budgeted versus actual costs to flag potential corruption, promoting transparency and accountability in addressing Maji Ndogo's water crisis.</p>	<ul style="list-style-type: none"> • Demonstrate a comprehensive understanding of data transformations, control flow, and data models. • Demonstrate the ability to use DAX to create calculated columns and DAX functions to aggregate, count, and transform. • Demonstrate the ability to create intuitive, impactful, and interactive reports, including the use of various types of visualisations, filters, slicers, cross-visual interactions, and good design principles.
	Integrated project: Maji Ndogo part 4 [MCQ]	<p>This MCQ will test your understanding of data modelling, data transformation, cleanup, data visualisation and finally, putting it all together to create a dashboard.</p> <p>Number of questions: 10</p> <p>Revise all lessons in this module.</p>	