

# Exam DA-100: Analyzing Data with Microsoft Power BI – Skills Measured

## Audience Profile

Data Analysts enable businesses to maximize the value of their data assets by using Microsoft Power BI. As a subject matter expert, data analysts are responsible for designing and building scalable data models, cleaning and transforming data, and enabling advanced analytic capabilities that provide meaningful business value through easy-to-comprehend data visualizations. Data analysts also collaborate with key stakeholders across verticals to deliver relevant insights based on identified business requirements.

The Data Analyst should have a fundamental understanding of data repositories and data processing both on-premises and in the cloud.

## Skills Measured

NOTE: The bullets that appear below each of the skills measured are intended to illustrate how we are assessing that skill. This list is not definitive or exhaustive.

NOTE: In most cases, exams do NOT cover preview features, and some features will only be added to an exam when they are GA (General Availability).

## Prepare the Data (20-25%)

### Get data from different data sources

- identify and connect to a data source
- change data source settings
- select a shared dataset or create a local dataset
- select a storage mode
- choose an appropriate query type
- identify query performance issues
- use the Common Data Service (CDS)
- use parameters

### Profile the data

- identify data anomalies
- examine data structures
- interrogate column properties

- interrogate data statistics

### **Clean, transform, and load the data**

- resolve inconsistencies, unexpected or null values, and data quality issues
- apply user-friendly value replacements
- identify and create appropriate keys for joins
- evaluate and transform column data types
- apply data shape transformations to table structures
- combine queries
- apply user-friendly naming conventions to columns and queries
- leverage Advanced Editor to modify Power Query M code
- configure data loading
- resolve data import errors

### **Model the Data (25-30%)**

#### **Design a data model**

- define the tables
- configure table and column properties
- define quick measures
- flatten out a parent-child hierarchy
- define role-playing dimensions
- define a relationship's cardinality and cross-filter direction
- design the data model to meet performance requirements
- resolve many-to-many relationships
- create a common date table
- define the appropriate level of data granularity

#### **Develop a data model**

- apply cross-filter direction and security filtering
- create calculated tables
- create hierarchies
- create calculated columns
- implement row-level security roles
- set up the Q&A feature

#### **Create measures by using DAX**

- use DAX to build complex measures
- use CALCULATE to manipulate filters
- implement Time Intelligence using DAX

- replace numeric columns with measures
- use basic statistical functions to enhance data
- create semi-additive measures

### **Optimize model performance**

- remove unnecessary rows and columns
- identify poorly performing measures, relationships, and visuals
- improve cardinality levels by changing data types
- improve cardinality levels through summarization
- create and manage aggregations

## **Visualize the Data (20-25%)**

### **Create reports**

- add visualization items to reports
- choose an appropriate visualization type
- format and configure visualizations
- import a custom visual
- configure conditional formatting
- apply slicing and filtering
- add an R or Python visual
- configure the report page
- design and configure for accessibility

### **Create dashboards**

- set mobile view
- manage tiles on a dashboard
- configure data alerts
- use the Q&A feature
- add a dashboard theme
- pin a live report page to a dashboard
- configure data classification

### **Enrich reports for usability**

- configure bookmarks
- create custom tooltips
- edit and configure interactions between visuals
- configure navigation for a report
- apply sorting
- configure Sync Slicers

- use the selection pane
- use drillthrough and cross filter
- drilldown into data using interactive visuals
- export report data

## **Analyze the Data (10-15%)**

### **Enhance reports to expose insights**

- apply conditional formatting
- apply slicers and filters
- perform top N analysis
- explore statistical summary
- use the Q&A visual
- add a Quick Insights result to a report
- create reference lines by using Analytics pane
- use the Play Axis feature of a visualization

### **Perform advanced analysis**

- identify outliers
- conduct Time Series analysis
- use groupings and binnings
- use the Key Influencers to explore dimensional variances
- use the decomposition tree visual to break down a measure
- apply AI Insights

## **Deploy and Maintain Deliverables (10-15%)**

### **Manage datasets**

- configure a dataset scheduled refresh
- configure row-level security group membership
- providing access to datasets
- configure incremental refresh settings
- endorse a dataset

### **Create and manage workspaces**

- create and configure a workspace
- recommend a development lifecycle strategy
- assign workspace roles
- configure and update a workspace app
- publish, import, or update assets in a workspace