# Al & Machine Learning Lesson 4 Patterns in Data

## Warm Up



## **Writing Prompt:**

Choose one question to respond to:

- 1) When browsing the internet, what's the weirdest thing an ad has ever tried to get you to buy?
- 1) When sending a message, what's the funniest thing autocomplete has suggested to finish a sentence?



## **Rhetorical Question of the Day**

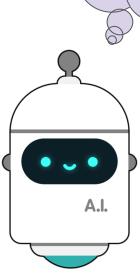
What strategies do computer models use to make decisions?

## Activity • • O



## **Key Vocabulary**

 Model - a computer program designed to make a decision







## Code.org

Log in

Navigate to Lesson 4 Level 1 -Shoe Recommender



#### Level 1 Shoe Recommender

#### **Do This**

- Navigate to Lesson 4 Level 1
- Run the app several times.
  - See if you can get each of the 4 recommendations
- Make a prediction:
  - How do you think this model is making its decision?





## **Writing Prompts**

Is this program helpful for deciding shoes?

Why or why not?



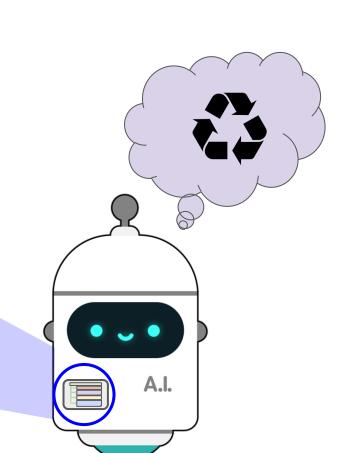


#### Intended Use

I can predict what shoes someone should wear

#### Here's How My Model Works

I make **random** guesses about what shoes you should wear. Each time you run the app, a new shoe will get recommended





## **Writing Prompt**

What would improve this model to help it make better decisions?





## Code.org

Navigate to
Lesson 4 Level 2 Improved Shoe Recommender



#### Level 2

**Improved Shoe Recommender** 

#### **Do This**

- Navigate to Lesson 4 Level 2
- Run the app several times.
  - See if you can get each of the 6 recommendations
- Make a prediction:
  - how do you think this model is making its decision?



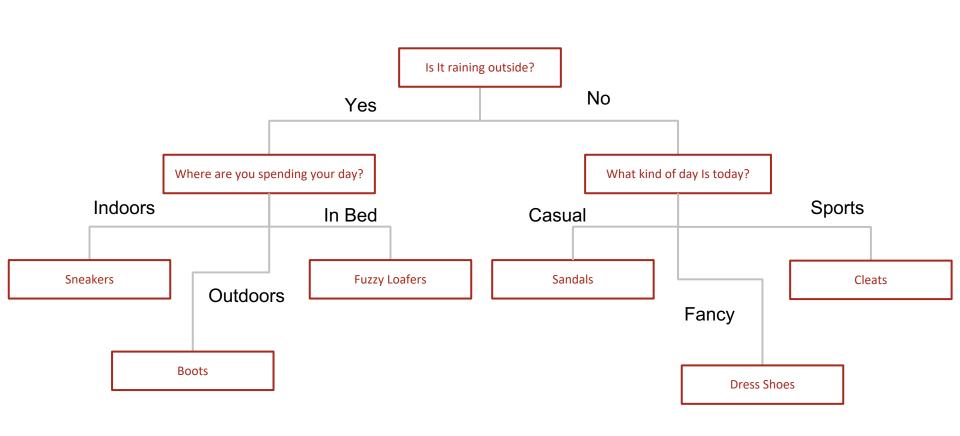


## **Writing Prompts**

1. How do you think this program is making its decision?

2.Is it more or less helpful for deciding shoes than the last program?







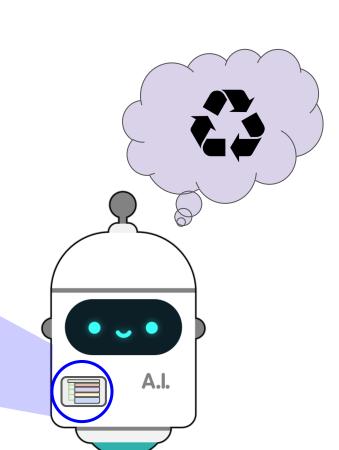


#### Intended Use

I can predict what shoes someone should wear

#### **Here's How My Model Works**

I use a **Decision Tree** to make decisions. After answering several questions, a shoe is recommended





## **Writing Prompts**

Do you agree with the questions that were asked and how the shoes were assigned?

Who do you think decided which shoes went with each answer?





## Code.org

Navigate to
Lesson 4 Level 3 Shoe Recommendation Survey



We're collecting data to help with our Shoe Recommender App.

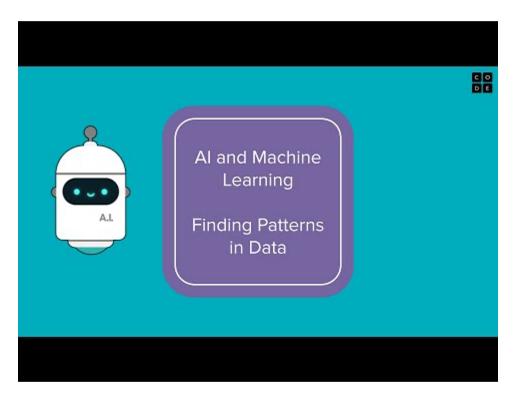
**Do This:** Take the survey to help gather data about what shoes we should be recommending.

nd

- You can take the survey multiple times and pretend you're in a different situation, such as:
- Pretending it's the weekend
- Pretending you're going to a birthday party
- Pretending you're sick and not feeling well



### Video



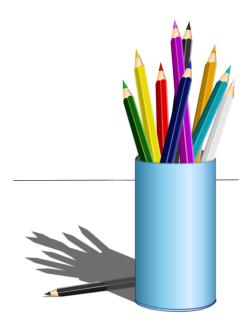


#### **Patterns in Data**

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#### You should have:

Patterns in Data Activity Guide Pen/Pencil





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#### **Do This**

Complete the activity by finding patterns and trends in the data using the Cross Tab charts



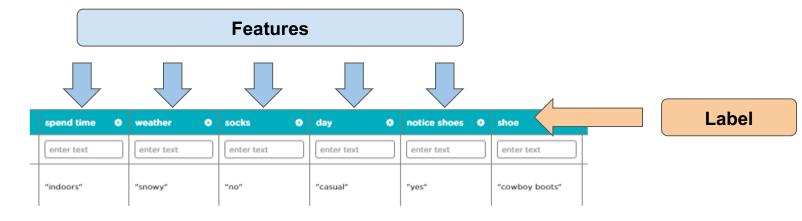
#### **Share Out**

Using trends from all five questions, what are some shoes we can recommend based on the patterns in the data?



## **Key Vocabulary**

- Feature an input that the model uses to make decisions
- Label the output you are trying to decide or predict with a model







#### Intended Use

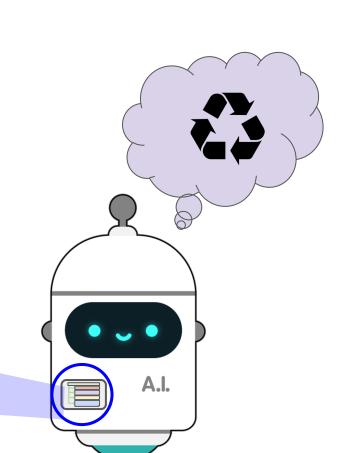
I can predict what shoes someone should wear

#### Here's How My Model Works

I use patterns and trends in data to find strong relationships between **features** and the **label** I want to predict

#### Here's The Data I Was Trained From!

I used data from a survey with 500 responses







## Code.org

Navigate to
Lesson 4 Level 4 Ultimate Shoe Recommender



#### Level 4

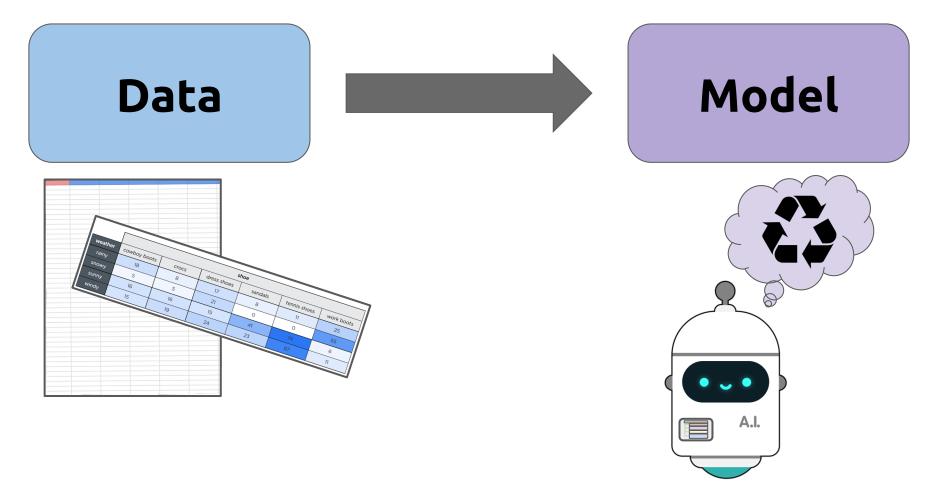
#### **Ultimate Shoe Recommender**

#### **Do This**

- Navigate to Lesson 4 Level 4
- Run the app several times
  - See if you can get the app to recommend shoes that match the patterns we saw in the data
- Try to get the app to recommend each type of shoe







## Wrap Up



## **Writing Prompts:**

If you could add another question to the shoe survey, what question would you ask?

Why do you think that question would be helpful in deciding a shoe?



## **Question of the Day - Revisited**

What strategies do computer models use to make decisions?