Stuff to do:
Reintroduce yourselves
Decide on what yall think is cool!
Come up with a plan for the next few weeks

Notes doc for yall:
https://docs.google.com/document/d/1GvcSm_tshQjKU-h5DEsBiPvAyol8Xtfqfet-u-zEEM8/edit

Slides from kickoff:
https://docs.google.com/presentation/d/1pHRqZxN_wAQaIJPfMIzjkw8SBNSTtUW0JYDgK4P7-wQ/edit#slide=id.g2b36ccdb742_0_5

Themes:
- Quality of life
- Productivity
- Food
- Environment

Ideas:
- **[Productivity/Quality of Life] —** Sentiment analysis using text – NLP
    - Build machine to detect sentiment/emotion for given audio data
        - huggingFace – a lot of existing sentiment analysis models
    - Data could include: human speech, music, opera, etc.
    - Example: Customer service chatbots that would detect the urgency of their issue
        - Could be applied to UCSD IT department's service now email ticketing system to detect urgency of issue
    - For audio: sorts a call based on urgency
    - Emotion and tone detection to an email and give suggestions on how to alter it to sound more like what you want

https://www.geeksforgeeks.org/natural-language-processing-nlp-tutorial/ – start off here maybe

- **[Productivity/Quality of Life] —** Target a research lab on campus and aid them in finding a solution in their research with an AI algorithm
    - Then we could present it to them at the end
- AI powered automation for documentation (automate certain tasks that can be done autonomously/ like an online bot)
- Funny not an actual idea: Predicting where costco is going to move their products

Timeline:

April 4th is showcase
8 weeks

Next week: look into NLP

March 1st: midpoint showcase → GOAL: make a NLP algorithm something that works!!

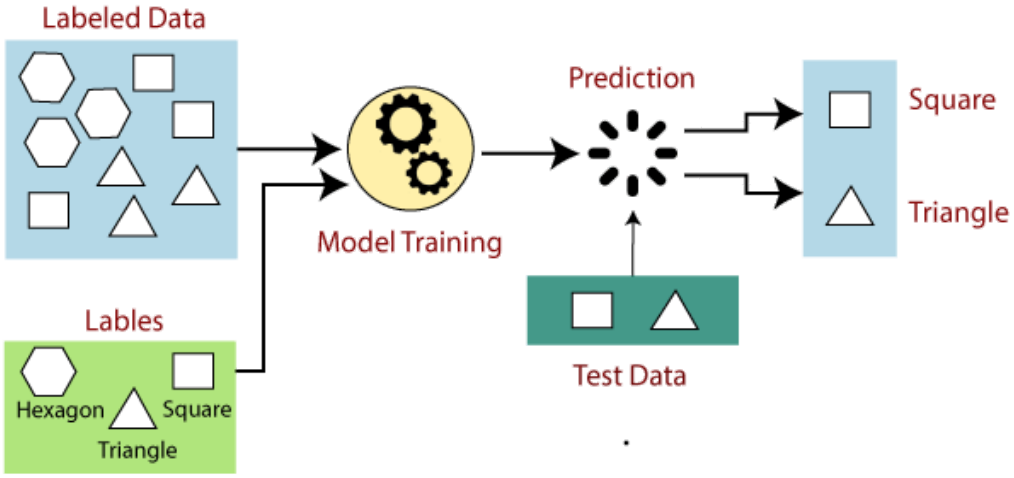
Goals for next monday Feb 5:

1. Resources for reading up on AI/ML basics:
2. How to code NPL
3. Each find 2 or 3 data sets

Intro video to ML:
https://www.youtube.com/watch?v=Gv9_4yMHFhI&list=PLblh5JKOoLUICTaGLRoHQDuF_7q2GfuJF&index=2

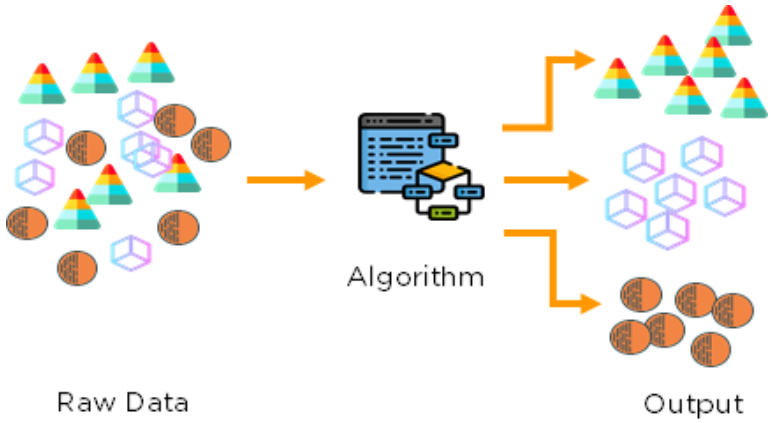
Supervised learning: https://www.ibm.com/topics/supervised-learning

- Involves classifying data using labels (feeding in info based on what you label)



Unsupervised learning: https://www.ibm.com/topics/unsupervised-learning

- No labels involved in the process - the AI learns along the way



Parts of developing your model:

Preprocessing the data (both testing and normal data)
Developing classes, having a sort of

Training:

- Model makes predictions on what class each sample is
- Evaluate accuracy

Testing:

- Involves running your model on data that the model hasn't seen before.
- Show that ur model can generalize predictions

How is data structured:

- Number of features
- Labels or no?
- Number of classes

Loss functions/gradient functions:

Gradient descent: https://www.youtube.com/watch?v=sDv4f4s2SB8

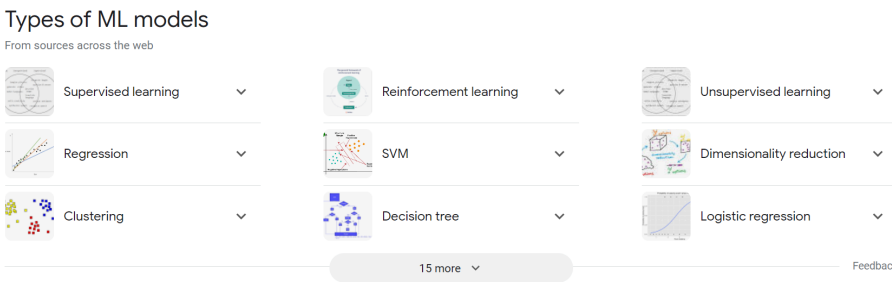
Three blue one brown (more geared towards neural networks):
https://www.youtube.com/watch?v=IHZwWFHWa-w

Types of networks:

- Perceptrons, which is a very basic type of neural network
- Convolutional Neural Networks, which are often used for Computer Vision
- Recurrent Neural Networks, often used in Natural Language Processing
- Generative Adversarial Networks, used a lot for Generative AI

Neural network vid by three blue one brown again LOL:
https://www.youtube.com/playlist?list=PLZHQObOWTQDNU6R1_67000Dx_ZCJB-3pi

Convolutional neural networks (mostly used for image recognition – what I ended up doing during the fall project):
https://www.geeksforgeeks.org/introduction-convolution-neural-network/



Obviously theres a lot of different types of models, what we end up using depends on what we choose as our project (ideally we start out simple and implement more later on)

Tensorflow tutorials: https://www.tensorflow.org/tutorials