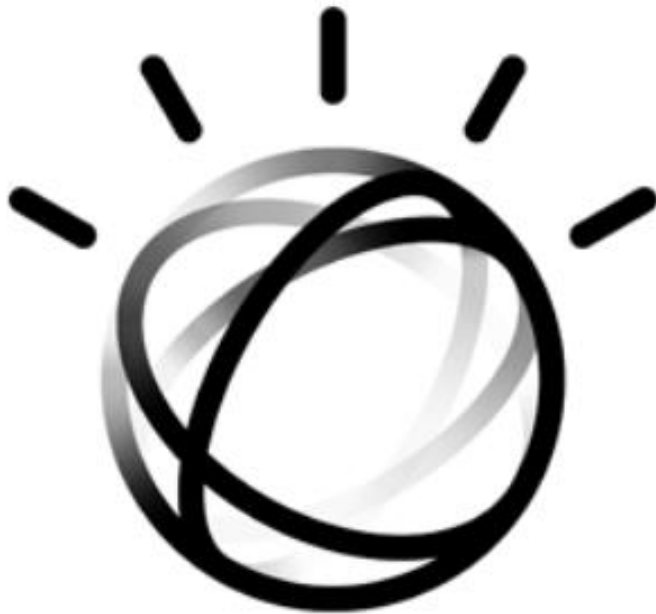

TRAIN YOUR COMPUTER WITH MACHINE LEARNING

AN IBM VOLUNTEERS ACTIVITY



DEE

@STEMDEEP

DEEPSTEM.WORDPRESS.COM


Nov 12 2018

COOPER SIEGEL COMMUNITY LIBRARY



LET'S GET TO
KNOW EACH
OTHER!


Introductions

- Your Name
 - Your School
 - Your Grade
- 



QUICK SURVEY


Programming

- Who has coded before?
 - What computer languages?
 - Can you share examples?
- 



QUICK SURVEY

Scratch

- Who has used scratch before?
 - What did you build?
- 



WHAT IS ARTIFICIAL INTELLIGENCE?





WHAT IS MACHINE LEARNING?



PLAN FOR TODAY

- Programming vs. Machine Learning
- Hands-on activity: Create a character in Scratch that smiles if you say nice things and cries if you say mean things
- Machine Learning Concepts

PROGRAMMING

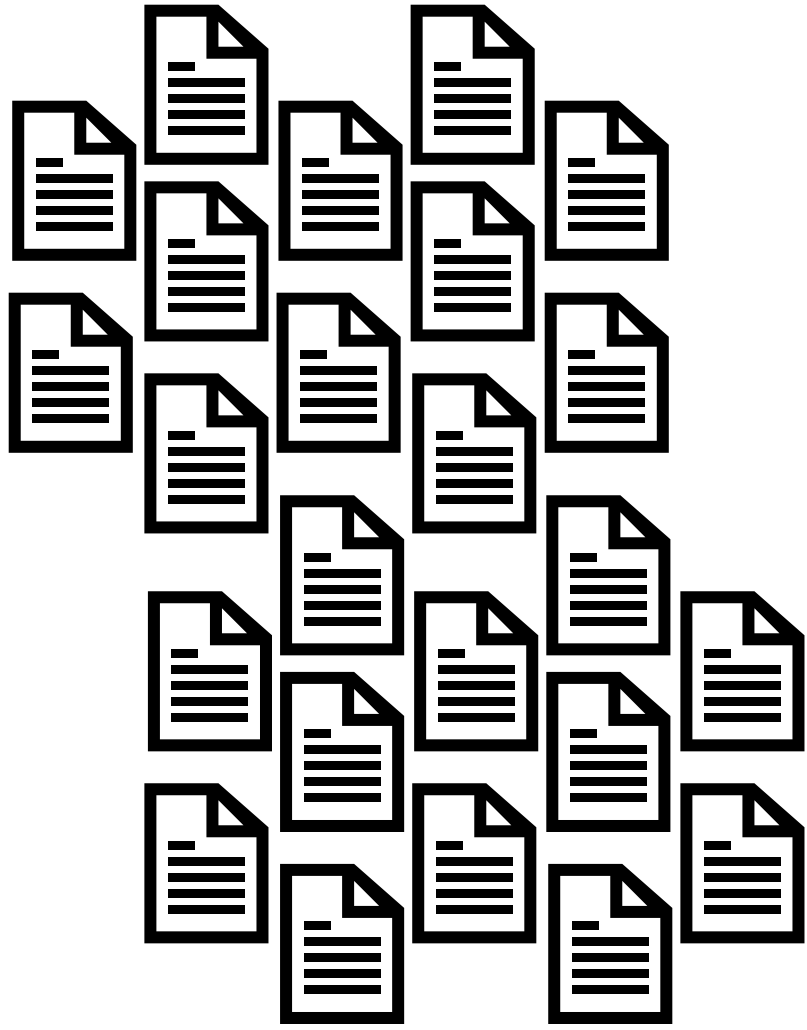
BREAKING
DOWN A
TASK INTO A
SERIES OF
STEPS THAT
CAN BE
FOLLOWED

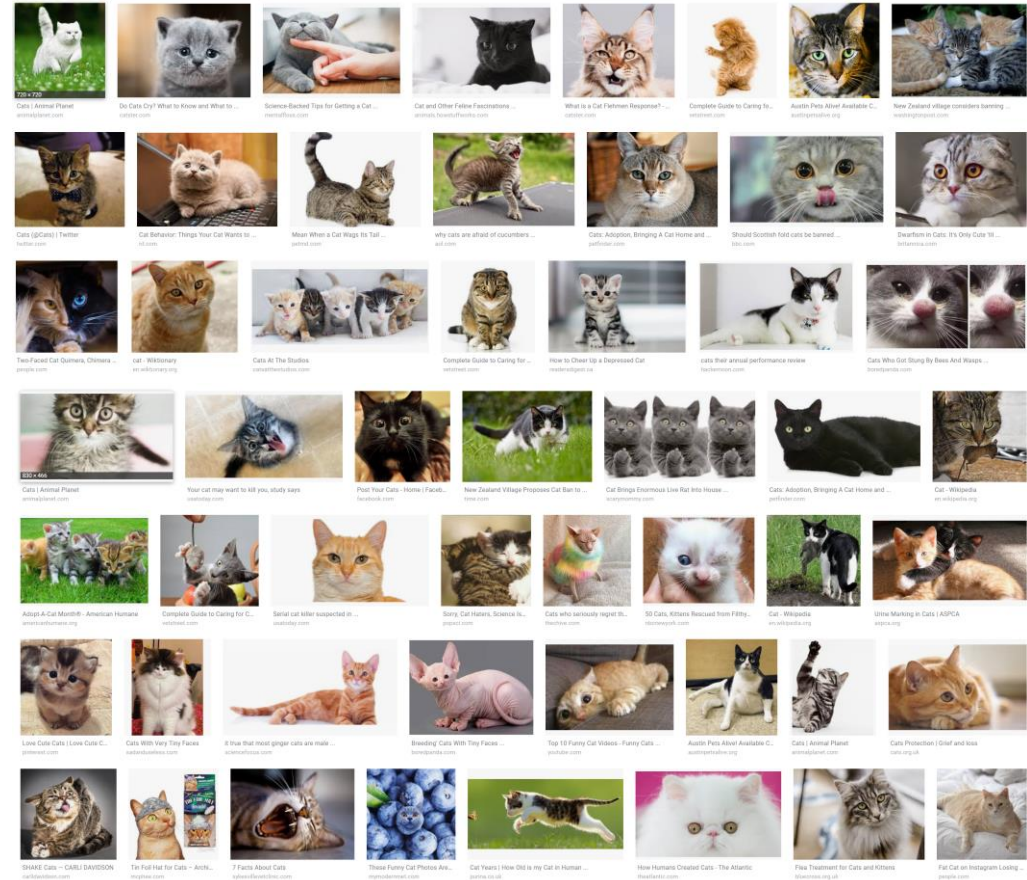

```
when clicked
  go to x: 0 y: 90
  delete all of Players
  delete all of Player ID
  forever
    if screen = title then
      show
    else
      hide
```

```
when clicked
  set frame to 0
  forever
    point in direction 90 + sin of frame * 20
    change frame by 15
```

MACHINE LEARNING

LEARNING
HOW TO
PERFORM A
TASK FROM A
COLLECTION
OF EXAMPLES





Images from Google Search for "cats"

AI Assistant



Integrate diverse conversation technology into your application.

[Watson Assistant](#)

Build an AI assistant for a variety of channels, including mobile devices, messaging platforms, and even robots.

Knowledge



Get insights through accelerated data optimization capabilities.

[Discovery](#)

Unlock hidden value in data to find answers, monitor trends and surface patterns.

[Discovery News](#)

Access pre-enriched news content in real-time.

[Natural Language Understanding](#)

Natural language processing for advanced text analysis.

[Knowledge Studio](#)

Teach Watson to discover meaningful insights in unstructured text.

Empathy



Understand tone, personality, and emotional state.

[Personality Insights](#)

Predict personality characteristics through text.

[Tone Analyzer](#)

Understand emotions and communication style in text.

Vision



Identify and tag content then analyze and extract detailed information found in an image.

[Visual Recognition](#)

Tag and classify visual content using machine learning.

Speech



Convert text and speech with the ability to customize models.

[Speech to Text](#)

Easily convert audio and voice into written text.

[Text to Speech](#)

Convert written text into natural-sounding audio.

Language



Analyze text and extract meta-data from unstructured content.

[Language Translator](#)

Translate text from one language to another.

[Natural Language Classifier](#)

Interpret and classify natural language with confidence.

HANDS-ON ACTIVITY

- Create a sprite in Scratch
- Program it to recognize a kind sentence and a mean sentence
- Create a machine learning model using Watson
- Teach the model with examples of kind and mean sentences
- Use the model for your sprite
- Voila! It learns!



LET'S GET STARTED!

CONCEPTS

- Sentiment Analysis
- Supervised Learning

QUICK SURVEY

- Was this fun?
- Do you want to do this again with another project?
- Would you like to work with a friend?