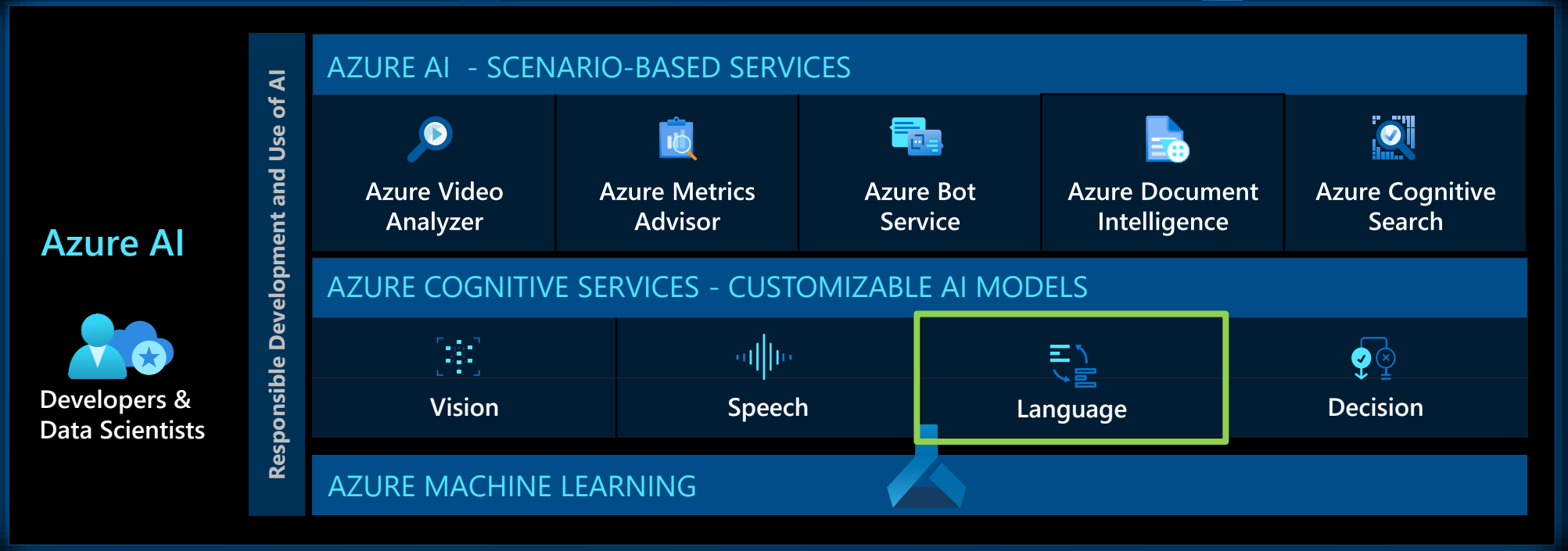
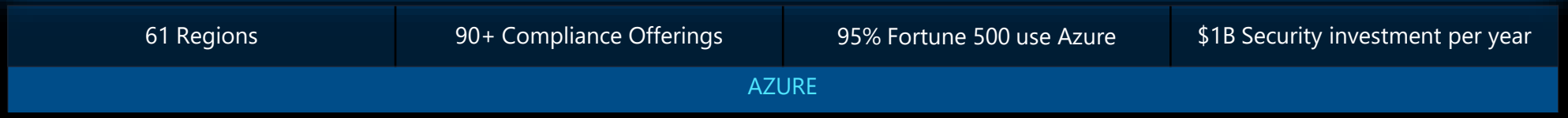
Microsoft Azure

Azure AI:
Language Service Overview

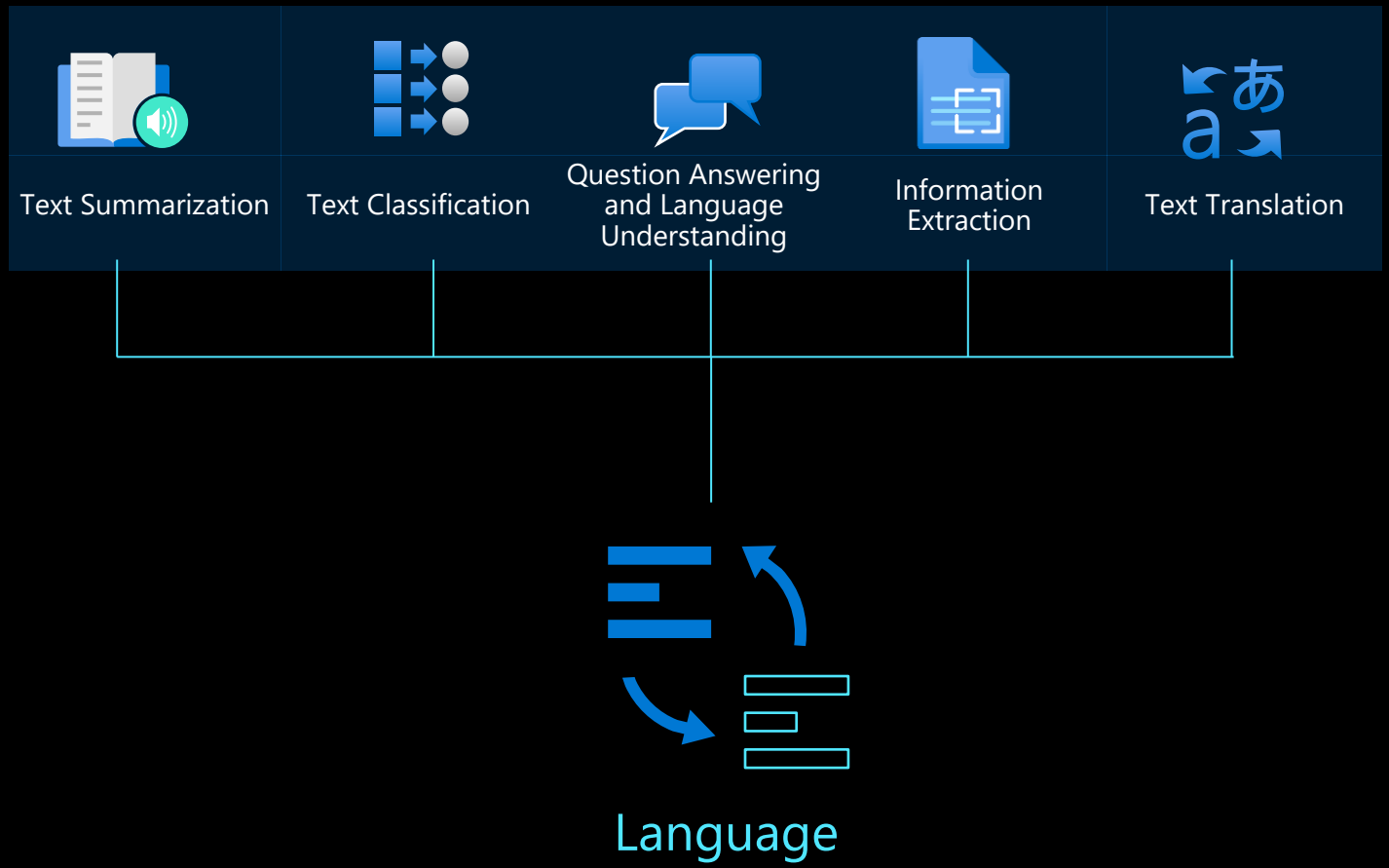
Azure AI


Microsoft SaaS Solutions
ISV Product
SI Solution
Customer Implementation
Customer & Partner Solutions


Azure AI
Developers & Data Scientists
Responsible Development and Use of AI
AZURE AI - SCENARIO-BASED SERVICES
Azure Video Analyzer
Azure Metrics Advisor
Azure Bot Service
Azure Document Intelligence
Azure Cognitive Search
AZURE COGNITIVE SERVICES - CUSTOMIZABLE AI MODELS
Vision
Speech
Language
Decision
AZURE MACHINE LEARNING


61 Regions
90+ Compliance Offerings
95% Fortune 500 use Azure
$1B Security investment per year
AZURE

Cognitive Services Language Pillar



Language Service Overview

Cloud-based service that provides Natural Language Processing (NLP) features for understanding and analyzing text.

Includes the web-based **Language Studio** as well as REST APIs and client libraries.

Offers two types of features

- **Preconfigured** (non-customizable AI models)
- **Customizable** (you can train the AI model)

Language Service Features

Information Extraction

Text Classification

Question Answering and Language Understanding

Text Summarization

https://learn.microsoft.com/en-us/azure/ai-services/language-service/overview

Language Service Features

Information Extraction

Named Entity Recognition (NER)

Identifies and categorizes entities in unstructured text.

- **Prebuilt model** supports Person Names, Person Types (roles), Locations (countries, cities, structures, geographical features), Organizations, Events (cultural, natural, sports), Products, Skills, Addresses, Phone Numbers, Emails, URLs, IP addresses, Data & Time, and Quantities.
- **Custom model** trained on your data enables extraction of any type of entity.

Personal Identifying Information (PII) Detection

Identifies, categorizes and redacts sensitive information in unstructured text (e.g. phone numbers, email addresses and forms of identification).

Two shapes:

- **PII** – works on unstructured text
- **Conversation PII** – tailored model to work on conversation transcription

Personal Health Information (PHI) Detection

Extracts and labels relevant medical information from a variety of unstructured texts such as doctor's notes, discharge summaries, clinical documents and electronic health records.

- **Prebuild model** supports Anatomy (body structure), Demographics (age, gender, ethnicity), Examinations, Allergens, Course, Direction, Frequency, Time, Measurements, Relational Operators, Genomics (variants, genes or proteins, mutation types), Medical Conditions, Medications, Treatments, Social (family relations, employment, living status, substance use)
- **Custom model** trained on your data enables extraction of any type of entity.

Key Phrase Extraction

Identifies the main concepts in an unstructured text, returning a list of bullets.

Language Service Features

Text Classification

Language Detection

Detects the language a document is written in and returns a language code for a wide range of languages, variants, dialects and some regional languages.

Sentiment Analysis and Opinion Mining

Analyses text to mine text for clues about positive or negative sentiment and associate them with specific aspects of the text.

- **Sentiment analysis** provides sentiment labels (positive, negative or neutral) at a sentence and document level.
- **Opinion mining** provides more granular information about the opinions related to words.

Custom Text Classification

Allows you to build custom models for text classification tasks. Supports **single label classification** (single class for each document) or **multi label classification** (a document can be classified with multiple classes).

Custom Sentiment Analysis

Allows you to build custom models for sentiment analysis, trained on your own data.

Language Service Features

Question Answering and Language Understanding

Question Answering

Allows you to create a natural conversation layer over your data. Commonly used to build conversational client applications such as chat bots. Uses a **prebuilt** model to get a response by querying a text passage without using a knowledge base.

Custom Question Answering

Customizable version of the Question Answering feature that allows knowledge base management, defining synonyms and metadata, question suggestions and more.

- Uses a **layered ranking** approach with data stored in Azure Cognitive Search, which also serves as the first ranking layer.
- Supports **multi-turn prompts** and **active learning** to improve answer quality.

Conversational Language Understanding (CLU)

Enables users to build custom natural language understanding models do predict the overall intention of an incoming utterance and extract important information from it. Commonly used to build end-to-end conversational bots.

Orchestration Workflow

Enables users to build orchestration models to connect Conversational Language Understanding (CLU) and Question Answering projects. These models serve as a single entry point for the application, predicting which child project to call and automatically routing the requests.

Language Service Features

Text Summarization

Document Summarization

Uses natural language processing techniques to generate a summary for documents. Accepts only plain text blocks and supports:

- **Extractive Summarization**: produces a summary by extracting salient sentences within the document.
- **Abstractive Summarization**: generates a summary that may not use the same words as those in the document.

Conversation Summarization

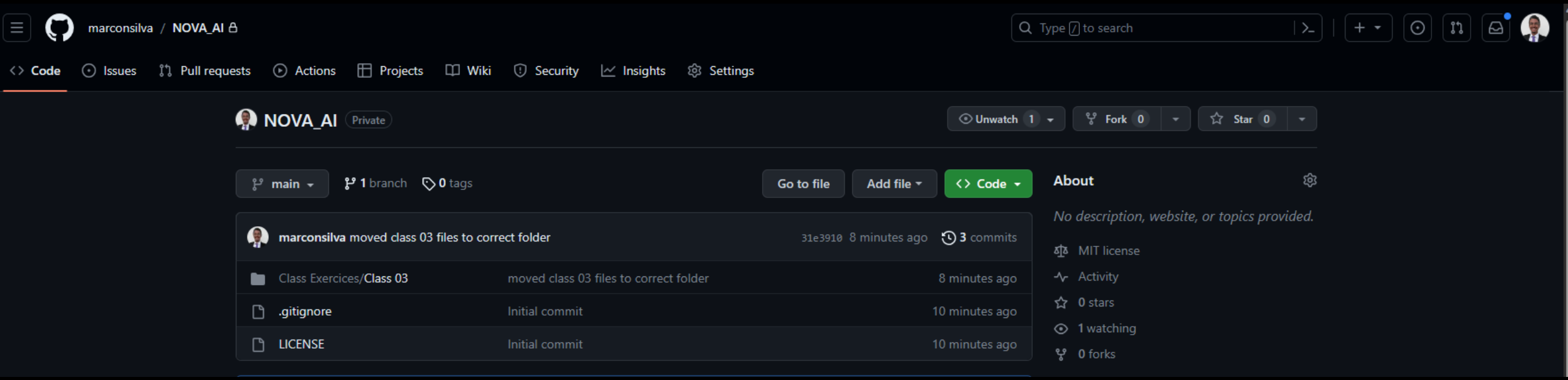
Accepts various speech artifacts to generate different types of summaries for a conversation:

- **Issue/resolution summarization**: call center specific feature that generates a summary of issues and resolutions in conversations
- **Chapter title summarization**: generates suggested chapter titles for the conversation
- **Narrative summarization**: generates call notes, meeting notes or chat summaries.

Custom Summarization

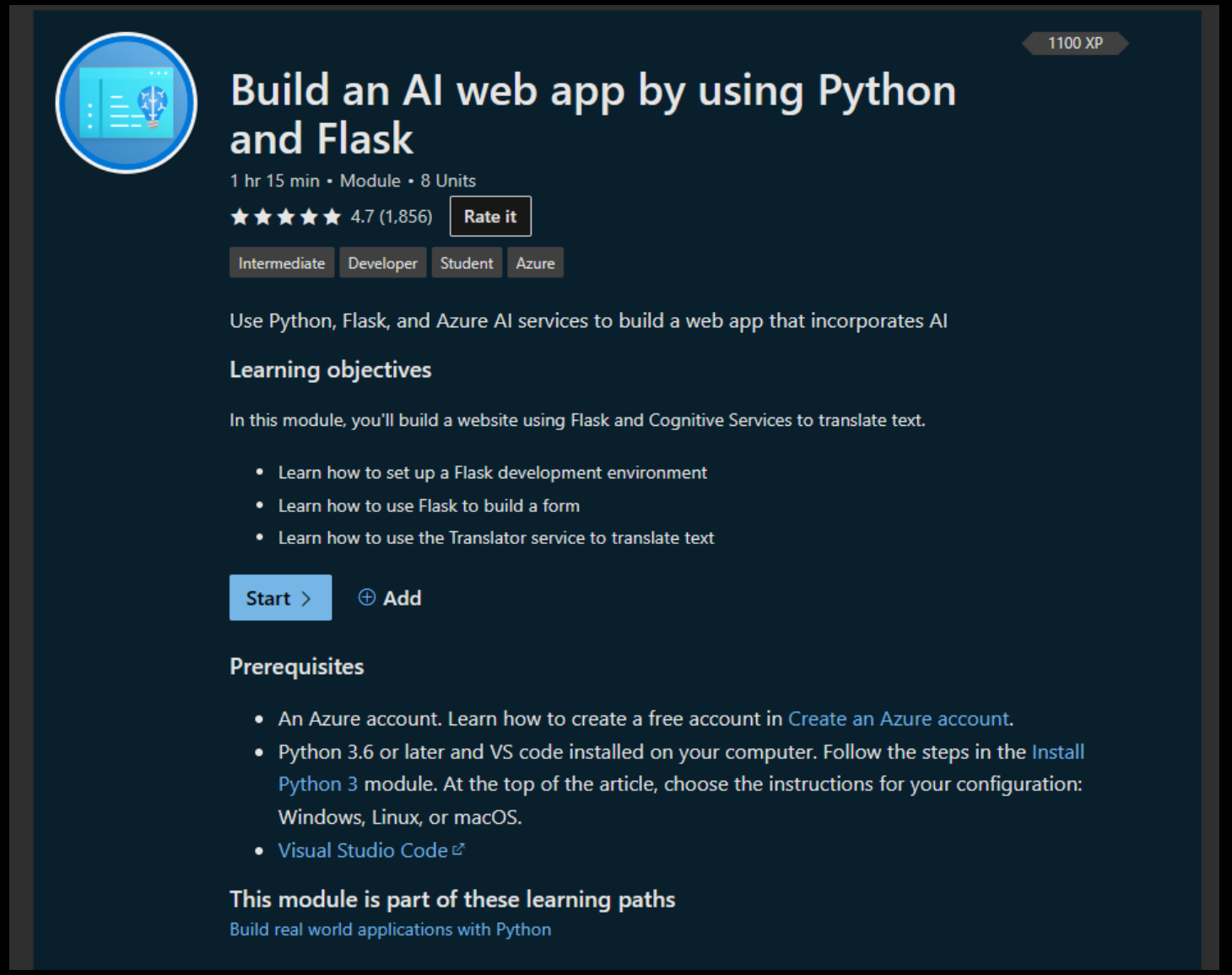
Enables users to build custom models to summarize unstructured text, such as contracts or novels.

Classes GuitHug



https://github.com/marconsilva/NOVA_AI

Exercice 1



1100 XP

Build an AI web app by using Python and Flask

1 hr 15 min • Module • 8 Units

4.7 (1,856) Rate it

Intermediate | Developer | Student | Azure

Use Python, Flask, and Azure AI services to build a web app that incorporates AI

Learning objectives

In this module, you'll build a website using Flask and Cognitive Services to translate text.

- Learn how to set up a Flask development environment
- Learn how to use Flask to build a form
- Learn how to use the Translator service to translate text

Start > ⊕ Add

Prerequisites

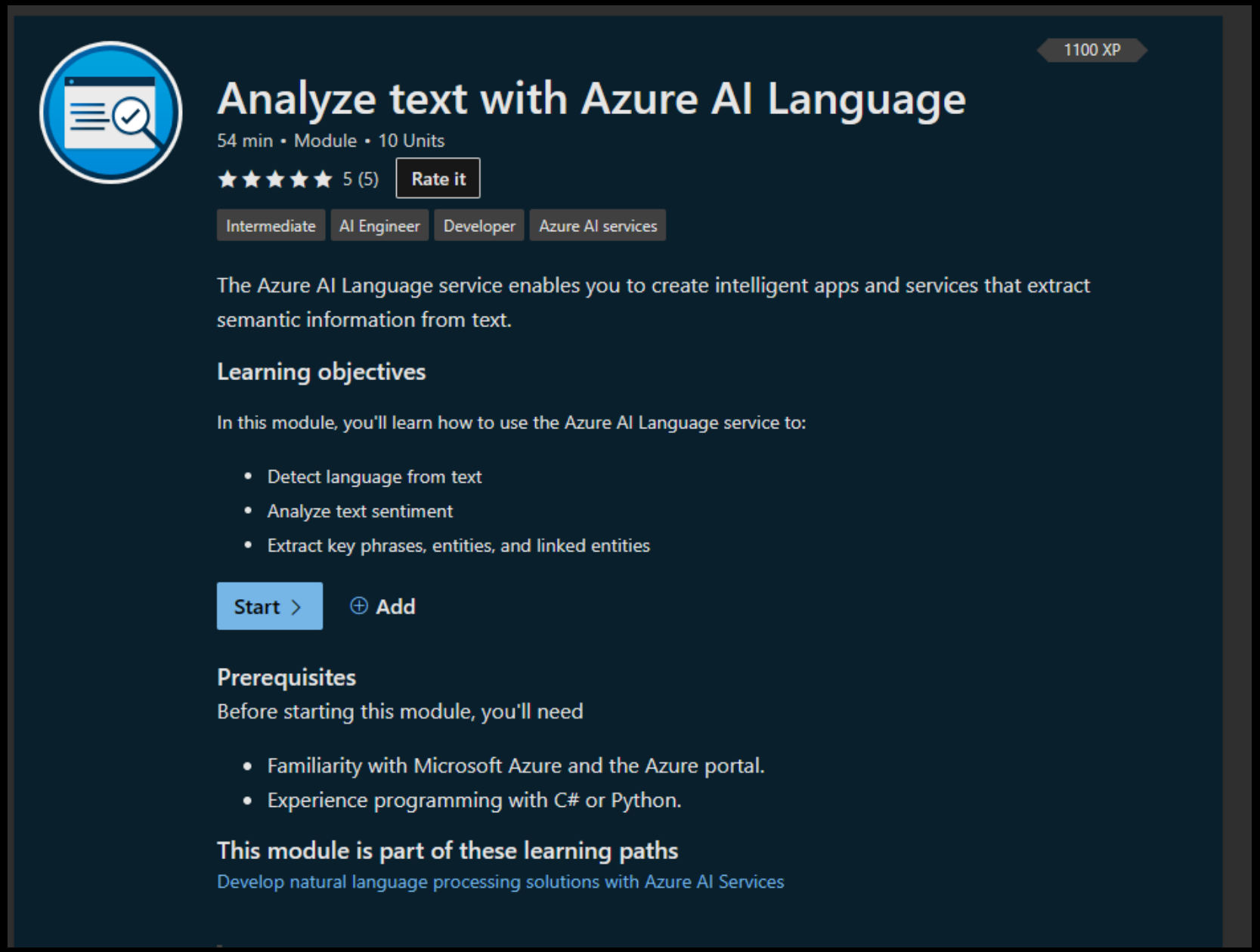
- An Azure account. Learn how to create a free account in Create an Azure account.
- Python 3.6 or later and VS code installed on your computer. Follow the steps in the Install Python 3 module. At the top of the article, choose the instructions for your configuration: Windows, Linux, or macOS.
- Visual Studio Code

This module is part of these learning paths

Build real world applications with Python

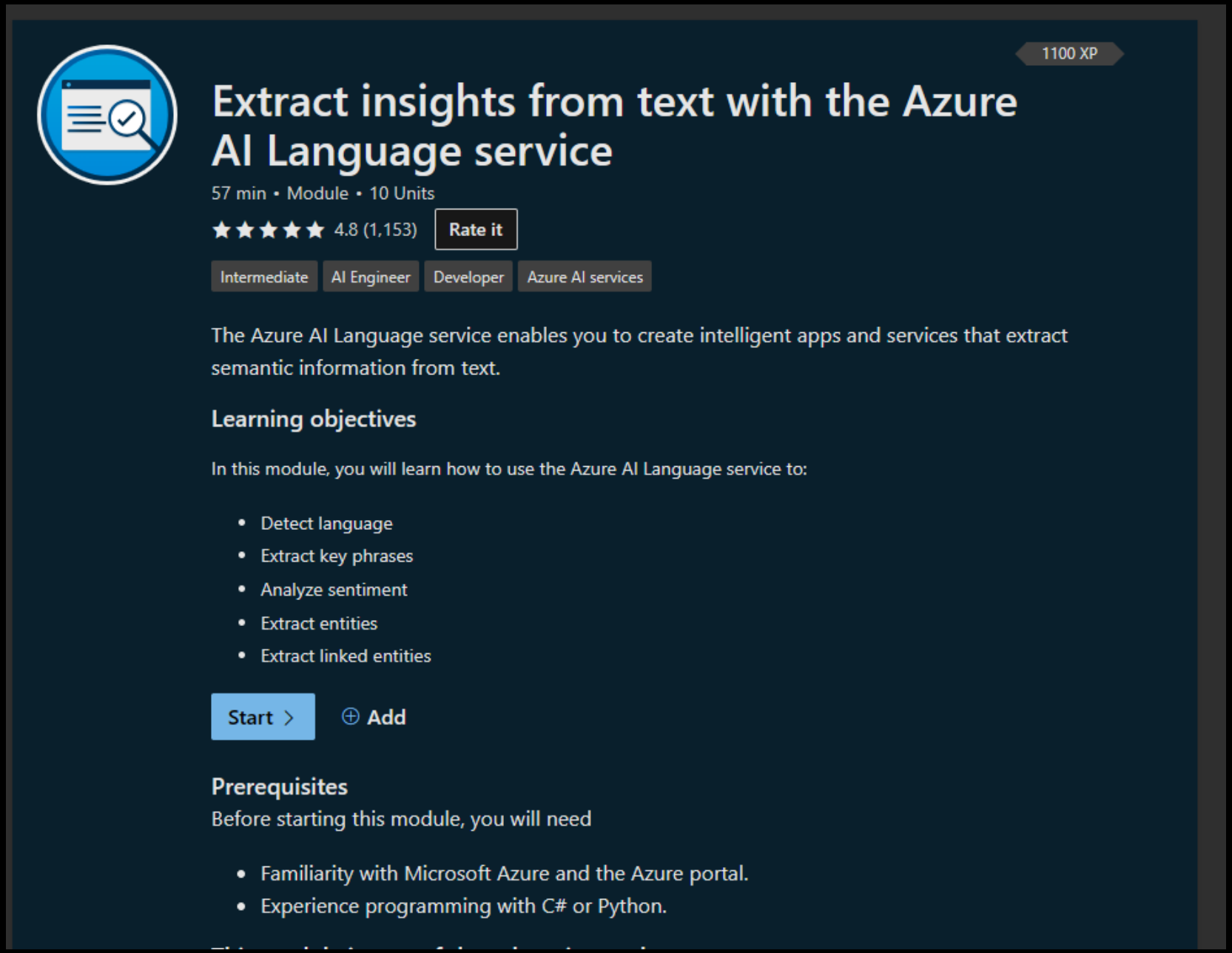
https://learn.microsoft.com/en-us/training/modules/python-flask-build-ai-web-app/

Exercice 2



https://learn.microsoft.com/en-us/training/modules/analyze-text-ai-language/

Exercice 3



1100 XP

Extract insights from text with the Azure AI Language service

57 min • Module • 10 Units

4.8 (1,153) Rate it

Intermediate | AI Engineer | Developer | Azure AI services

The Azure AI Language service enables you to create intelligent apps and services that extract semantic information from text.

Learning objectives

In this module, you will learn how to use the Azure AI Language service to:

- Detect language
- Extract key phrases
- Analyze sentiment
- Extract entities
- Extract linked entities

Start > ⊕ Add

Prerequisites

Before starting this module, you will need

- Familiarity with Microsoft Azure and the Azure portal.
- Experience programming with C# or Python.

https://learn.microsoft.com/en-us/training/modules/extract-insights-text-with-text-analytics-service/

Microsoft Azure

Invent with purpose.

Thank you