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LearnAI-KnowledgeMiningBootcamp

Learn to build an enterprise scale intelligent search solution for searching business documents using Microsoft Azure and Cognitive Search

Knowledge Mining

Knowledge Mining Bootcamp - Build a Cognitive Search Solution for business documents using Microsoft AI Platform

About this course

In this course, you will create an enterprise search solution by applying knowledge mining to business documents like contracts, memos, presentations and images. You will use Microsoft Azure AI technology to extract insights from unstructured data and expose the results in a Bot interface.

This training is two days long, but you can compress the duration with alternative agendas.

Goals

At the end of this training you will have learned:

- **What** Azure Cognitive Search is
- **How** to implement a Cognitive Search Solution
- **Why** this technology can be useful for any company
- **When** to use this solution for demos, POCs and other business scenarios

The hands-on labs will teach you how to use Microsoft Azure Search combined with Microsoft Cognitive Services for entity recognition, image analysis, text translation and indexed search on enterprise business documents. This approach uses Artificial Intelligence to create an advanced search experience.

While this course focuses on Azure Cognitive Search capabilities, an in-depth course on building Bots and integrating various Azure Cognitive Services is available here - Azure Cognitive Services Bootcamp.

In this course we will cover these key concepts:

1. Fundamentals of Azure Search and its capabilities

2. Microsoft Cognitive Search and its key business scenarios

3. Building an enrichment data pipeline for search using predefined and custom skillsets:

   - Text skills like entity recognition, language detection, text manipulation and key phrase extraction
   - Image skills like OCR
   - Content moderation skills to detect documents with incompliant content

4. Use the enriched data for an advanced search experience for business documents within an enterprise.

5. Expose the knowledge mining solution using a bot interface for document search and consumption.

Architecture
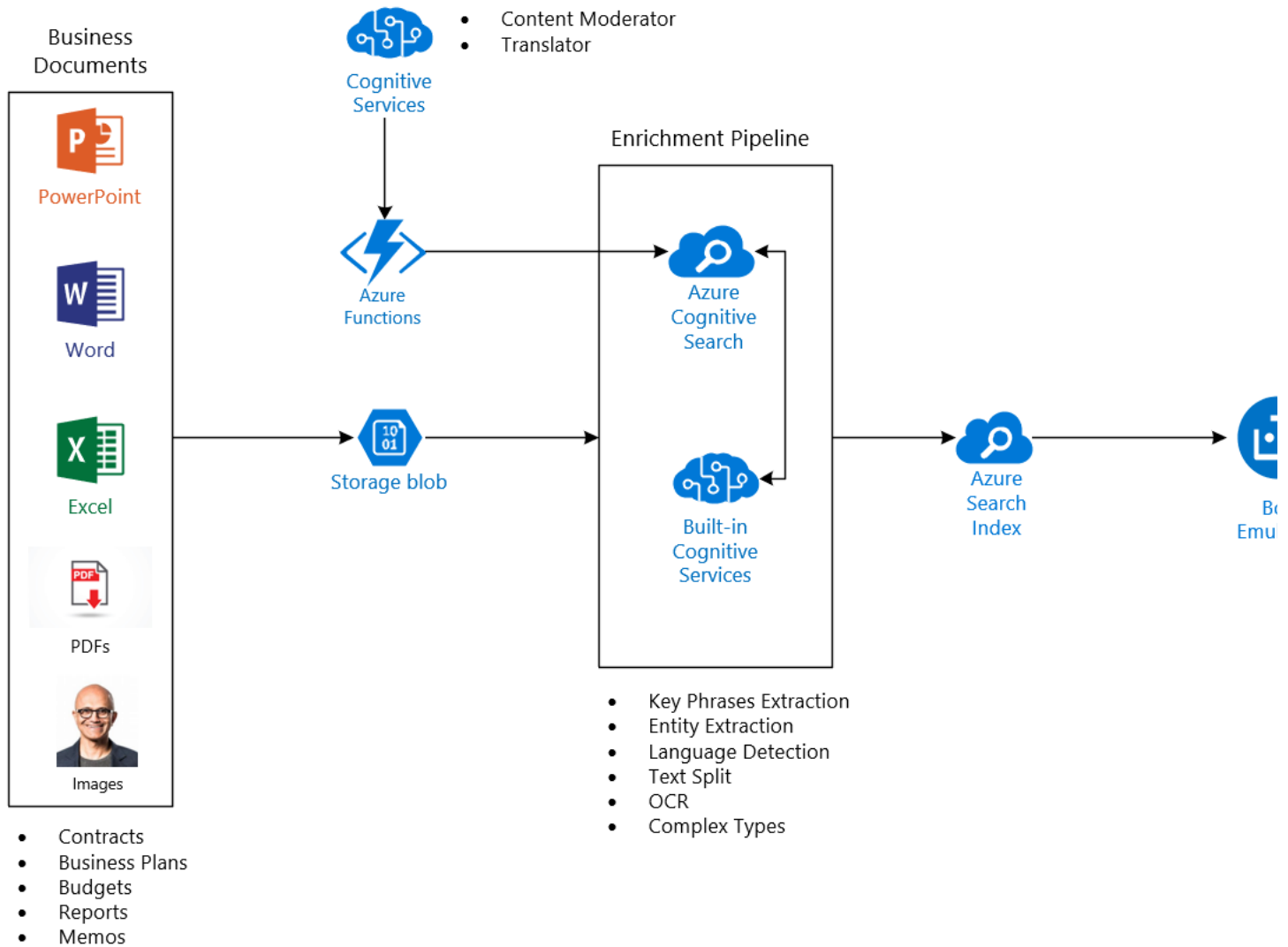
Knowledge Mining Solution for Business Documents

Data Sources   **Ingest**   **Prepare**   **Analyze**   **Pu**

Business Documents
- PowerPoint
- Word
- Excel
- PDFs
- Images

Cognitive Services
- Content Moderator
- Translator

Azure Functions

Enrichment Pipeline

Storage blob

Azure Cognitive Search

Built-in Cognitive Services

Azure Search Index

- Key Phrases Extraction
- Entity Extraction
- Language Detection
- Text Split
- OCR
- Complex Types

- Contracts
- Business Plans
- Budgets
- Reports
- Memos

Technologies Covered

Conversational AI	Prebuilt AI								Data Storage and Wrangling						
Bots	Cognitive Services							Cognitive Search							
Bots Framework v4	Custom Vision	Content Moderator	LUIS	Bing Search	Speech	Translate	Dispatch Tool	Azure Search	Cosmos DB	SQL/ Azure SQL DB	SQL/Azure SQL DW	Azure Data Lake	Azure Data Bricks	Azure Dataprep SDK	Others
x	x	x				x		x							Azure blobs

Industry application

Intelligent search is relevant to many major industries. Some are listed below.

1. Retail and health care industries employ chatbots with advanced multi-language support capabilities to service their customers.

2. Retail, Housing and Automotive industries for sales/listing.

3. Law firms and legal departments can use this technology to enforce compliance or improve search capabilities.

Pre-requisites

1. Fundamental working knowledge of Azure Portal, Azure Functions and Azure Search
2. Familiarity with Visual Studio and minimum C# knowledge
3. Familiarity with Azure Bots and Microsoft Bot Framework v4
4. Familiarity with Postman

If you do not have any of the above pre-requisites, please find below links

1. *To Read (10 minutes):* Visual Studio Tutorial
2. *To Read (8 minutes):* Azure Bot Service Overview
3. *To Read (4 minutes):* Azure Functions Overview
4. *To Read (10 minutes):* Azure Search Overview
5. *To Read (7 minutes):* Postman Tutorial
6. *To Do (30 minutes):* C# Quickstart

Pre-Setup before you attend the class Mandatory

1. *To Create:* You need a Microsoft Azure account to create the services we use in our solution. You can create a free account, use your MSDN account or any other subscription where you have permission to create services
2. *To Install:* Visual Studio 2017 version 15.5 or later, *including the Azure development workload*
3. *To Install:* Postman. To call the labs APIs
4. *To Install:* Bot Emulator, use the '.exe' file from release 4.1.0 or newer
5. *To Install:* Git for Windows or any other git app you prefer

Course Details

Primary Audience: Azure AI Developers, Solution Architects. Secondary Audience: Any professional interested in learning AI.

Level

This content is designed as an intermediate to advanced level course for AI developers and/or architects.

Type

This course, in its full form, is designed to be taught in-person but you can also use the materials in a self-paced fashion. There are assignments and multiple reference links throughout the materials that support the concepts and skills you will learn.

Length

Full Course classroom training: 16 hours

Related LearnAI Courses

Azure Cognitive Services Bootcamp
Cognitive Search Workshop
Designing and Architecting Intelligent Agents

Course Modules

1. Introduction – **Presentation** overview of Azure Search, Cognitive Search, business scenarios and industry specific applications.

2. Architecture – **Solution Architecture** for building enterprise search solution.

3. Lab 1 - Azure - **Environment Creation**

4. Lab 2 - Azure Search - **Indexing Blob Storage**

5. Lab 3 - Cognitive Search – **Text Skills**

6. Lab 4 - Cognitive Search – **Image Skills**

7. Lab 5 - Cognitive Search – **Custom Skills**

8. Lab 6 - Build and Integrate a **Bot** with Cognitive Search API

9. Lab 7 - **Architecture Design Session + Hackathon**

   Note: Once you've completed the labs, we recommend deleting the resource group (and all the resources in it) to avoid incurring extra charges.

Contact

Contact us: LearnAI@microsoft.com and http://aka.ms/LearnAI-GitHub

Certifications

The LearnAI team had intense participation in the creation of the following new Microsoft certifications and its required tests:

- Azure Data Engineer
  - DP-200: Implementing an Azure Data Solution
  - DP-201: Designing an Azure Data Solutions
- Azure AI Engineer
  - AI-100: Designing and Implementing an Azure AI Solution
- Azure Data Scientist
  - DP-100: Designing and Implementing a Data Science Solution on Azure

Cognitive Services Compliance

Click here to learn how Microsoft Cognitive Services handle your data.

Q&A and Survey

Please help the LearnAI Team with questions and feedback about this training.

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