

CSD AI & Machine Learning

Lesson 2

Types of Machine Learning

Warm Up



Journal Prompt:

Think of a skill you commonly use, like speaking, tying your shoes, cooking, or playing a game.

How did you learn this skill?

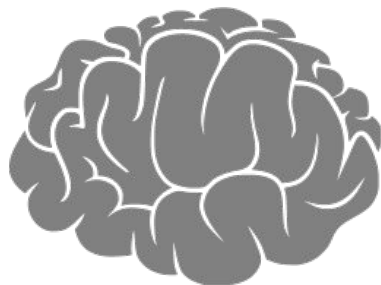
Question of the Day

What are different types of machine learning?

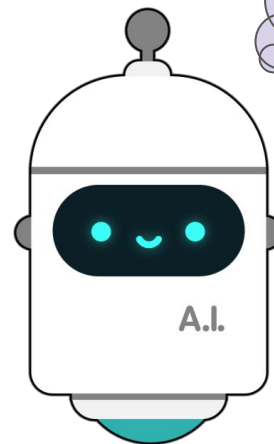
Activity



Mental Model

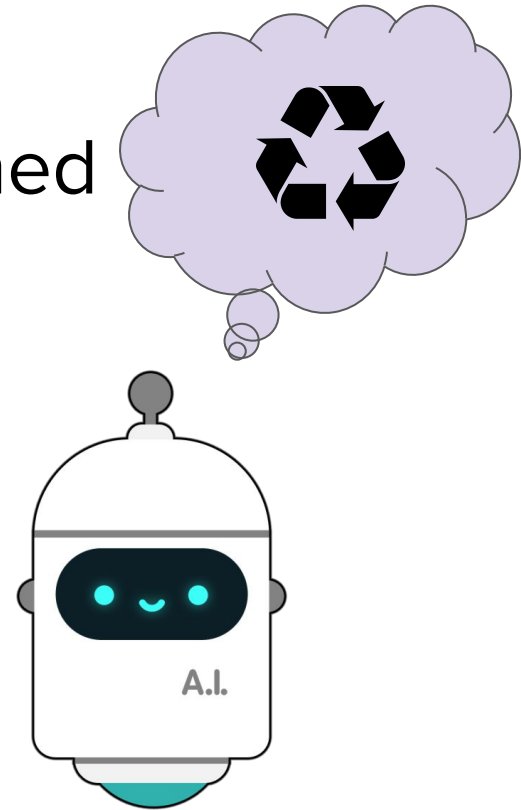


**Machine Learning
Model**



Key Vocabulary

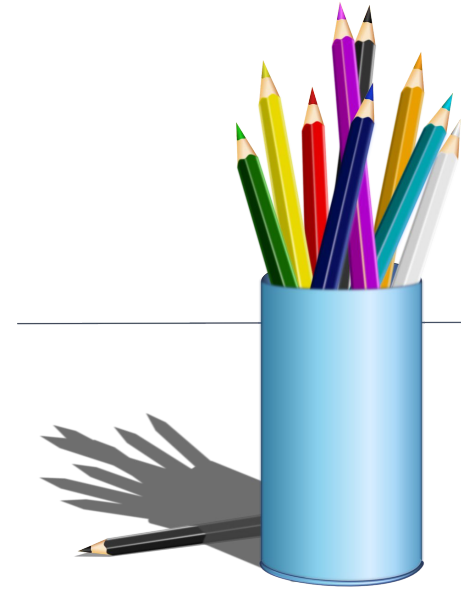
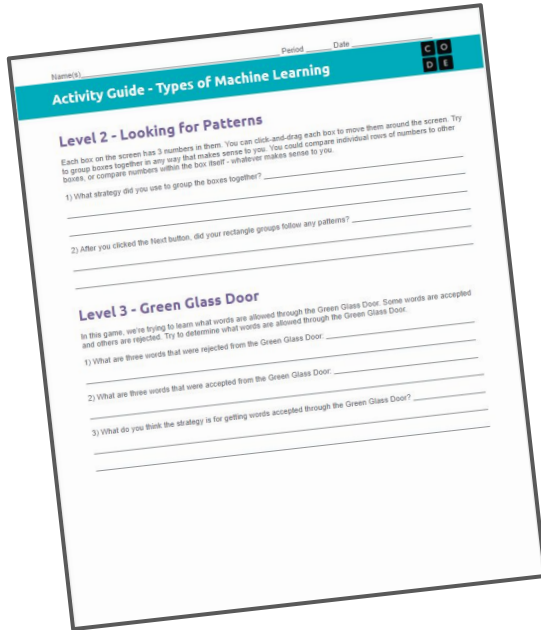
- **Model** - a computer program designed to make a decision



Types of Machine Learning

You should have:

Types of Machine Learning Activity Guide
Pen/Pencil





Code Studio

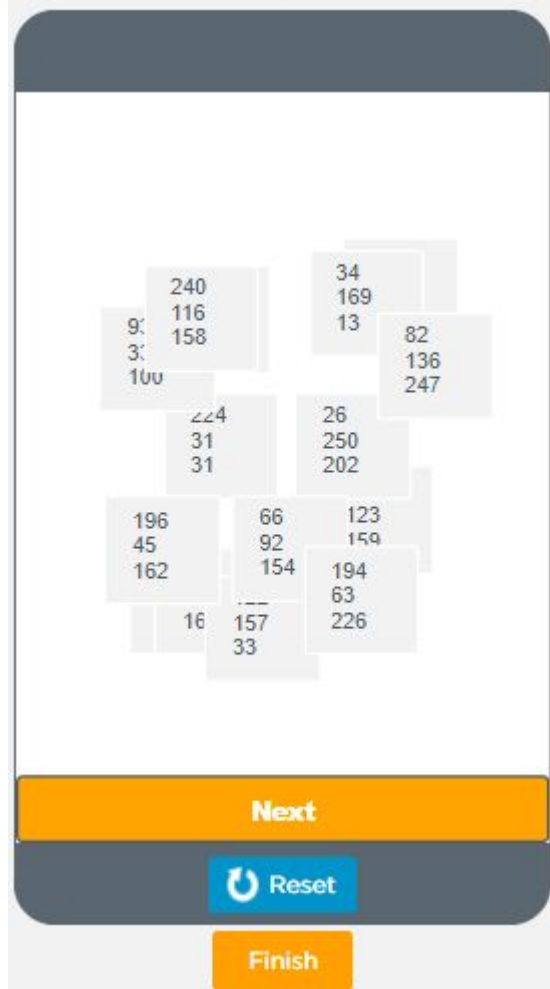
Log into Code Studio

Navigate to Code Studio
Lesson 2 Level 1 -
Looking for Patterns

Code Studio, Level 1 Looking for Patterns

Do This

- Click and drag the rectangles to group the rectangles together in whatever way makes sense to you

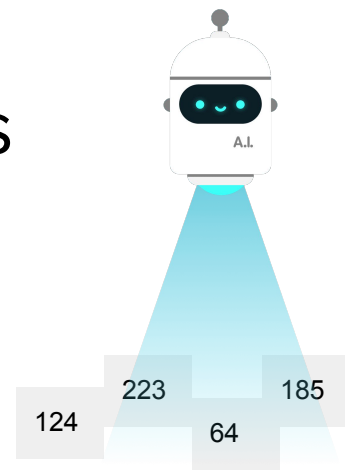


Discuss

What groupings did you create? Is there a pattern?

Key Vocabulary

- **Unsupervised Learning** - finding patterns in data that doesn't have any labels
- **Features** - the inputs that the model uses to make decisions



Discuss

Which examples from the warm-up are unsupervised learning?

Code Studio

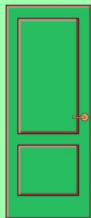


Navigate to Code Studio
Lesson 2 Level 2 -
Green Glass Door

Code Studio, Level 2 Green Glass Door

Green Glass Door

In this game, we're trying to learn what words are allowed through the Green Glass Door.



Some words are accepted and others are rejected

In the next screen, a wise wizard will show us how to play the game

Then we'll get a chance to play and guess which words are accepted or rejected by the door

Start Playing



Run

Do This

- Play the Green Glass Door game to try and determine what words are allowed through the Green Glass Door

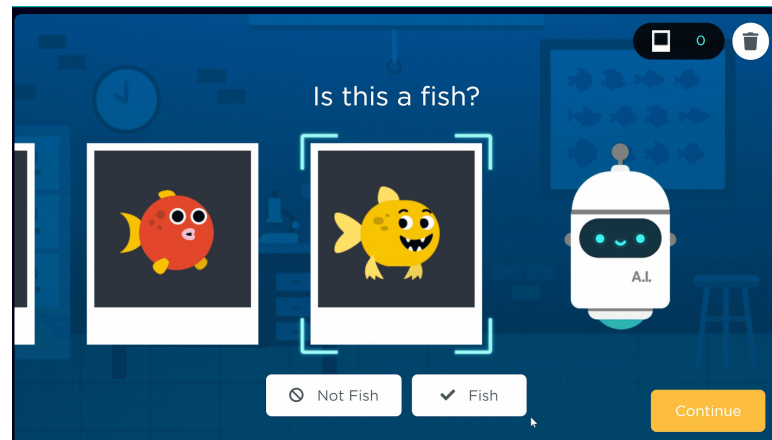
Discuss

What's the secret - which words are accepted or rejected?

How did you figure it out?

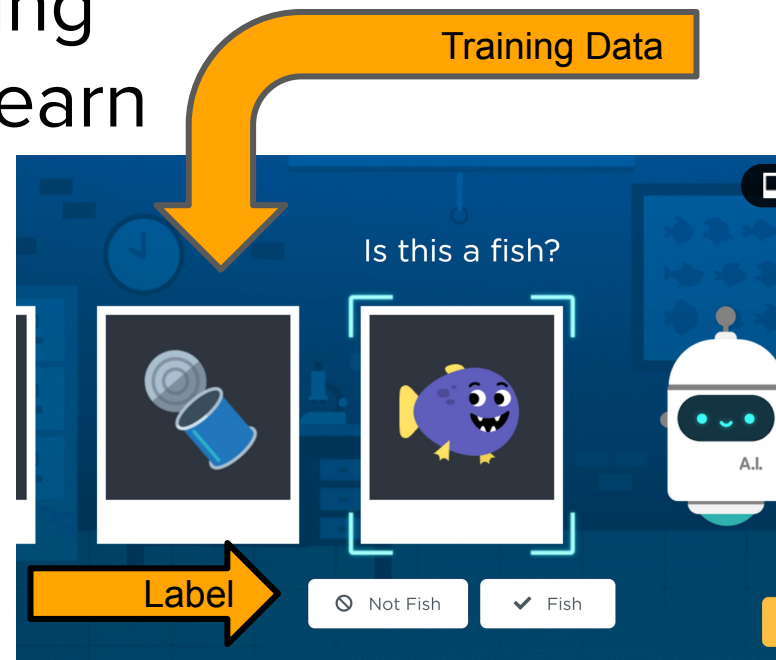
Key Vocabulary

- **Supervised Learning** - When a human trains a model to learn with examples.



Key Vocabulary

- **Training** - the process of giving examples to a model so it can learn
- **Label** - the output you are trying to decide or predict with a model



Discuss

Which examples from the warm up are supervised learning?

Do This

On the second page of your activity guide are several scenarios. Try to identify which scenarios are like **supervised** learning, and which scenarios are like **unsupervised** learning.

Supervised or Unsupervised?

You see someone playing your favorite song on a piano. After they leave, you sit at the piano and press random notes on the piano until you start to recreate the melody from the song.

Supervised or Unsupervised?

You go to a swim coach who helps you learn how to swim in a pool. You watch them demonstrate basic strokes before practicing on your own

Supervised or Unsupervised?

The elders in your family show you how to cook meals from recipes passed down from generation to generation. You read the recipe and watch them cook the meal first before you try making it yourself.

Supervised or Unsupervised?

A toddler watches all of the adults in their life walk around the house. Eventually, after a lot of falling and stumbling, they learn to find their balance and start walking.

Supervised or Unsupervised?

You know that there are spices in your kitchen, but you're not sure what to do with them. You add little bits of different spices and taste as you go until you settle on a taste that you like.

Supervised or Unsupervised?

You study different vocabulary words for science class by creating flash cards. On one side is the word and the other side is the definition. As you study, you gradually start to memorize the terms.

Wrap Up





Journal Prompt

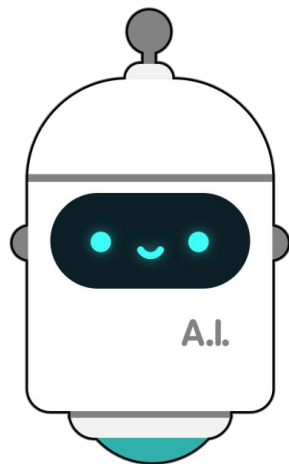
How are human learning and machine learning similar? How are they different?



Question of the Day - Revisited

What are different types of machine learning?

For Teachers Only



**Find a typo? Were some of the directions unclear?
Have a suggestion for how to improve the flow of this
lesson? We'd love to hear it!**

[Click Here](#) to offer feedback on this lesson