

# Classifying Images into Categories

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# Module Overview



Understand image classification

Introduce and understand k-nearest neighbor (k-NN) classification

Implementation of a simple k-NN system

Implementation of a simple image classification system using k-NN

Implement a larger scale image classification system

# Understanding Image Classification

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# Image Classification

An approach to classify some image into a particular category.

# Image Classification



**Apple**



**Banana**

# Supervised Learning

**Input data has known outputs**

**Model is trained from this known data**

**Unknown outputs can then be predicted  
from the trained model**

# Understanding k-Nearest Neighbor Systems

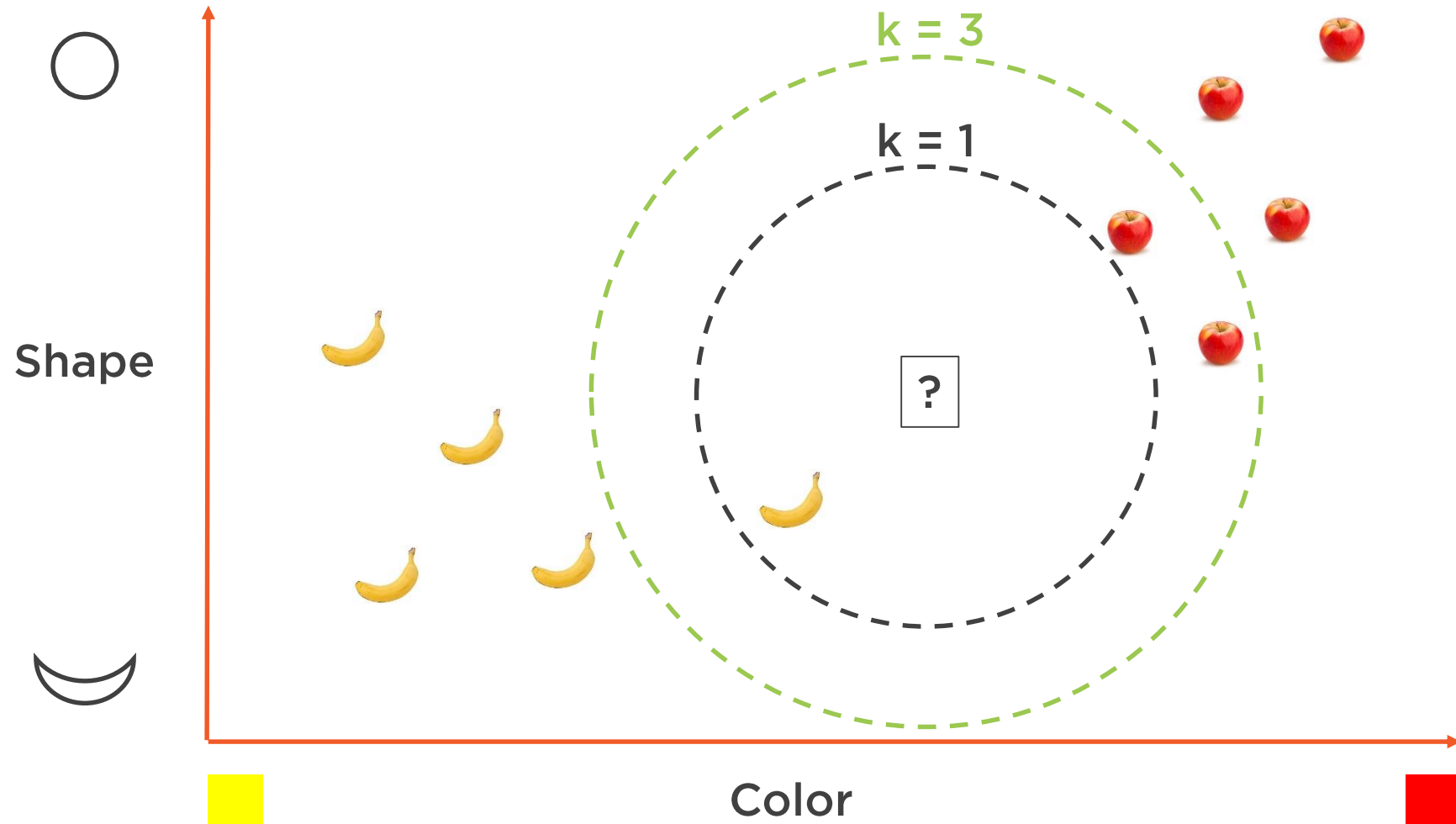
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# k-Nearest Neighbor classification

A classification method where the output is a classification category based on a vote of its nearest neighbors within a feature space.



# K-Nearest Neighbor



# Implementing a k-Nearest Neighbor System

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# Implementing a Small-scale Image Classification System

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# Implementing a Larger-scale Image Classification System

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# Summary



Understood image classification

Introduced and understood k-nearest neighbor (k-NN) classification

Implemented of a simple k-NN system

Implemented of a simple image classification system using k-NN

Implemented a larger scale image classification system