**Project Scenario: Data Integration and Storage with Azure Data Factory and Azure Blob Storage**

You have been tasked with building a data integration pipeline to extract data from various sources, transform it, and load it into Azure Blob storage for storage and analysis. The data integration pipeline will be built using Azure Data Factory (ADF), a cloud-based data integration service provided by Microsoft Azure, and Azure Blob storage, a fully managed object storage service.

**Requirements:**

**Data Sources:** You will need to integrate data from the following sources into Azure Blob storage:

**CSV Files:** Data in CSV format from different sources that contain information about customers, products, orders, and sales.

**REST API:** Data from a REST API that provides real-time data about stock prices.

**Relational Database:** Data from a relational database (e.g., SQL Server, MySQL, etc.) that contains customer information.

**Data Integration Pipeline:** Design and implement a data integration pipeline using Azure Data Factory to extract data from the data sources, transform it, and load it into Azure Blob storage.

**Extract:** Use Azure Data Factory to connect to the data sources and extract data using relevant connectors such as Blob storage, REST API, and Database connectors.

**Transform:** Apply data transformations using Azure Data Factory data flow or mapping data flows to clean, validate, enrich, or aggregate the data. You can also use Azure Functions or Azure Logic Apps for custom data transformations.

**Load:** Load the transformed data into Azure Blob storage using the Blob storage connector in Azure Data Factory.

**Data Storage and Management:** Use Azure Blob storage to store and manage the data.

**Create Blob Containers:** Create appropriate Blob containers in Azure Blob storage to store different types of data (e.g., customers, products, orders, etc.).

**Blob Storage Configuration:** Configure Blob storage settings such as access tiers, retention policies, and blob lifecycle management to optimize storage costs and data management.

**Blob Storage Security:** Implement security measures such as shared access signatures, firewall rules, and authentication to ensure data security and compliance.

**Error Handling and Monitoring:** Implement error handling mechanisms and monitoring solutions to ensure the reliability and performance of the data integration pipeline.

**Error Handling**: Implement error handling mechanisms in Azure Data Factory such as retry policies, error logging, and alerting to handle errors and exceptions during data integration.

**Monitoring:** Set up monitoring solutions using Azure Monitor, Azure Log Analytics, or other relevant Azure services to monitor the health, performance, and status of the data integration pipeline and Blob storage.

**Data Processing and Transformation:** Apply data processing and transformation techniques using Azure Data Factory to clean, validate, enrich, and aggregate the data as per business requirements.

**Data Cleaning:** Use Azure Data Factory data flow or mapping data flows to clean and validate the data by applying data quality rules, filtering, and data validation techniques.

**Data Enrichment:** Use Azure Functions, Azure Logic Apps, or other relevant Azure services to enrich the data with additional information or perform data enrichment tasks such as data enrichment with external APIs, data lookup, or data enrichment with reference data.

**Data Aggregation:** Use Azure Data Factory data flow or mapping data flows to aggregate the data by applying data aggregation functions, grouping, or pivoting operations.

**Documentation:** Create documentation for the data integration pipeline, including design specifications, mapping documents, and user guides, to facilitate future maintenance and support.

**Deliverables:**

Azure Data Factory data integration pipeline that extracts, transforms, and loads data from the data sources into Azure Blob storage.

Azure Blob storage containers configured with appropriate settings for data storage and management.

Error handling mechanisms and monitoring solutions implemented for the data integration pipeline