Predicting Stress Levels with Social Media Usage Data

Objective

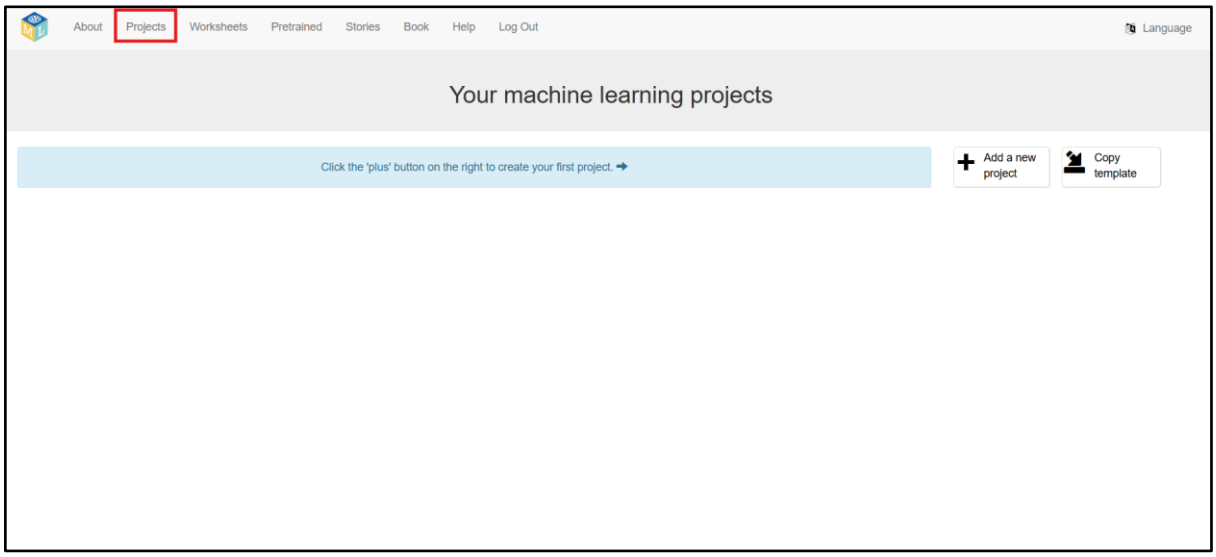
We want to predict the level of user stress, taking into account certain demographic metrics, related to the person's daily habits, lifestyle and use of Instagram

Dataset

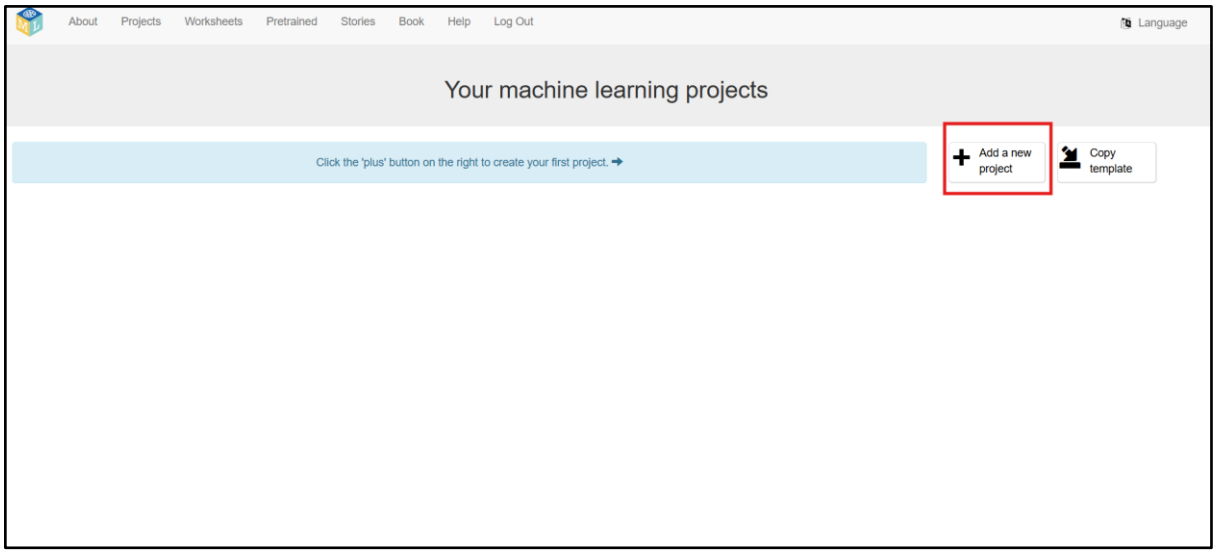
- Initial dataset: **https://www.kaggle.com/datasets/rockyt07/social-media-user-analysis/data**
- Useful data columns for our app:
    - Not all columns of data are useful for the development of our app, so we only keep the most relevant ones.
    - The columns we use are:
        - **age** (number)
        - **sleep_hours_per_night** (number)
        - **exercise_hours_per_week** (number)
        - **daily_active_minutes_instagram** (number)
        - **reels_watched_per_day** (number)
        - **time_on_feed_per_day** (number)
        - **posts_created_per_week** (number)
        - **notification_response_rate** (number in space [0.1])
        - **weekly_work_hours** (number)
        - **perceived_stress_score**
- We need to convert the dataset to be suitable for ML4kids
    - Column names must be <13 characters long
    - The file must contain up to 150 rows
    - You can find the datasets you will use here: **Training Dataset**

Create, train, learn, and test

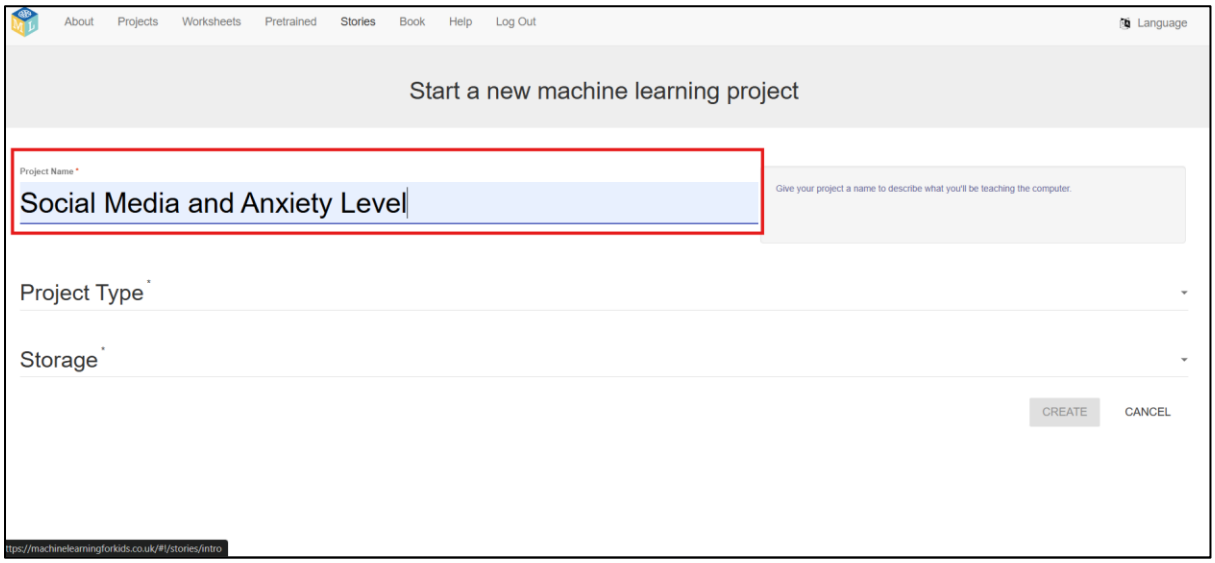
- Go to https://machinelearningforkids.co.uk/
- "**Log in**" (top right)
- Go to the "**Projects**" tab (top left)



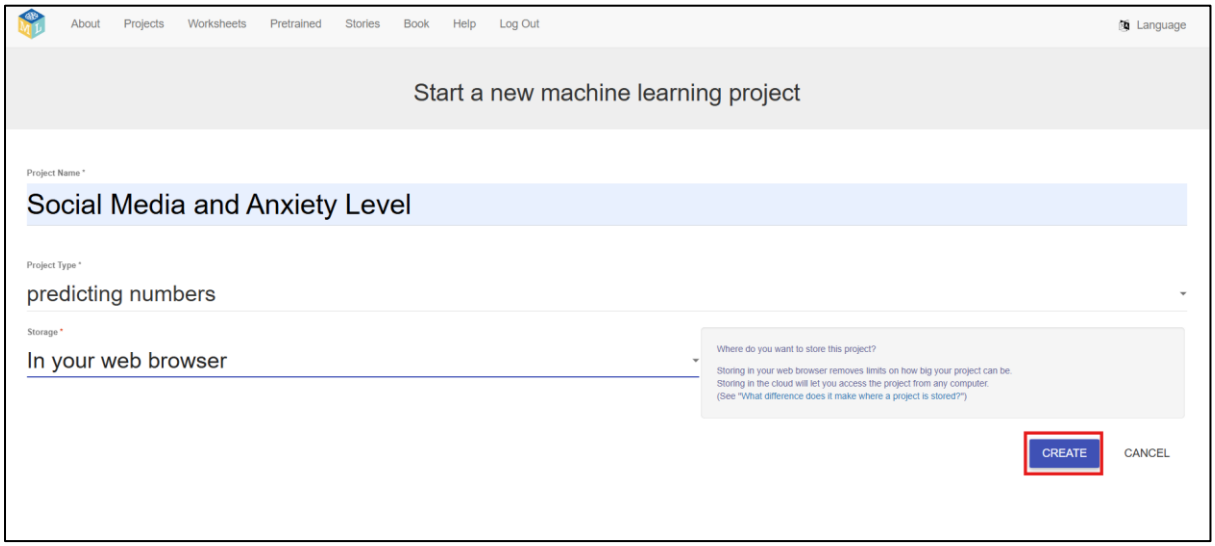
- click on "**Add a new project**"



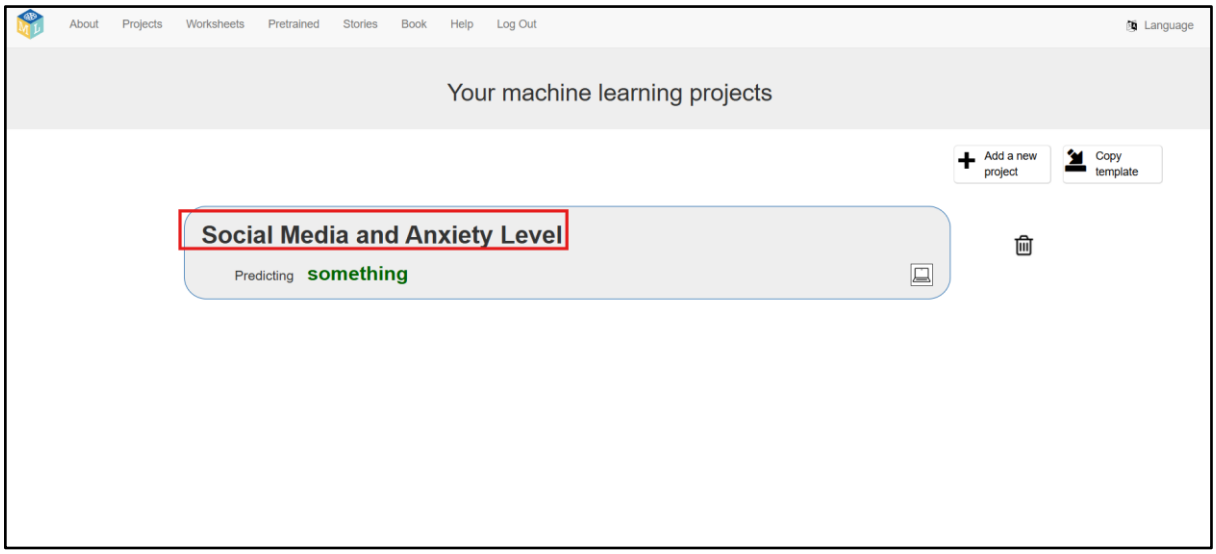
- Type in a "**Project Name**"



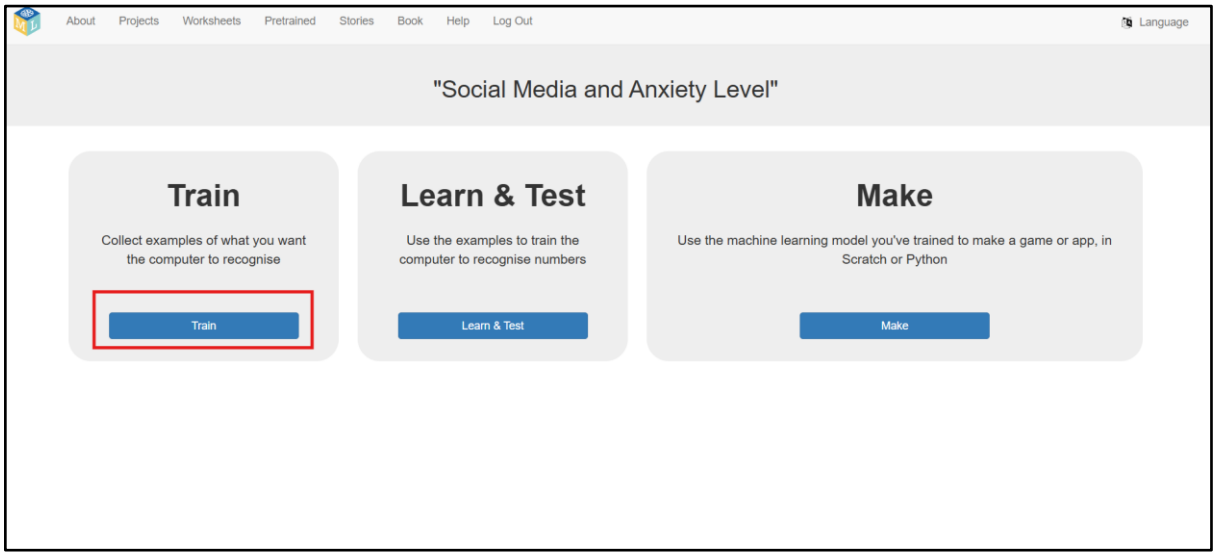
- In the "**Project Type**" field from the drop-down menu, select:
  - "**predicting numbers**"
- Save "**In your web browser**"
- Then click "CREATE"



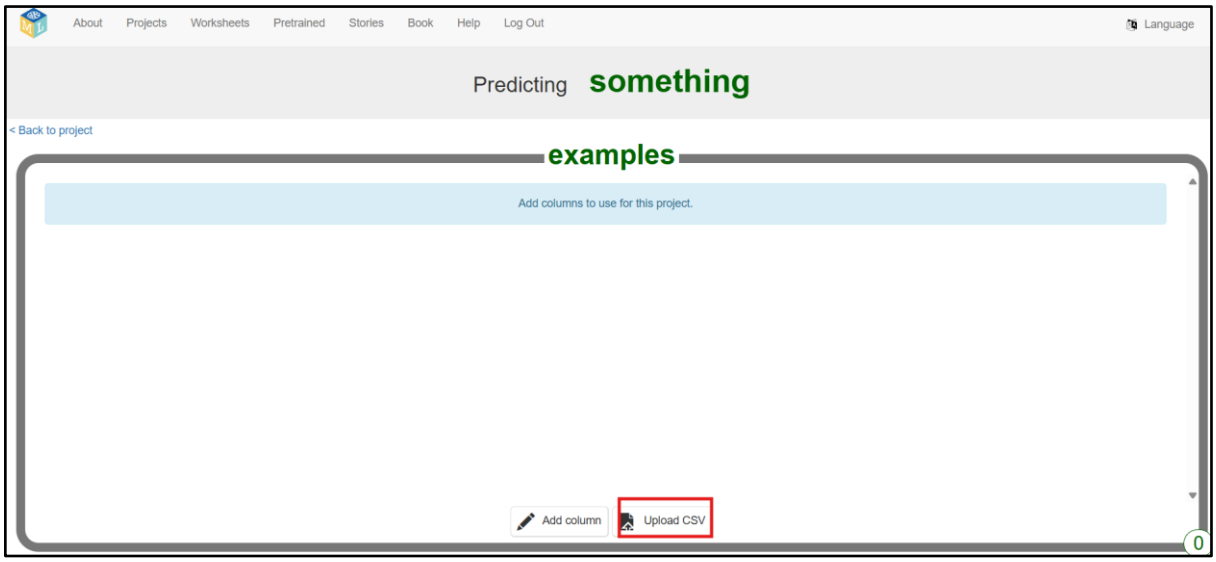
- Your screen should look like this:



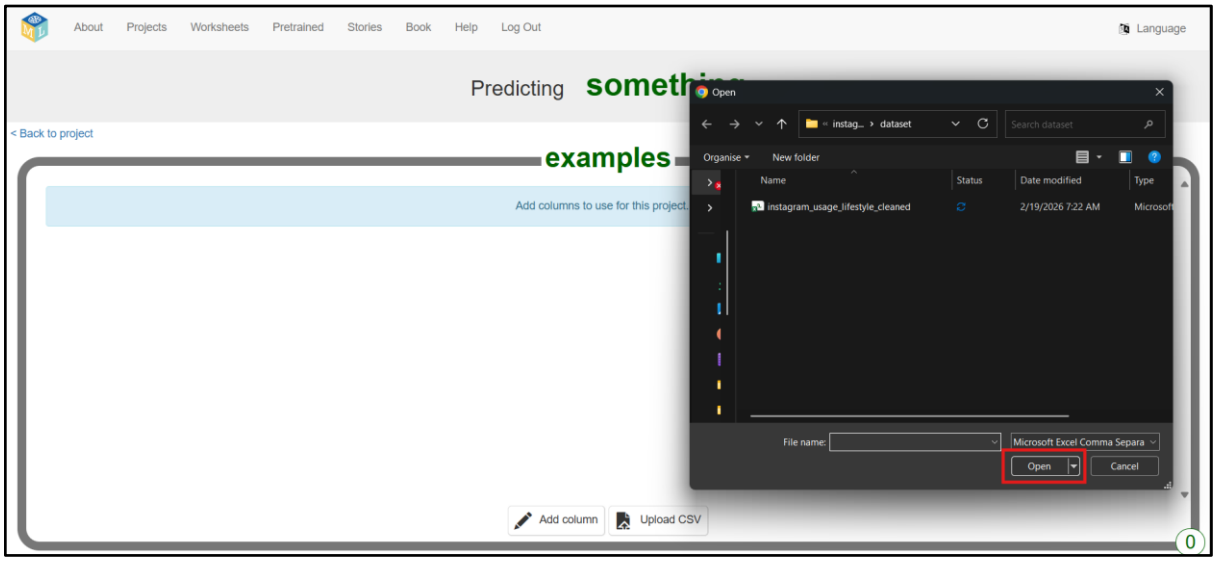
- Click on the title of the project
- Go to the "**Train**" tab.



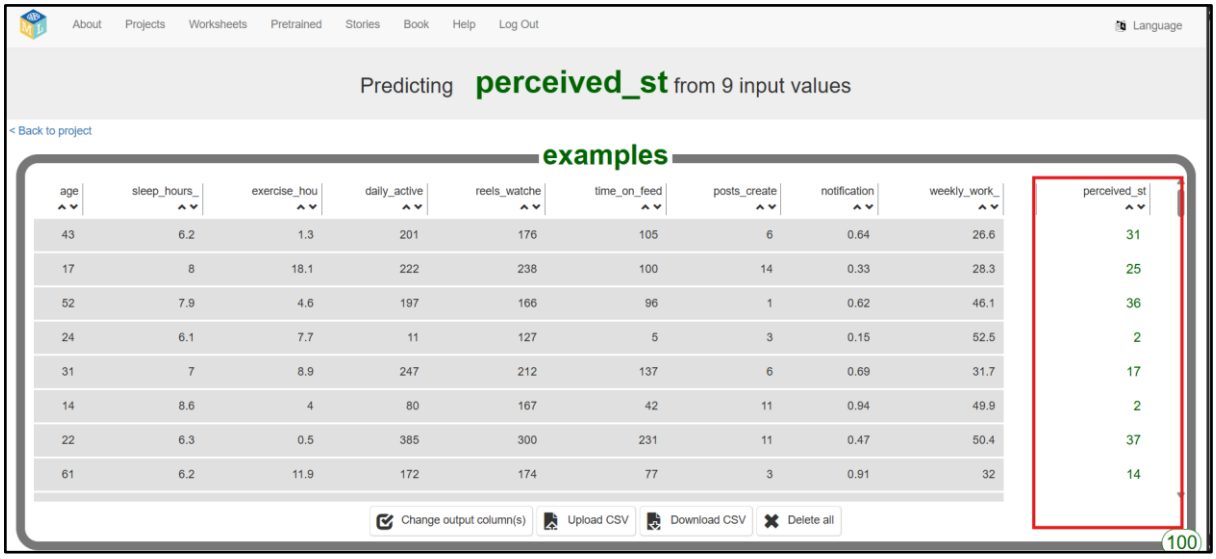
- Click "**Upload CSV**"



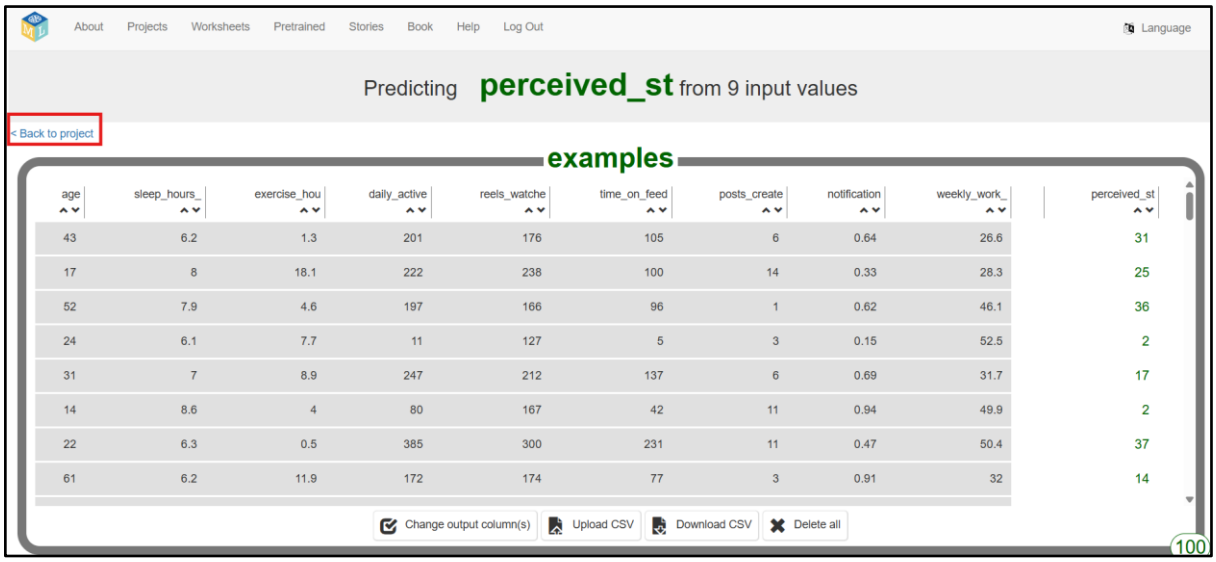
- Select the file and click "**Open**"



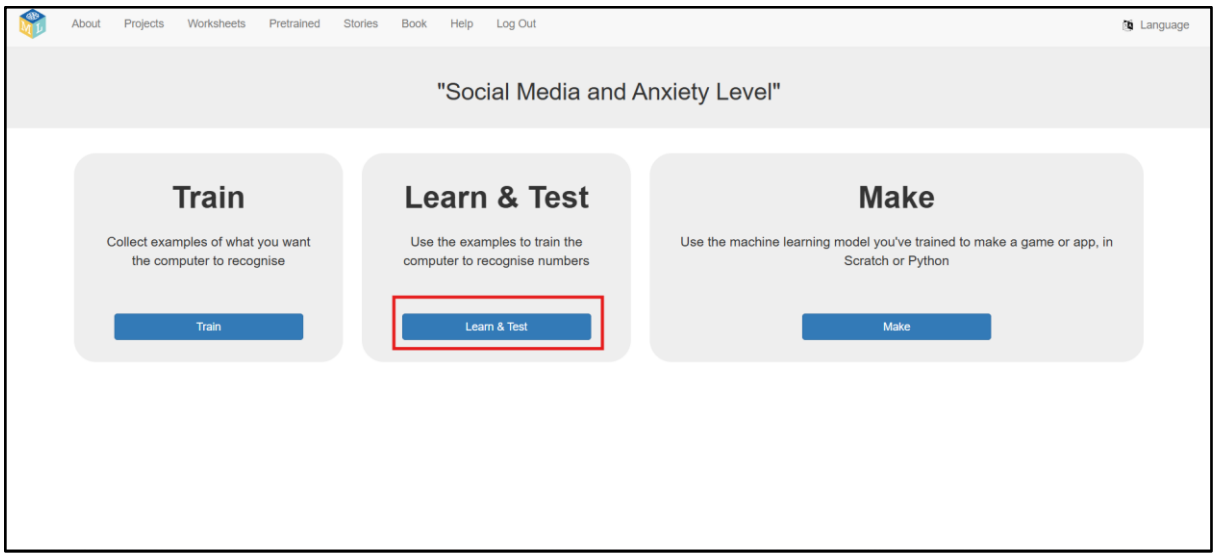
- Select the "**perceived_st**" column. This is the column that the model will predict



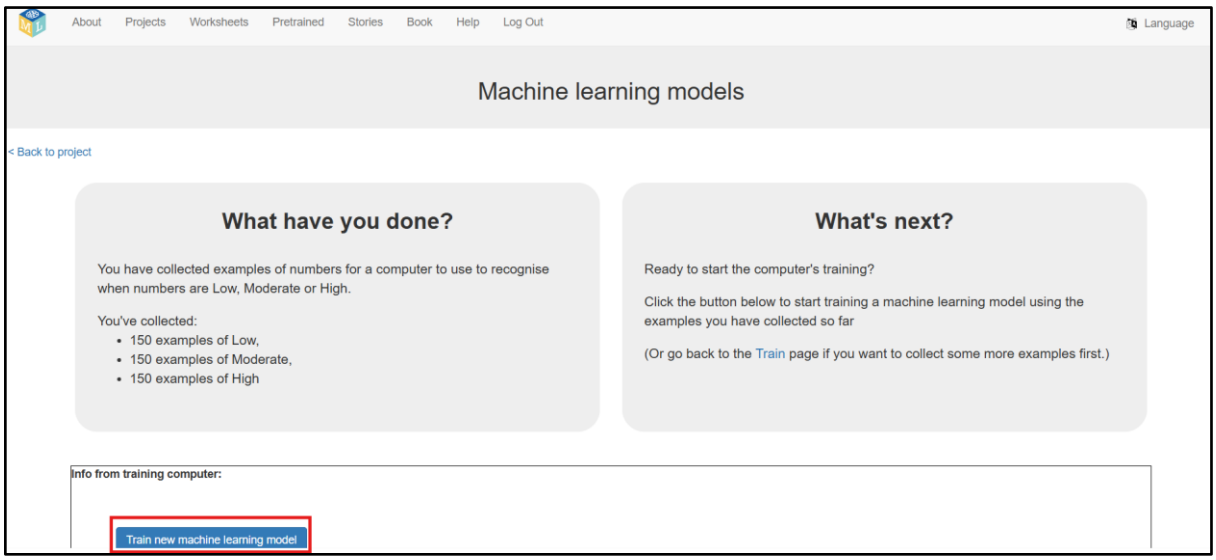
- Click on "**Back to project**"



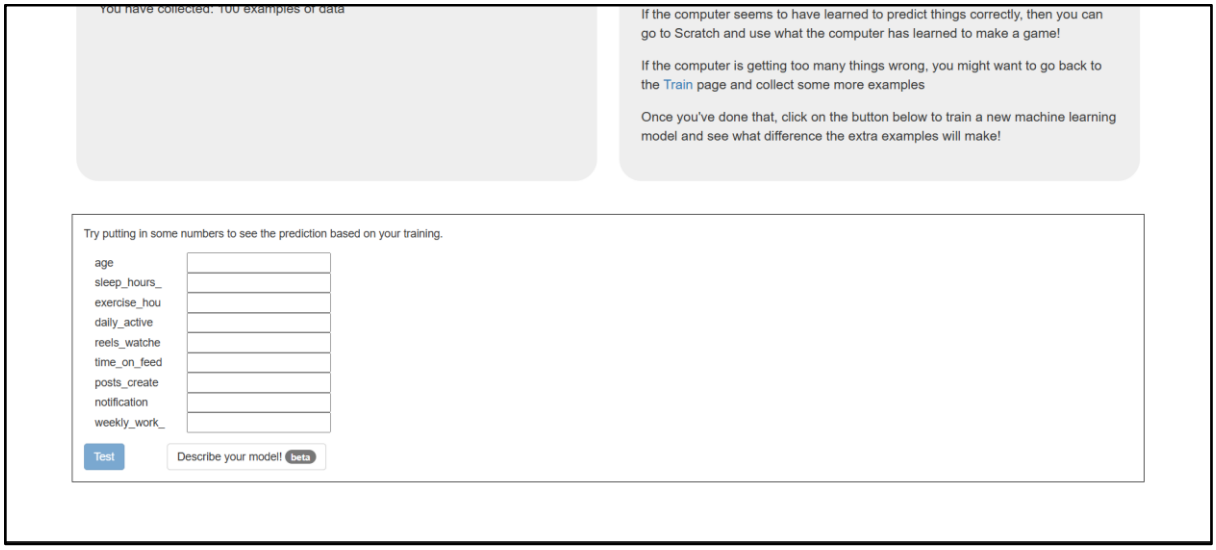
- Go back click on "**Learn & Test**"



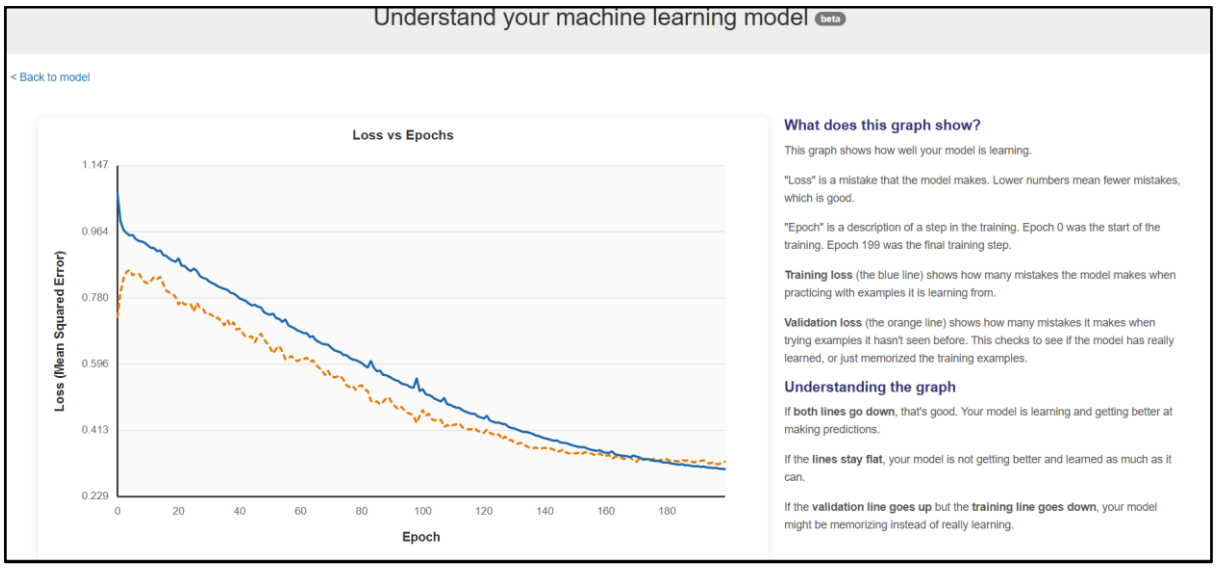
- Click on "**Train new machine learning model**"



- Your screen after a few seconds should look like this:
- Test your model by adding values to the appropriate fields from the **Test Dataset** file and click "**Test**". "**Prediction**" will display the model's prediction of a person's stress levels with the characteristics you entered



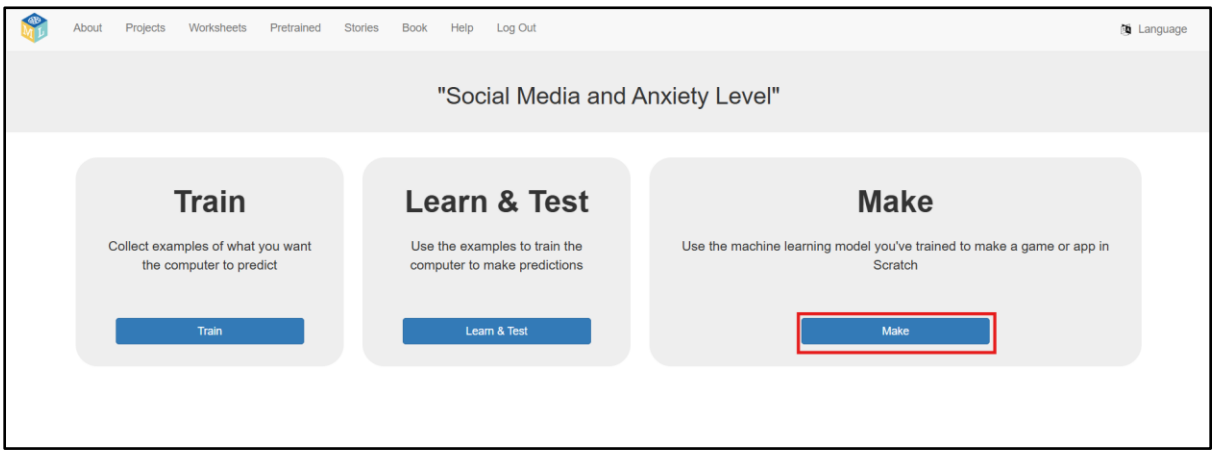
- You can also see "**Describe your model**" to see the loss function



- Click "**Back to model**" (top left)
- Click on "**Back to project**" (top left)

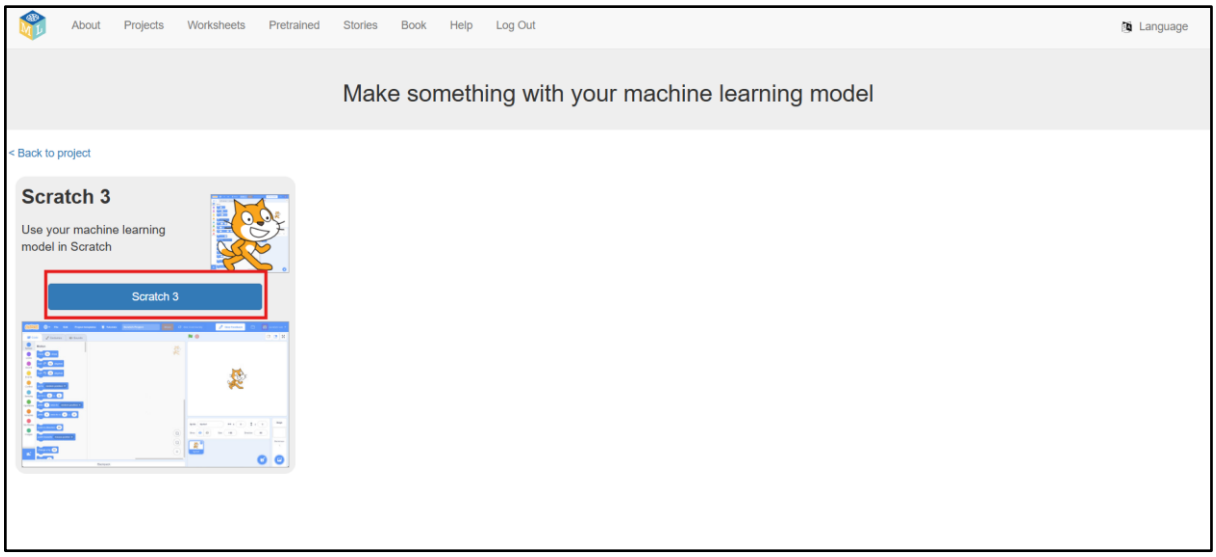
Implementation

- Click "**Make**"

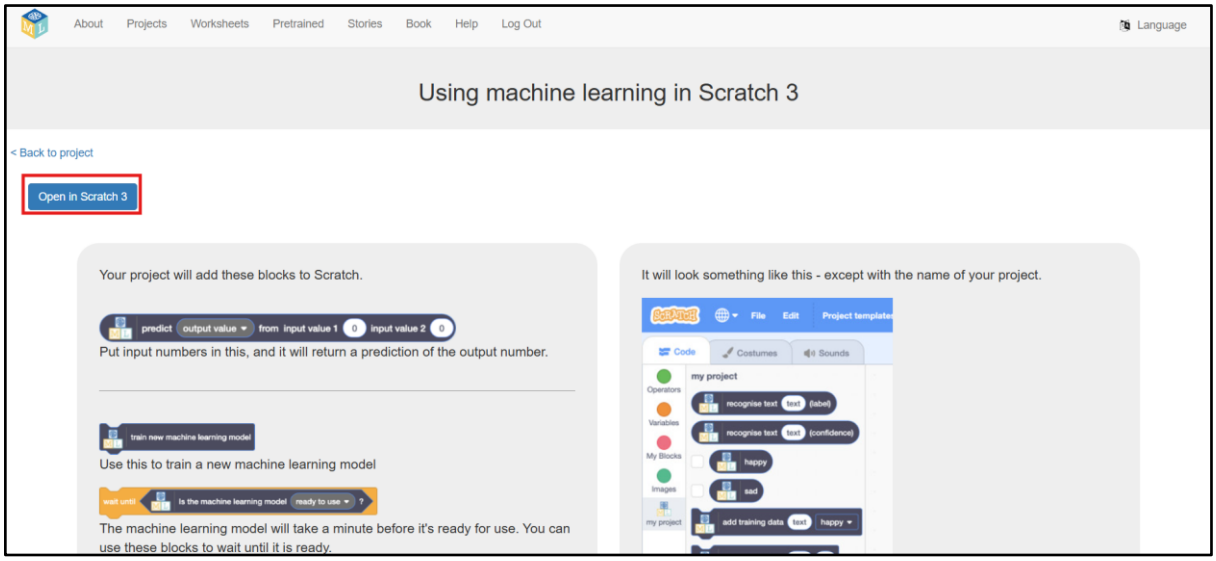


- Our model predicts a number in the range [0.40]
    - Lower numbers indicate less stress
    - Higher numbers indicate more anxiety
- We'll "write" code to interpret the model's prediction as:
    - if the output is between 0-20, then our code will return "**Low Stress Level**"
    - if the output is between 20-30, then our code will return "**Moderate Stress Level**"
    - if the output is between 30-40, then our code will return "**High Stress Level**"

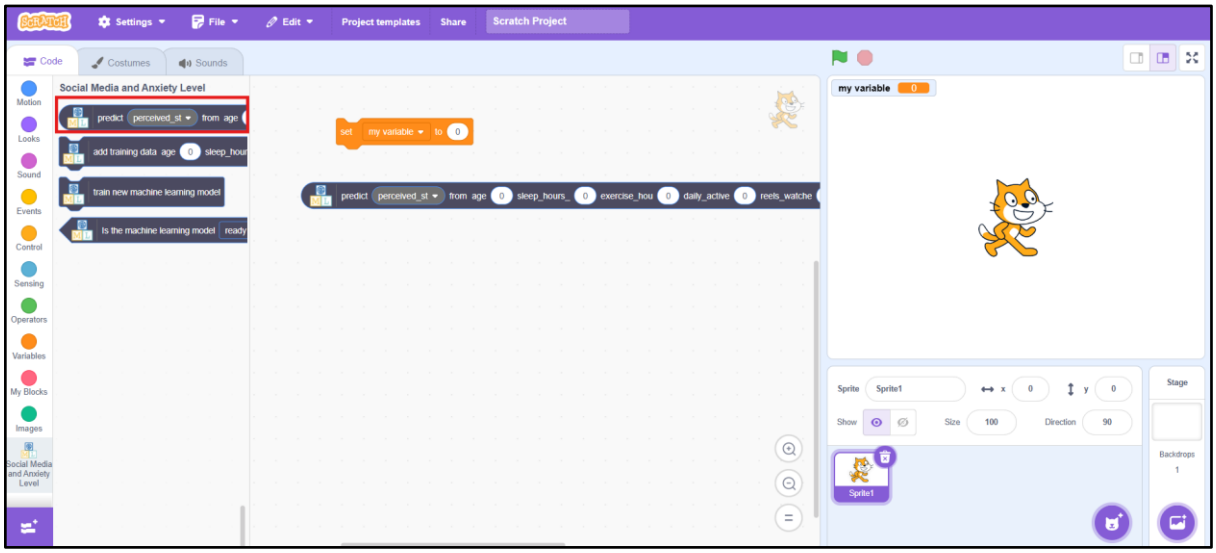
- Click on "**Scratch 3**"



- Click on "**Open in Scratch 3**"



- Map the model's prediction to a variable



- Generate the code you see below: