



Microsoft Azure AI Fundamentals: Document Intelligence and Knowledge Mining





Agenda

- Azure AI Document Intelligence
- Azure Cognitive Search

Learning Objectives

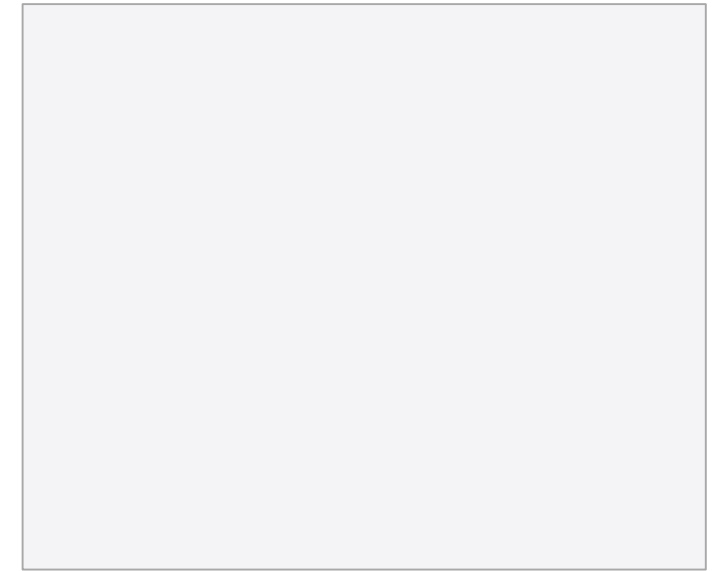
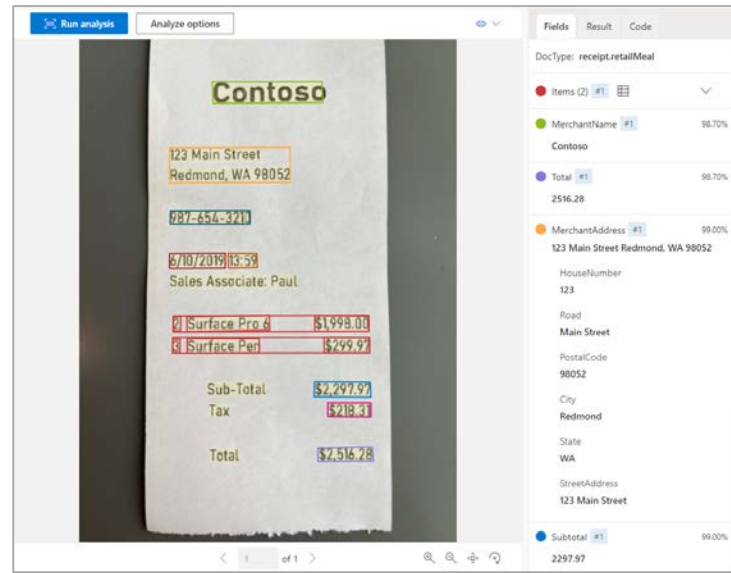
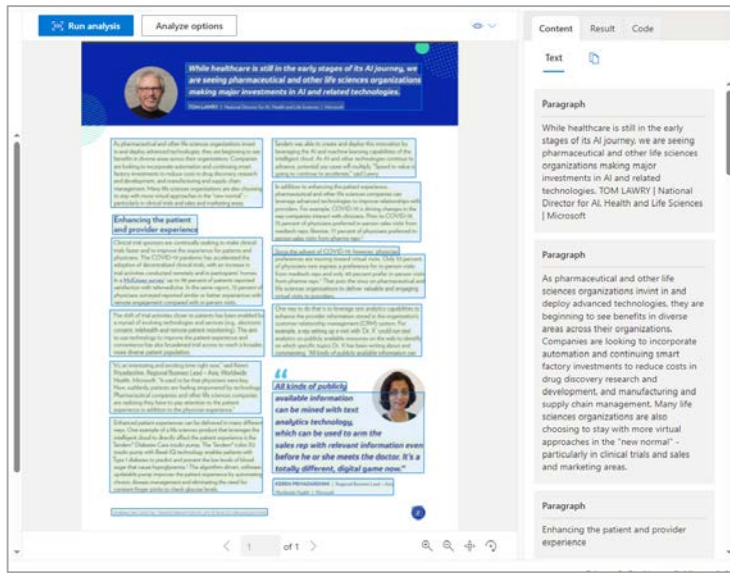
After completing this module, you will be able to:

- 1** Understand what Azure AI Document Intelligence does, and why organizations use it.
- 2** Describe knowledge mining and the problems it solves.

Azure AI Document Intelligence



AI Document Intelligence services



- Document analysis

- Returns structured data representations.
- Regions of interest and relationships.
- Configure **Analyze options** for free and chargeable analysis

- Prebuilt models

- Invoices
- Receipts
- ID
- Recognizes and extracts key-value pairs.

- Custom models

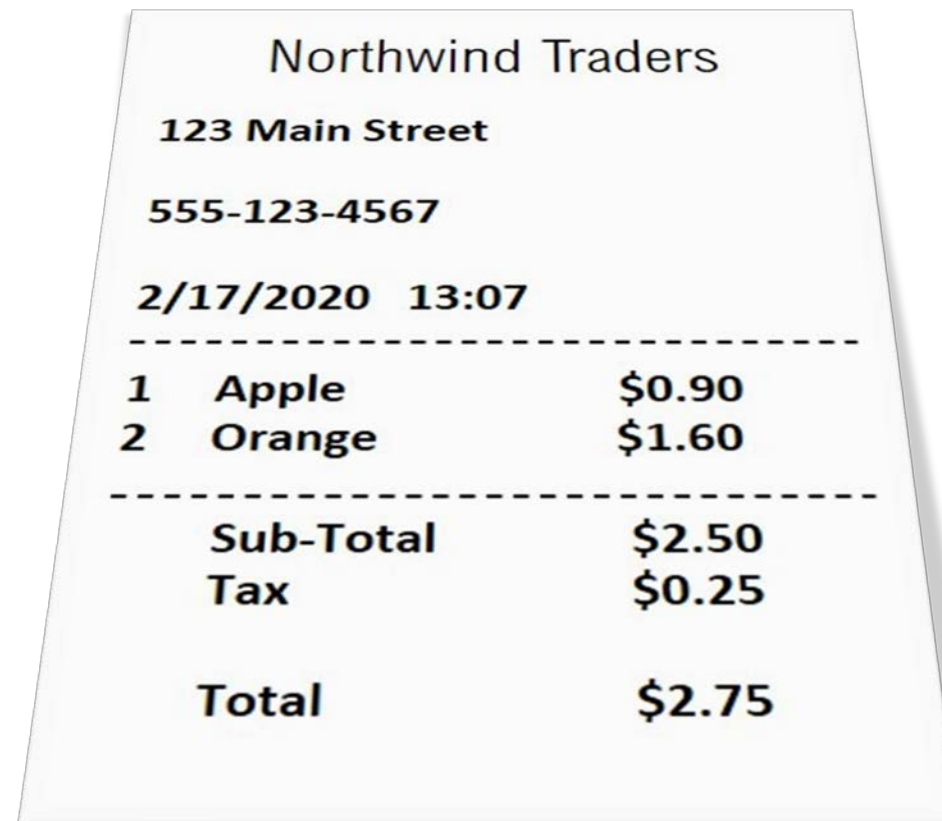
- Train models with at least five sample data.
- Identify fields of interest to your organization.

Analyzing forms with the *Document Intelligence* service

Extract information from scanned forms in image or PDF format.

- Use the pre-trained models for common document types, such as invoices, receipts, IDs, etc.
- Train a custom model using your own forms.

Models perform *semantic recognition* of form fields – not just text extraction.



Northwind Traders
123 Main Street
555-123-4567
2/17/2020 13:07

1	Apple	\$0.90
2	Orange	\$1.60

Sub-Total	\$2.50
Tax	\$0.25
Total	\$2.75

Document Intelligence Studio

Getting started with Document Intelligence

- Using a **no code** approach you can explore the functionality using samples and your own documents.
- First - **create a resource**
 - Document Intelligence resource
 - AI services resource
- Then **Enable** the resource in Document Intelligence Studio.
- **Getting Started** page: select a model to try.

Azure AI | Document Intelligence Studio


Form Recognizer Studio

Get started with Document Intelligence Studio

Extract text, key-value pairs, tables, and structures from forms and documents using common layouts and prebuilt models, or create your own custom models. [Learn more](#)

Document analysis


Extract text, tables, structure, key-value pairs, and named entities from documents.



Read

Extract printed and handwritten text along with barcodes, formulas and font styles from images and documents.


[Try it out](#)



Layout

Extract tables, check boxes, and text from forms and documents.

[Try it out](#)




General documents

Extract key value pairs and structure like tables and selection marks from any form or document.

[Try it out](#)

Prebuilt models


Extract data from unique document types using the following prebuilt models.



Invoice

Extract data from invoices, including line items, totals, and tax information.


[Try it out](#)



Receipt

Extract data from receipts, including items, prices, and totals.


[Try it out](#)



Form

Extract data from forms, including text, checkboxes, and radio buttons.

[Try it out](#)



Card

Extract data from cards, including names, addresses, and contact information.

[Try it out](#)

Exercise: Extract form data in Document Intelligence Studio



In this exercise, you will explore the **Azure AI Document Intelligence** service to analyze a receipt.

1. Use the hosted environment and Azure credentials provided for this exercise.
2. The instructions are also available on Learn: <https://aka.ms/ai900-document-intelligence>

Azure Cognitive Search



What is knowledge mining?

Organizations have a lot of content

- Data is *locked away* in documents, PDFs, hand-written notes, etc.
- Time consuming and labour intensive to find data.
- Knowledge mining finds insights – *at scale*.
- **Azure Cognitive Search** is Azure's AI-powered knowledge mining platform.
- Solutions provide access through, for example:
 - Search, eg bots to answer questions
 - Dashboards
 - Business applications
 - Availability for further analysis





Azure Cognitive Search solutions



• Ingest

- Azure Blob Storage containers
- Azure SQL Database Documents in Cosmos DB
- Azure Data Lake Storage Gen2
- Azure Table Storage



• AI enrichment & index

- AI enables deeper understanding
 - Extract information & patterns
- Azure AI services
 - Vision, Natural Language Processing, etc.
- Indexing makes content searchable



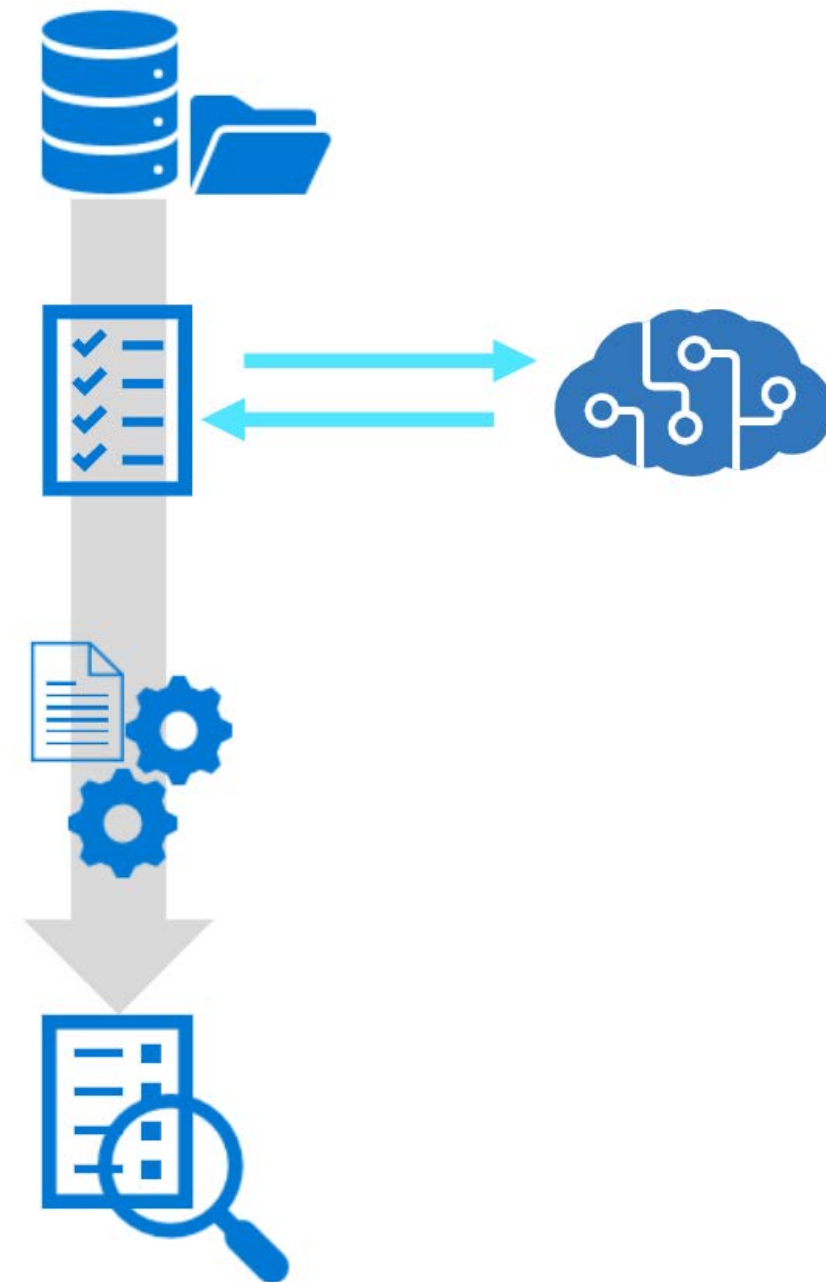
• Explore

- Search performed on indexes
- Results used:
 - Within applications
 - Create data visualizations

AI enrichment

In Azure Cognitive Search

- AI enrichment makes content more useful for search purposes.
- Enriched content is created by *skillsets* such as
 - Recognize entities in text
 - Translate text
 - Evaluate sentiment
- A *skillset* produces enriched *documents*
 - Consumed during *indexing*
 - Projected to a *knowledge store*
- Serialized data is passed to the search engine for indexing.
- Knowledge store
 - *Data sink* created by a Cognitive Search enrichment pipeline.





Demo: Explore an Azure Cognitive Search index (UI)



In this demo, you will see how AI enrichments add to search capabilities.

1. Follow along on the exercise page at: <https://aka.ms/ai900-ai-search>

Knowledge check



Which problem is Document Intelligence designed to solve?

- ☐ Reading text from large volumes of scanned documents
- ☒ Extracting key value pairs from forms, for input into a database
- ☐ Extracting positive and negative sentiment from scanned images

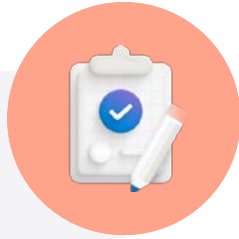
You want to extract information and perform semantic recognition on the extracted fields. What service would you use?

- ☐ AI Vision
- ☐ Optical Character Recognition
- ☒ AI Document Intelligence

Which two steps are part of building a Cognitive Search solution?

- ☐ Creating databases of structured data, and indexing the data
- ☒ AI enrichment and indexing
- ☐ Identifying necessary skillsets to build indexes

Summary



Azure AI Document Intelligence

- What is AI Document Intelligence?
- Three types of AI Document Intelligence services
- Analyzing specific forms with the AI Document Intelligence service

Azure Cognitive Search

- What is knowledge mining?
- Three step process to creating a knowledge store with Azure Cognitive Search



References

Read more about:

- Fundamentals of Azure AI Document Intelligence
- Fundamentals of Knowledge Mining with Azure Cognitive Search

Through the content on Learn: [Microsoft Azure AI Fundamentals: Document Intelligence and Knowledge Mining - Training | Microsoft Learn](#)



