AI & Machine Learning
Lesson 5:
Classification Models

Warm Up

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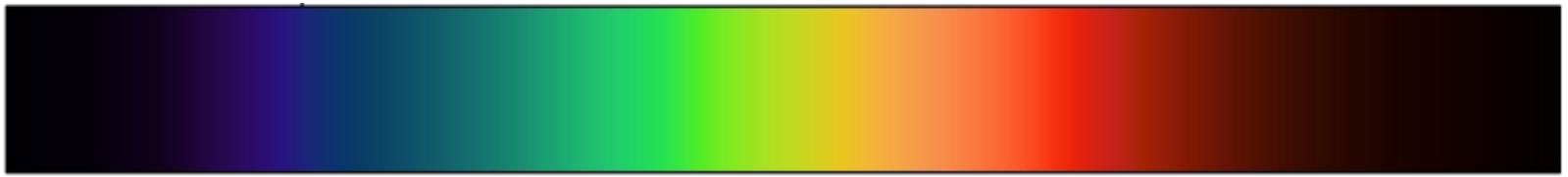
Journal Prompt

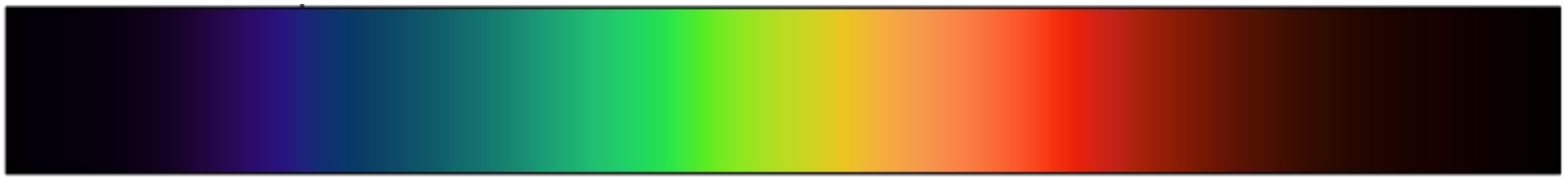
Look at the image below.

- How many colors are in the image below?
- Try finding “yellow”.
  - Where does it start?
  - Where does it end?



Discuss

If you could teach a computer to separate the colors, how would you do it?



Key Vocabulary

- **Categorical Data -** data that can be separated into groups
- **Classification -** predicting a category based on other features

Rhetorical Question of the Day

How do computers classify data?

Activity

Writing Prompts

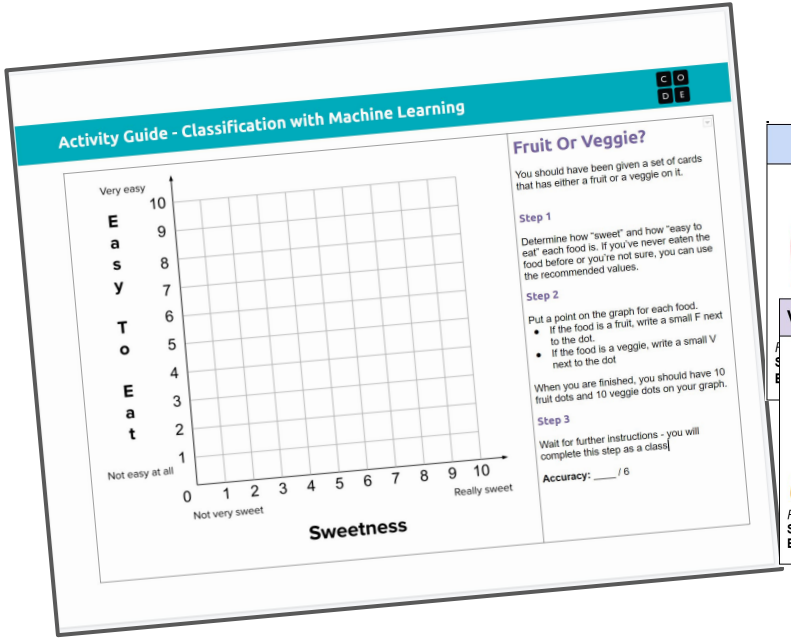
Let’s say you go to a friend’s house and they make a meal that you’ve never eaten before, so you’re not sure if you’ll like it or dislike it.

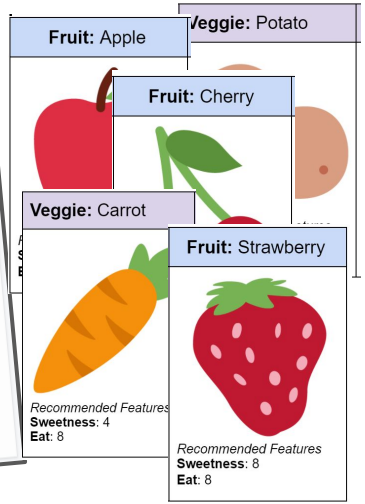
What are some qualities you look for in foods that you think help decide whether you’ll like it or dislike it?

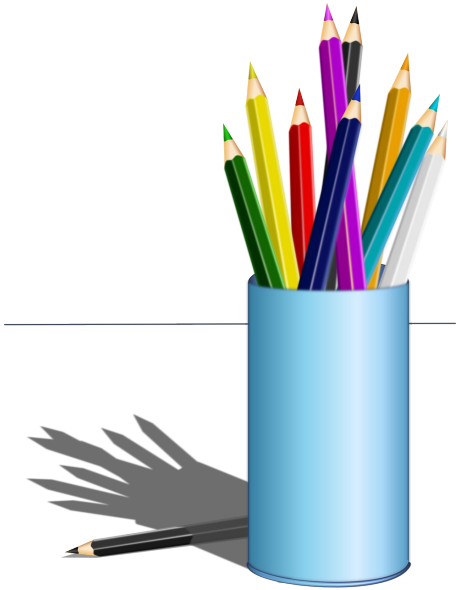
Classification with Machine Learning

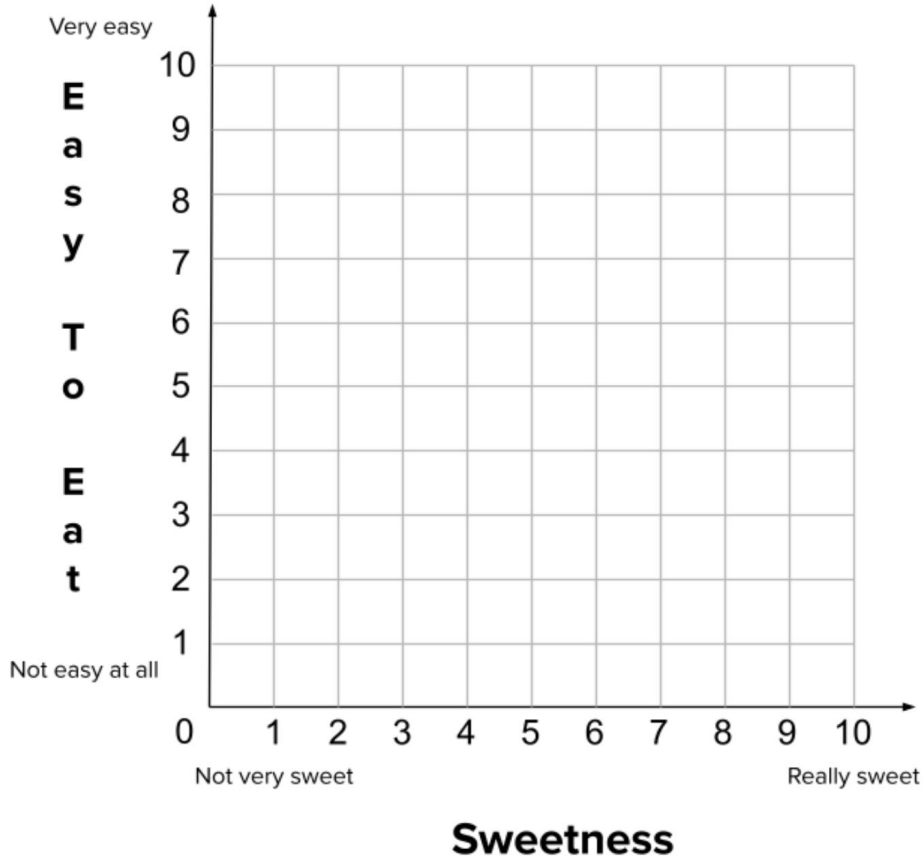
You should have:

Classification with Machine Learning Activity Guide (Schoology)
Fruit and Veggies Cards (Schoology)
Pen/Pencil









Fruit Or Veggie?

You should have been given a set of cards that has either a fruit or a veggie on it.

Step 1

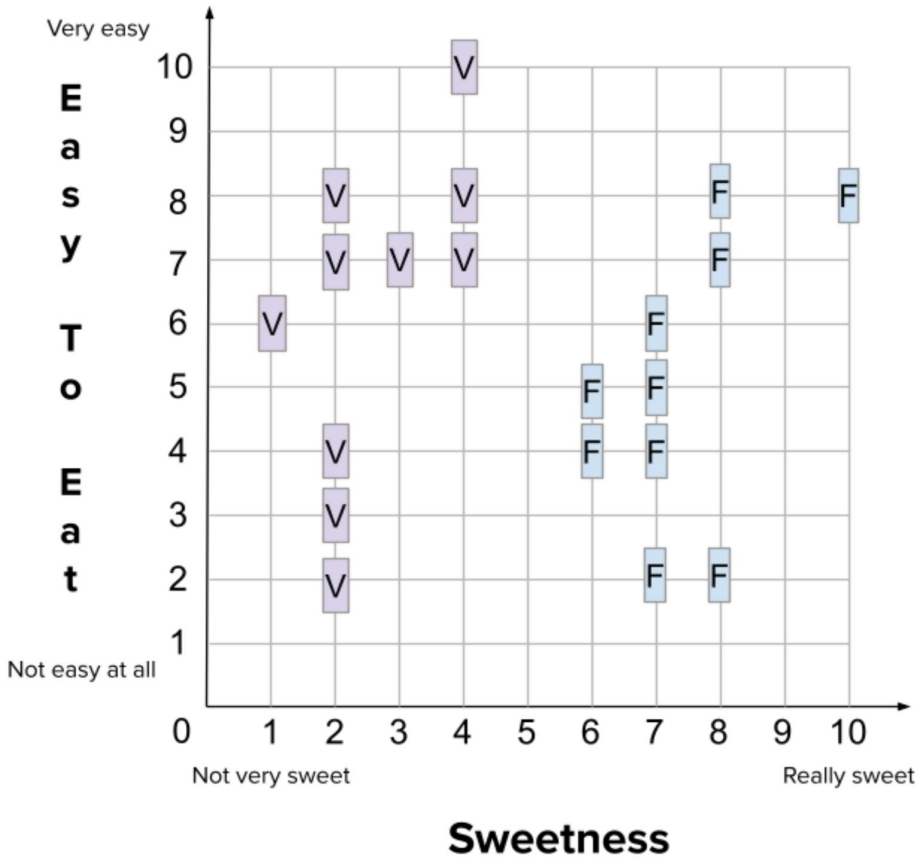
Determine how “sweet” and how “easy to eat” each food is. If you’ve never eaten the food before or you’re not sure, you can use the recommended values.

Step 2

Put a point on the graph for each food.

- If the food is a fruit, write a small F next to the dot.
- If the food is a veggie, write a small V next to the dot

When you are finished, you should have 10 fruit dots and 10 veggie dots on your graph.



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Do This

Draw a line on the graph to split it into two sides - a fruits side and a veggies side.

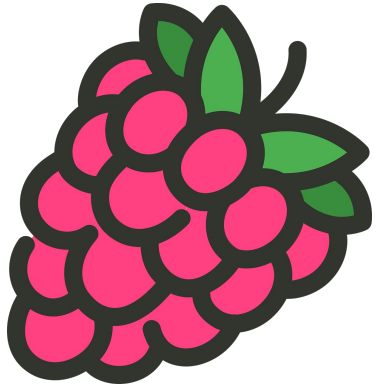
Several examples are on the left - make one of your own!

Testing Our Model

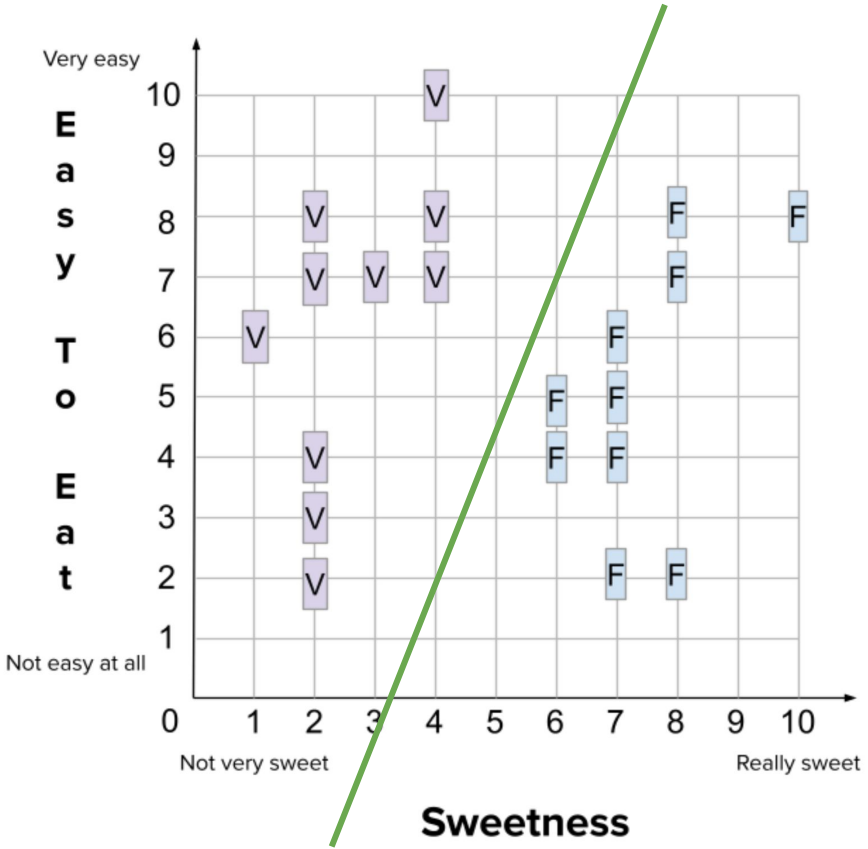
The next several slides have different foods to test against the model. Let's see how well our model does in deciding if something is a fruit or veggie!

We Try!

Raspberry



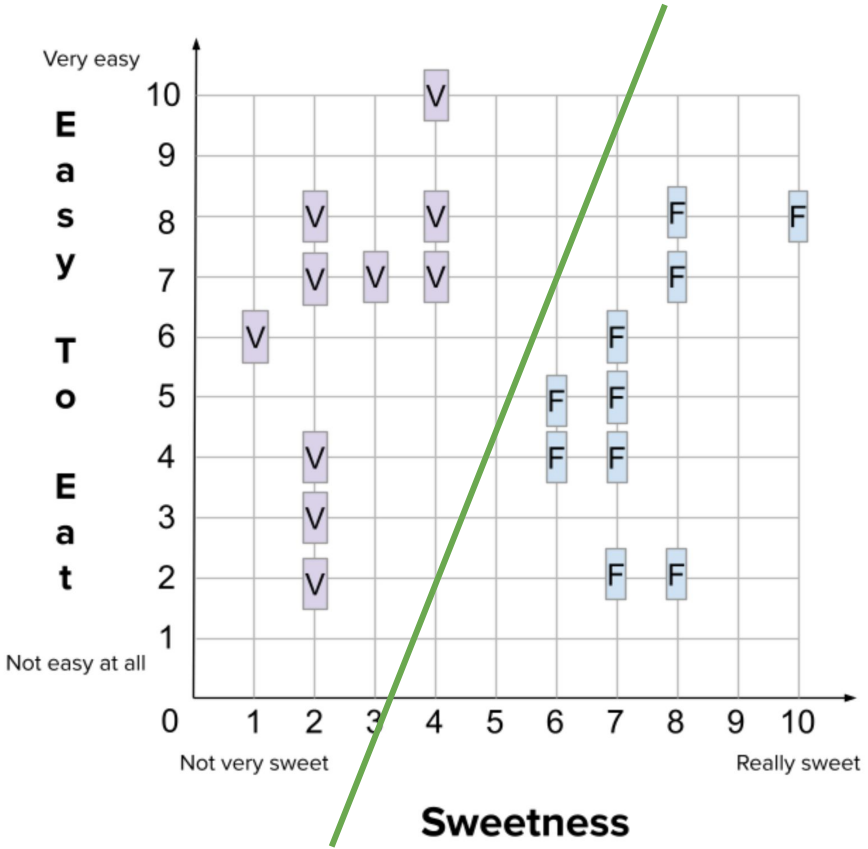
Recommended Features
***Sweetness**: 9*
***Eat**: 10*



We Try!

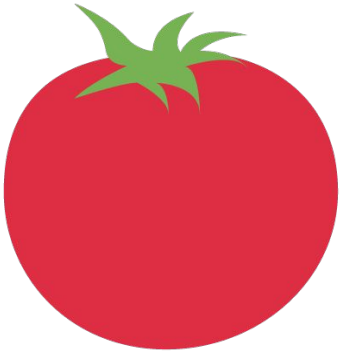
Pumpkin

Recommended Features
***Sweetness**: 3*
***Eat**: 2*



We Try!

Tomato



Recommended Features
***Sweetness**: 6*
***Eat**: 6*

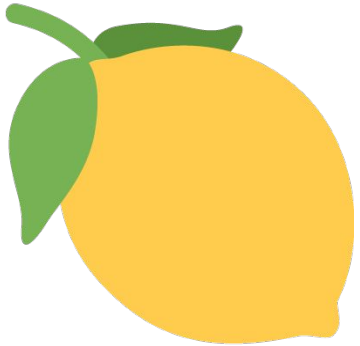
We Try!

Cucumber

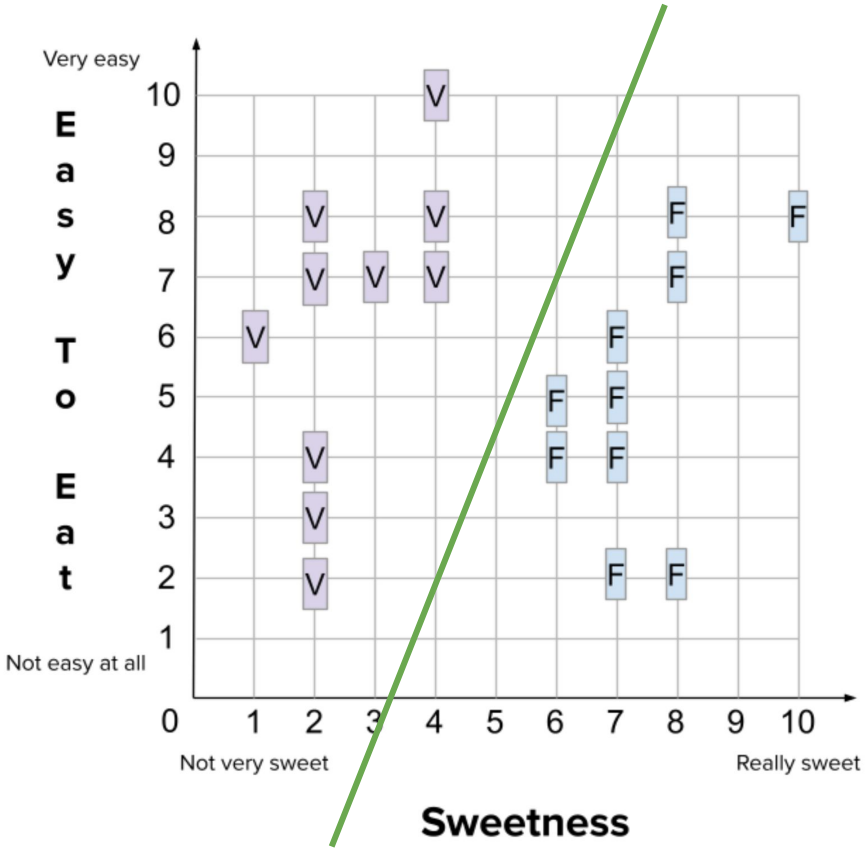
Recommended Features
***Sweetness**: 5*
***Eat**: 4*

We Try!

Lemon

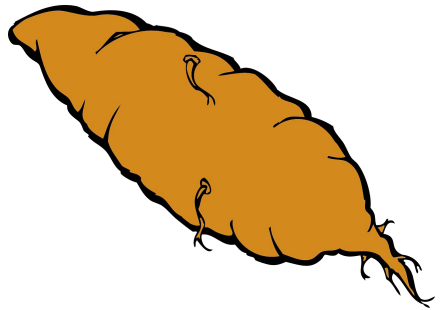


Recommended Features
***Sweetness**: 2*
***Eat**: 5*

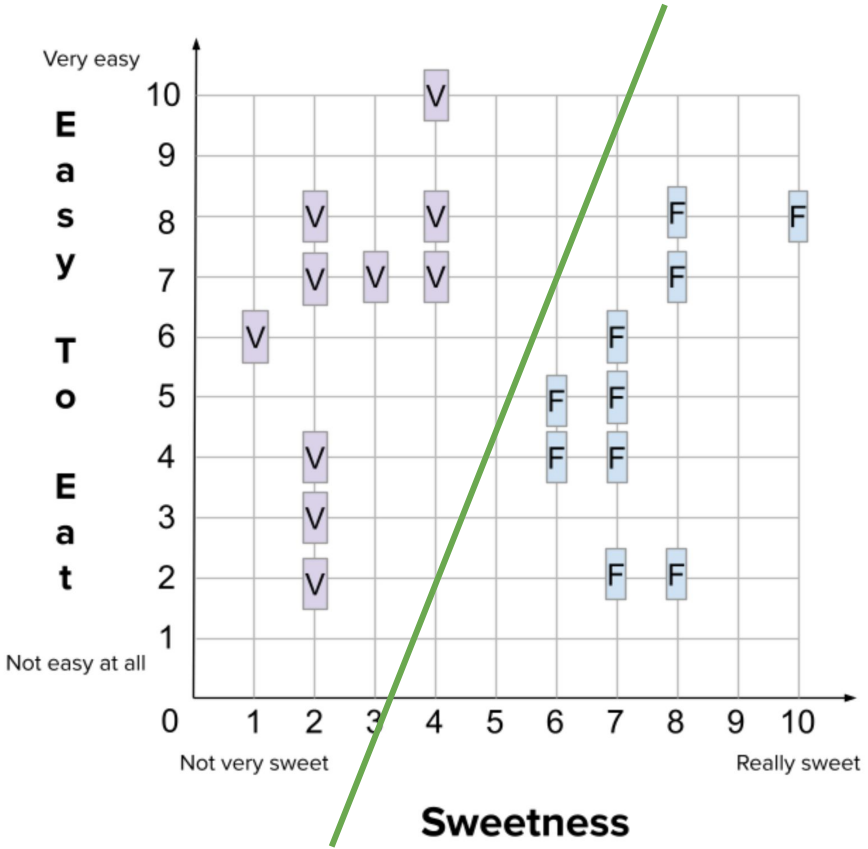


We Try!

Sweet Potato



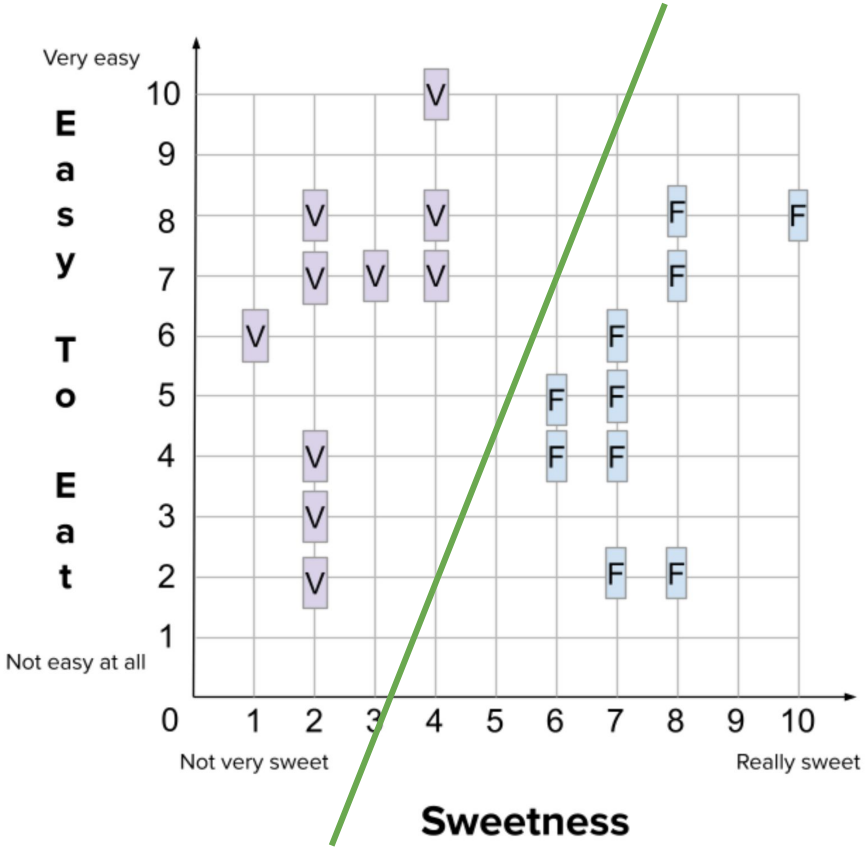
Recommended Features
***Sweetness**: 7*
***Eat**: 5*



We Try!

Ice Cream

Recommended Features
***Sweetness**: 10*
***Eat**: 8*



We Try!

Flaming Hot Cheetos™

Recommended Features
***Sweetness**: 0*
***Eat**: 6*

Wrap Up

Writing Prompt

If you were to break down what we did today into steps for a computer to follow, how would you describe those steps?

Question of the Day - Revisited
Writing Prompt

How does classification work?