**Objective 1**

**Connect and profile the data**

Your first objective is to connect to the source data files, conduct basic profiling and QA tasks, and familiarize yourself with the tables and fields you'll be working with.

**Task:**

1. Connect to the **sales**, **products**, **stores**, and **calendar** csv files
2. Review table columns, check for blank or null values, confirm that datatypes are accurately defined, and identify any primary and foreign keys
3. Take a moment to profile the data. How many transactions were recorded? How many stores do Hamleys Toys operate? What are the lowest and highest priced products?
4. Add calculated columns in the **calendar** table for ‘start of month’ and ‘start of week’

**Objective 2**

**Create a relational model**

Your second objective is to create a relational data model by defining relationships between fact and dimension tables, creating simple hierarchies, and adjusting model properties.

**Task**

1. Load the tables to the data model and create relationships from the **sales** table to the **products**, **stores**, and **calendar** tables
2. Confirm that you are following data modeling best practices. Your model should take the form of a star schema, with 1 to many relationships between fact and dimension tables
3. Create a date hierarchy containing the ‘start of month’, ‘start of week’, and ‘date’ fields
4. Hide all foreign keys in the **sales** table from the report view

**Objective 3**

**Add calculated measures & fields**

Your third objective is to enhance the data model and prepare for analysis by defining new measures and calculated fields.

**Task**

1. Create calculated columns in the **sales** table to pull in ‘cost’ and ‘price’ from the **products** table, then use those fields to calculate revenue and profit for each transaction
2. Create measures to calculate the count of orders (‘total orders’), sum of revenue (‘total revenue’) and sum of profit (‘total profit’)
3. **BONUS**: Define new measures to calculate total revenue and profit without referencing the calculated columns in the **sales** table

**Objective 4**

**Build an interactive report**

Your final objective is to visualize the data and create an interactive report to show orders, revenue and profit over time and by product category.

**Task**

1. Add KPI card visuals showing ‘total orders’, ‘total revenue’ and ‘total profit’ for the current month, along with monthly trends for each metric
2. Add a slicer to filter the report page by store location
3. Add a bar chart showing ‘total orders’ by product category, and a line chart showing ‘total revenue’ with the date hierarchy on the x-axis
4. Assemble the charts into a logical layout and adjust formatting, alignment and polish to finalize the report as you see fit

**Final Step**

**Final Project Question**

Answer the following question to validate your completed project.

What was the total revenue for Arts & Crafts products in February 2023?

Ans: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_