**Step 1 – Data Import & Modeling**

1. **Import Data:**
   * Use Power BI Desktop to import the three sheets from the provided Excel file.
2. **Data Relationships:**
   * Establish relationships based on Customer\_ID to ensure data integrity.
3. **Data Types:**
   * Verify and correct data types (e.g., Date as Date/Time, Amount as Currency, etc.).

**Step 2 – Basic DAX Measures**

1. **Creating Measures:**
   * Develop essential DAX measures such as:
     + Total Portfolio Value: Sum of Current\_Value from the Portfolio\_Data table.
     + Total Transactions: Sum of Amount from the Transactions table.
     + Average ROI: Average of the ROI column.

**Step 3 – Dashboard Creation**

1. **Visual Layout:**
   * Place the Fidelity logo in the top-left corner for brand consistency.
   * Opt for a single-page design or a maximum of two pages to maintain simplicity.
2. **Visuals:**
   * Key Cards: Display key metrics like Total Portfolio Value and Total Transactions.
   * Charts: Showcase portfolio distribution by Asset\_Type or Risk\_Level.
   * Trends: Present transaction trends over Date using line charts or tables.
3. **Filters & Slicers:**
   * Implement at least three slicers or filters (e.g., Location, Risk\_Tolerance, Date Range) to allow users to customize their views.

**Embedding Power BI Report in a Web Portal:**

Step 1: Obtain the report embed URL and embed token from Power BI service.

Step 2: Utilize Power BI Embedded SDK to integrate the report into your web application.

Step 3: Implement the embedding code in your web portal using JavaScript or an appropriate framework.

**User Authentication and Row-Level Security:**

User Authentication: Use Azure AD for seamless single sign-on (SSO) experience. Users must sign in with their Azure AD credentials to access the embedded report.

Row-Level Security (RLS): Define RLS roles in Power BI Desktop based on user attributes. Publish the report and configure security settings in the Power BI service to enforce RLS.

**Optimizing Data with Massive Amount of Rows:**

Data Aggregation: Use aggregation tables to summarize large datasets, reducing the volume of data processed during report rendering.

Incremental Refresh: Implement incremental data refresh to load only new or updated data, minimizing refresh times.

DirectQuery Mode: Use DirectQuery to connect live to the data source, ensuring that data is always current and reducing memory consumption in Power BI.

Data Compression: Leverage Power BI's VertiPaq engine for efficient data compression and improved performance.