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Module 2: "No-code" Machine Learning with Designer

Agenda

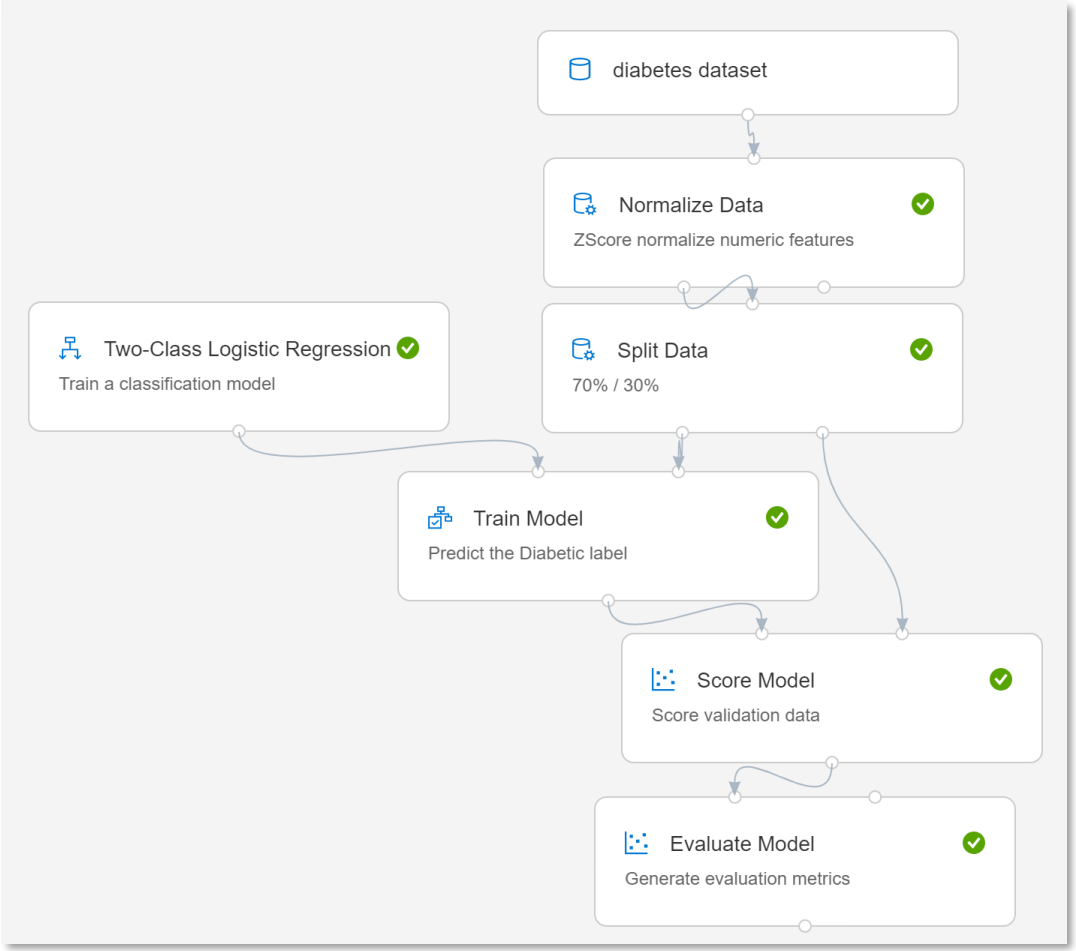
- Training Models with Designer
- Publishing Models with Designer

Lesson 1
Training Models with Designer

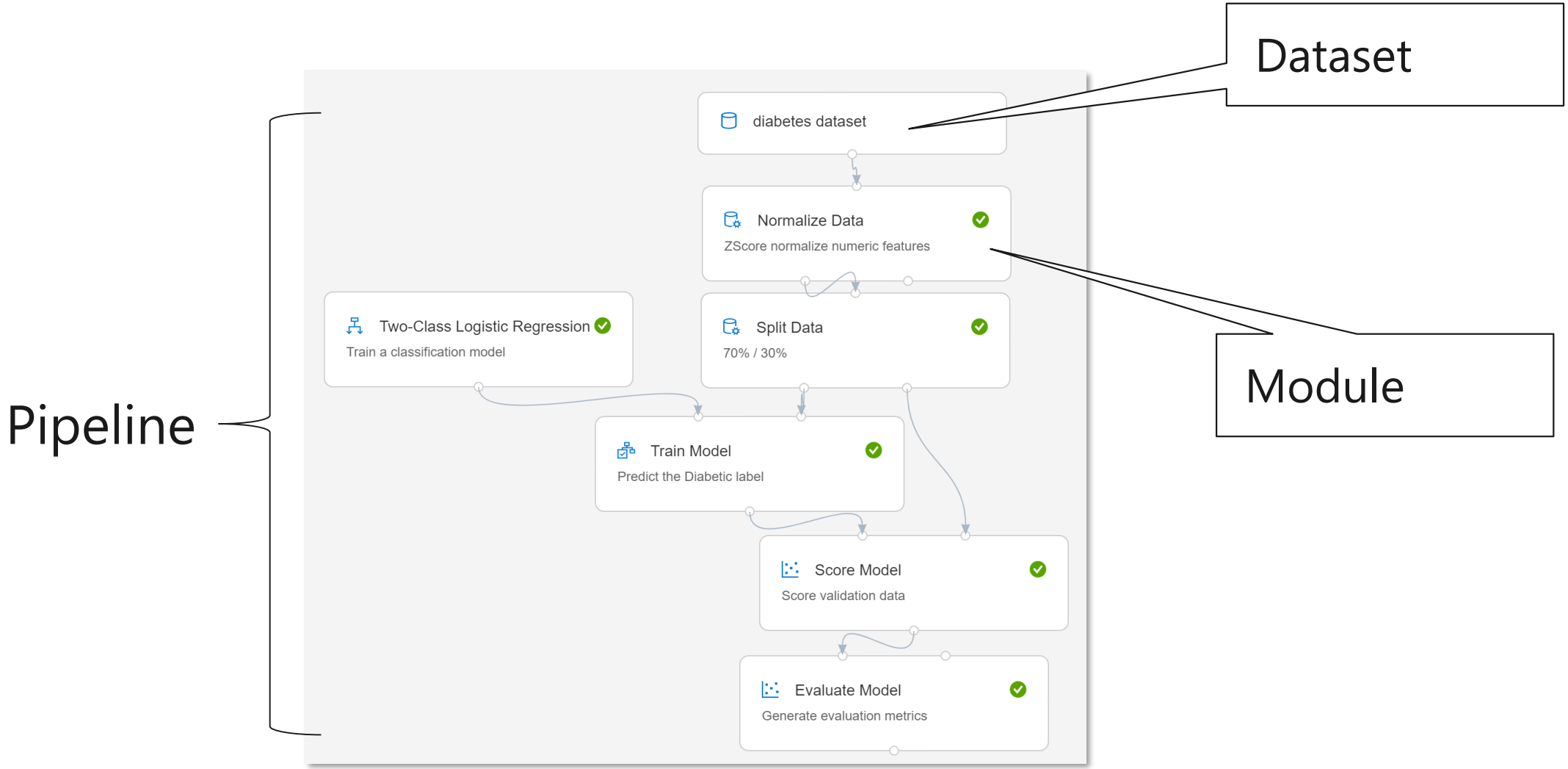
What is Azure Machine Learning Designer?

Drag-and-Drop Interface for:

- Preparing data and training models
- Publishing models as services

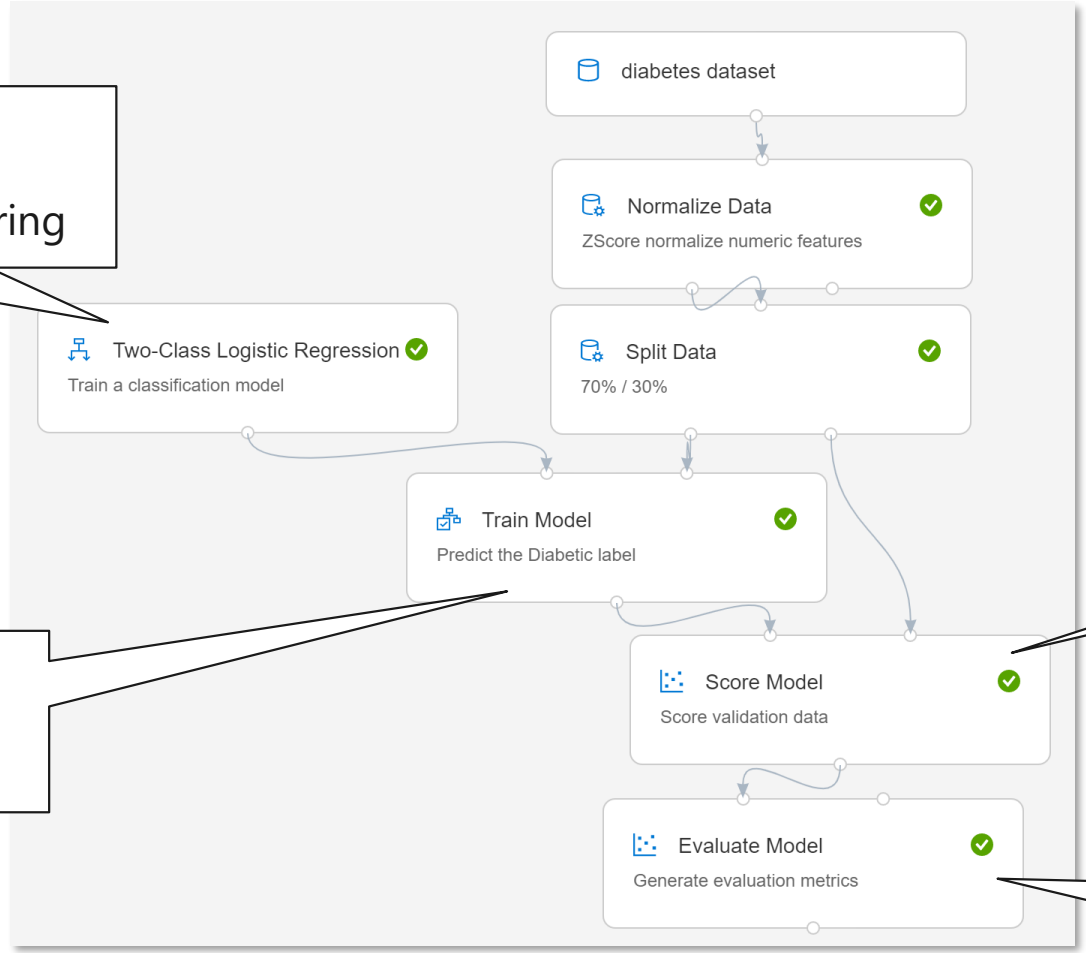


Designer Pipelines and Modules



Training, Scoring, and Evaluating Models

1. Algorithm
Classification, Regression, Clustering



2. Train
Fit model for specified label

3. Score
Predict from test data

4. Evaluate
model-specific metrics

Custom Code Modules

Apply SQL Transformation	Use a SQL statement to process up to three input tables
Execute Python Script	Implement a custom Python function to process up to two dataframes
Create Python Model	Implement a custom Python model in place of a built-in algorithm
Execute R Script	Implement a custom R function to process up to two dataframes

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Lab 2A

Creating a Training Pipeline with the Azure ML Designer

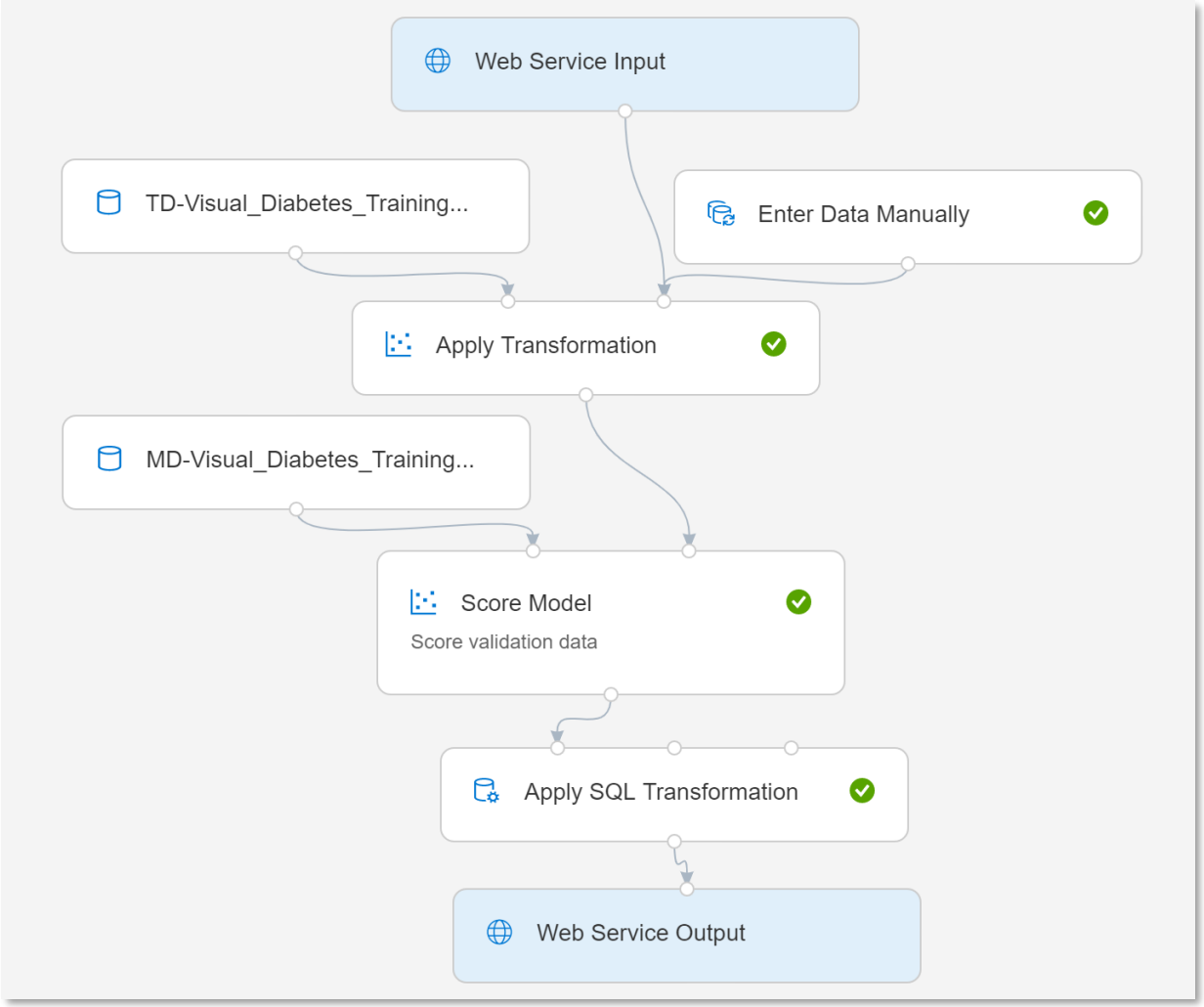
https://aka.ms/msl-dp100

Lesson 2
Publishing Models with Designer

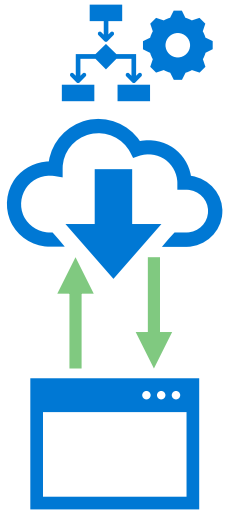
What is an Inference Pipeline?

A data flow defining a web service for using the trained model

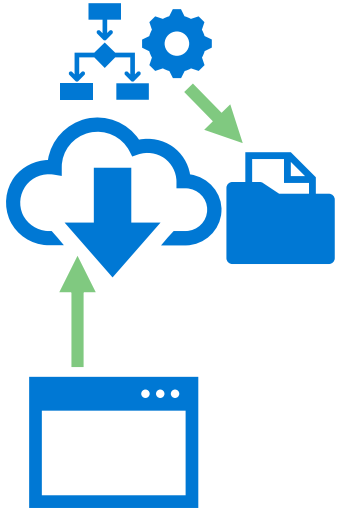
- A **Web Service Input** defines the input data schema
- Transformations based on training data are encapsulated in datasets
- The trained model is encapsulated in a dataset
- A **Web Service Output** defines the output data schema
- You may want to modify the pipeline before deploying its as a web service



Publishing a Service Endpoint



- Deploy a Real-Time Pipeline:
  - Requires Azure Kubernetes Services Inference Compute
  - Submit new data to HTTP endpoint for immediate results



- Publish a Batch Pipeline
  - Requires Azure Machine Learning Training Compute
  - Initiate pipeline experiment run through HTTP endpoint
  - Results saved in run output

Consuming a Service Endpoint

- View endpoints in Azure Machine Learning studio
- Use starter code to build client applications

```
data = {"Inputs": {"input0":[{'feature1': "123", 'feature2': "99",},],},
        "GlobalParameters":  {}}
body = str.encode(json.dumps(data))

url = 'http://10.0.0.1:80/api/v1/service/diabetes_predictor/score'
api_key = 'a1234567890x'
headers = {'Content-Type':'application/json',
           'Authorization':('Bearer '+ api_key)}

req = urllib.request.Request(url, body, headers)
response = urllib.request.urlopen(req)
result = response.read()
```

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Lab 2B

Deploying a Service with the Azure ML Designer

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