AI - 102 : Designing and Implementing an Azure AI Solution

Course Outline

Module 1: Introduction to AI on Azure
Learn about AI capabilities and their implementation in Microsoft Azure, with a focus on responsible AI solution design.
Lessons:
- Introduction to Artificial Intelligence
- Artificial Intelligence in Azure

Outcomes:
- Describe considerations for AI-enabled applications.
- Identify Azure services for AI development.

Module 2: Developing AI Apps with Cognitive Services
Explore the core building blocks for integrating AI, including provisioning, securing, monitoring, and deploying cognitive services.
Lessons:
- Getting Started with Cognitive Services
- Using Cognitive Services for Enterprise Applications

Lab:
- Get Started with Cognitive Services
- Manage Cognitive Services Security
- Monitor Cognitive Services
- Use a Cognitive Services Container

Outcomes:
- Provision and consume cognitive services in Azure.
- Manage cognitive services security and monitoring.
- Use a cognitive service container.

Module 3: Getting Started with Natural Language Processing
Understand how to use cognitive services for text analysis and translation.
Lessons:
- Analyzing Text
- Translating Text

Lab:
- Analyze Text
- Translate Text

Outcomes:
- Use the Text Analytics service for text analysis.
- Use the Translator service for text translation.

Module 4: Building Speech-Enabled Applications
Learn to build applications that handle spoken input and text synthesis using speech cognitive services.
Lessons:
- Speech Recognition and Synthesis

- Speech Translation

Lab:
- Recognize and Synthesize Speech
- Translate Speech

Outcomes:
- Use the Speech service for speech recognition, synthesis, and translation.

Module 5: Creating Language Understanding Solutions
Train models for understanding natural language input and integrate them into applications.

Lessons:
- Creating a Language Understanding App
- Publishing and Using a Language Understanding App
- Using Language Understanding with Speech

Lab:
- Create a Language Understanding App
- Create a Language Understanding Client Application
- Use the Speech and Language Understanding Services

Outcomes:
- Create and deploy Language Understanding apps.
- Integrate Language Understanding with Speech.

Module 6: Building a QnA Solution
Develop AI solutions that intelligently respond to user questions using the QnA Maker service.

Lessons:
- Creating a QnA Knowledge Base
- Publishing and Using a QnA Knowledge Base

Lab:
- Create a QnA Solution

Outcomes:
- Use QnA Maker to create and deploy knowledge bases.

Module 7: Conversational AI and the Azure Bot Service
Build conversational bots using the Microsoft Bot Framework and Azure Bot Service.

Lessons:
- Bot Basics
- Implementing a Conversational Bot

Lab:
- Create a Bot with the Bot Framework SDK
- Create a Bot with Bot Framework Composer

Outcomes:
- Use the Bot Framework SDK and Composer to create bots.

Module 8: Getting Started with Computer Vision
Explore how to use cognitive services to analyze images and videos.

Lessons:

- Analyzing Images
- Analyzing Videos

Lab:
- Analyze Images with Computer Vision
- Analyze Video with Video Indexer

Outcomes:
- Use the Computer Vision service for image analysis.
- Use Video Indexer for video analysis.

Module 9: Developing Custom Vision Solutions
Learn to create custom image classification and object detection models using the Custom Vision service.

Lessons:
- Image Classification
- Object Detection

Lab:
- Classify Images with Custom Vision
- Detect Objects in Images with Custom Vision

Outcomes:
- Implement image classification and object detection using Custom Vision.

Module 10: Detecting, Analyzing, and Recognizing Faces
Discover how to use cognitive services for facial detection, analysis, and recognition.

Lessons:
- Detecting Faces with the Computer Vision Service
- Using the Face Service

Lab:
- Detect, Analyze, and Recognize Faces

Outcomes:
- Use the Face service for facial detection and recognition.

Module 11: Reading Text in Images and Documents
Learn to extract text from images, documents, and forms using OCR and Form Recognizer services.

Lessons:
- Reading Text with the Computer Vision Service
- Extracting Information from Forms with the Form Recognizer Service

Lab:
- Read Text in Images
- Extract Data from Forms

Outcomes:
- Use OCR to read text in images and documents.
- Use Form Recognizer to extract data from forms.

Module 12: Creating a Knowledge Mining Solution
Build intelligent search solutions using Azure Cognitive Search and custom skills for knowledge mining.

Lessons:
- Implementing an Intelligent Search Solution
- Developing Custom Skills for an Enrichment Pipeline
- Creating a Knowledge Store

Lab:
- Create an Azure Cognitive Search Solution
- Create a Custom Skill for Azure Cognitive Search
- Create a Knowledge Store with Azure Cognitive Search

Outcomes:
- Develop intelligent search solutions and custom skills.
- Create a knowledge store using Azure Cognitive Search.