Custom excel functions

Private equity firm

Built custom Excel function that simplifies financial reporting for a client by leveraging Power BI REST API and Azure Functions, providing real-time data analysis.

Custom excel functions for private equity firm

Situation

- Client was facing challenges in manually compiling financial reports for their funds and portfolio companies, and needed a solution that could streamline the reporting process and provide real-time insights into the financial performance metrics
- Partnered with the client to build a custom Excel function which provides flexibility to the users to create custom financials reports using key financial metrics and parameters
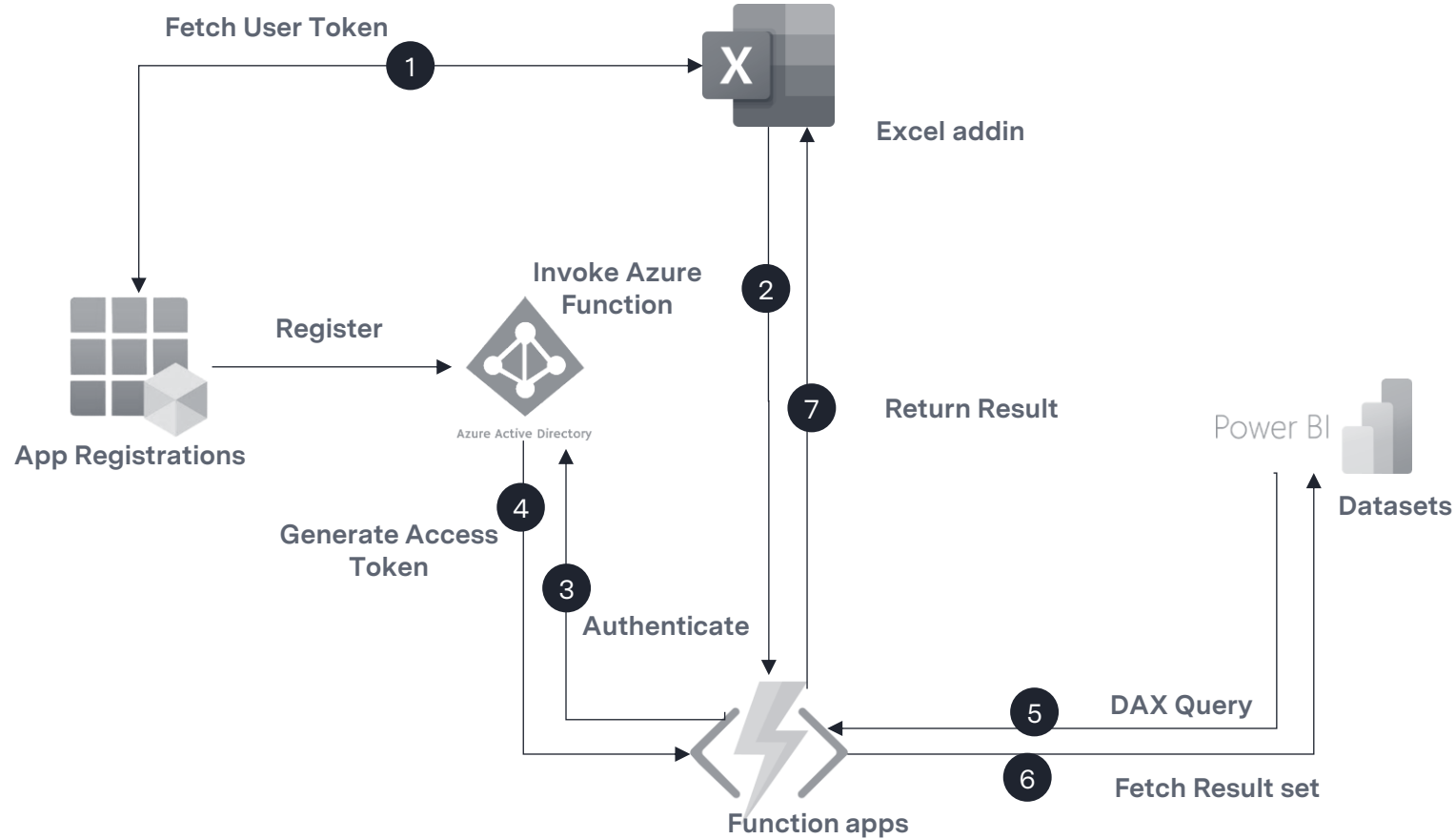
Accordion Value Add

- Built the custom Excel Add-In which simplified creating custom financial reports and allowed real-time insights into key performance metrics
- The Add-In leverages the Power BI REST API and Azure Functions to establish a connection to the data models on Power BI, capture user requests from Excel, convert them to DAX queries, and retrieve results from the dataset
- Developed a robust batch request process which allowed sending large number of requests to REST API with minimal downtime by overcoming the restrictions set by Power BI REST API, which limits the number of requests per minute to 120 and the number of rows per query request to 100,000

Impact

- Provided self-service analytics capabilities into the fund and portfolio performance by creating custom financial reports and provided flexibility to stakeholders to extract essential data as per requirements
- 80% reduction in person-hours by directly fetching key metric values from data models via Power BI REST API to generate financial reports
- Significant cost saving (~$50k per report) in generating templatized automated reports

Customer excel function – Excel add-in architecture

User Token: Function call from Excel fetches user token from the app that is registered within Azure Active Directory

Azure Function: Azure Function acts as a webhook and receives HTTP requests from Excel

Authenticate: Client credentials are authenticated using AAD/User Principle/Service Principle

Access Token: Access token is retrieved for the Power BI REST API and leveraged to make API calls to the Power BI service

Query: Azure Function converts user input parameters to a DAX Query and queries Power BI Dataset leveraging Power BI REST API

Fetch: The result set is returned by the dataset to the Azure Function

Return: Azure Function returns the result to Excel along with cell references

Exhibit – Custom excel function

Custom function input parameters

Leverages all native Excel functionalities of cell references