

Predicting Stress Levels with Social Media Usage Data

| | |
|--------------------------------------|---|
| Objective..... | 1 |
| Dataset | 1 |
| Create, train, learn, and test | 2 |
| Implementation | 8 |

Objective

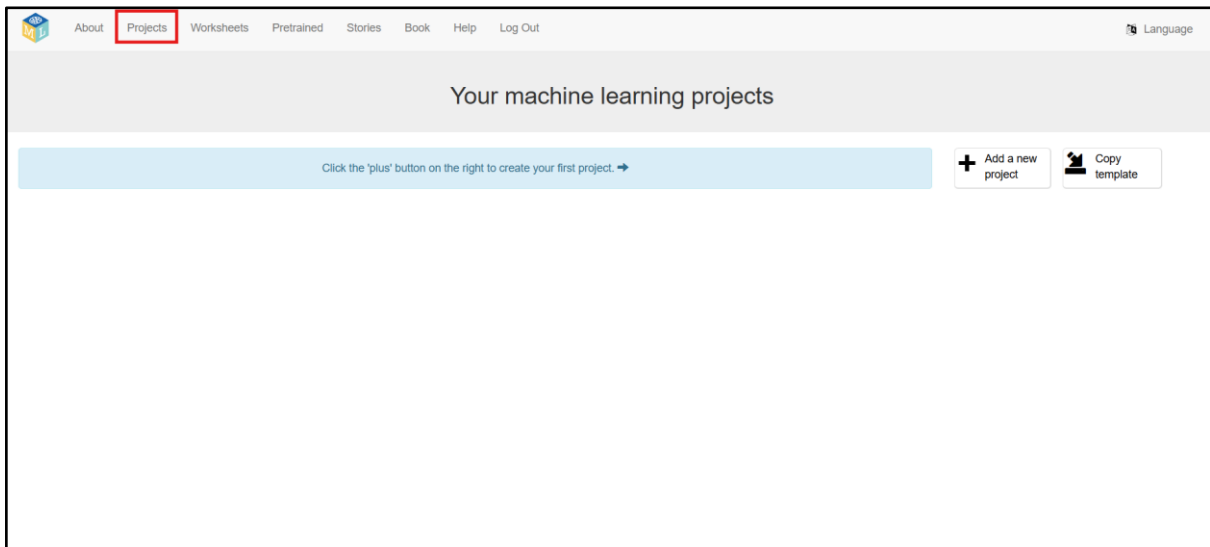
We want to predict the level of user stress, taking into account certain demographic metrics, related to the person's daily habits, lifestyle and use of Instagram

Dataset

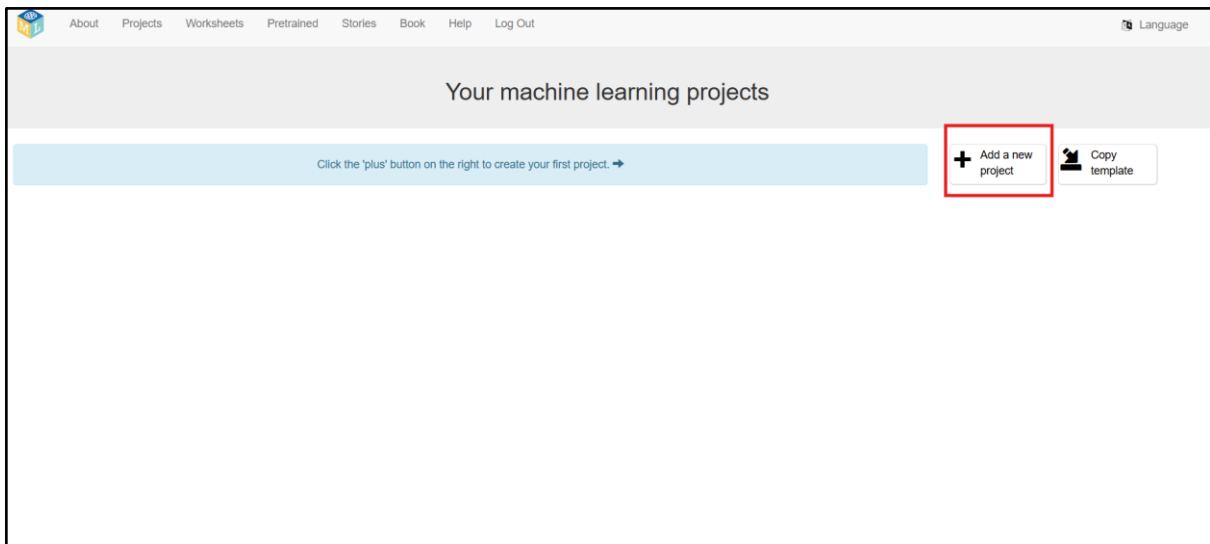
- Initial dataset:
<https://www.kaggle.com/datasets/rockyt07/social-media-user-analysis/data>
- Useful data columns for our app:
 - Not all columns of data are useful for the development of our app, so we only keep the most relevant ones.
 - The columns we use are:
 - **age** (number)
 - **sleep_hours_per_night** (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"

Start a new machine learning project

Project Name *
Social Media and Anxiety Level

Give your project a name to describe what you'll be teaching the computer.

Project Type *
Storage *

CREATE CANCEL

<https://machinelearningforkids.co.uk/#/stories/intro>

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

Start a new machine learning project

Project Name *
Social Media and Anxiety Level

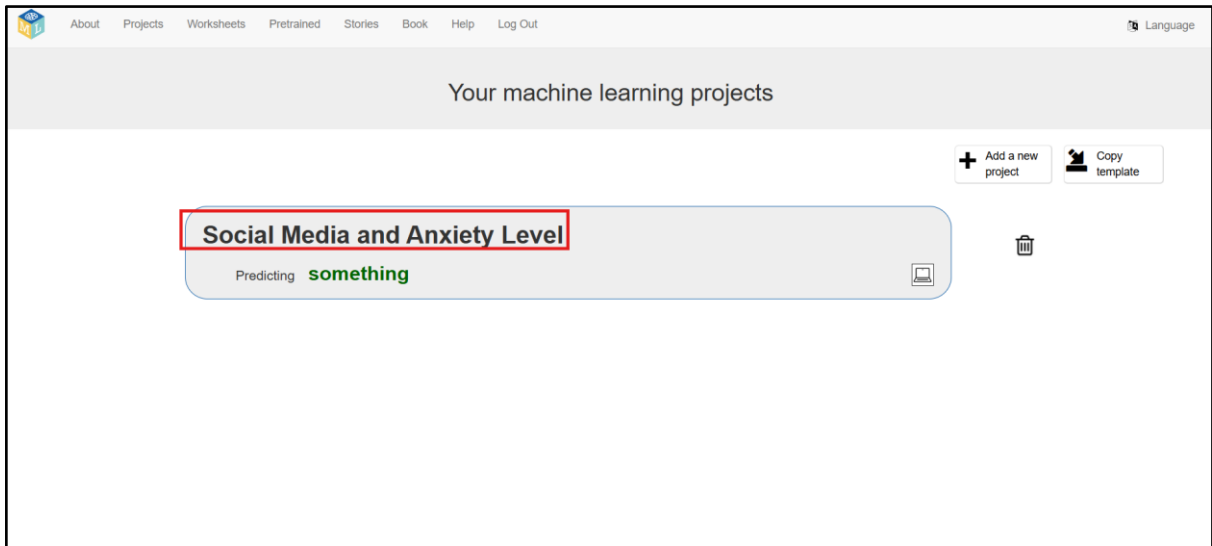
Project Type *
predicting numbers

Storage *
In your web browser

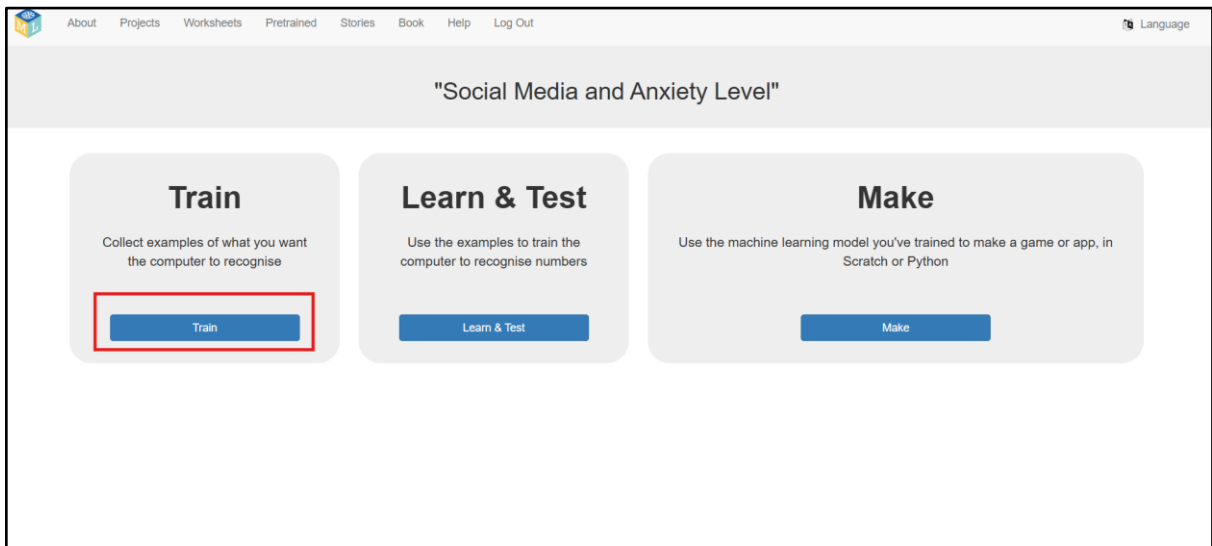
Where do you want to store this project?
Storing in your web browser removes limits on how big your project can be.
Storing in the cloud will let you access the project from any computer.
(See "What difference does it make where a project is stored?")

CREATE CANCEL

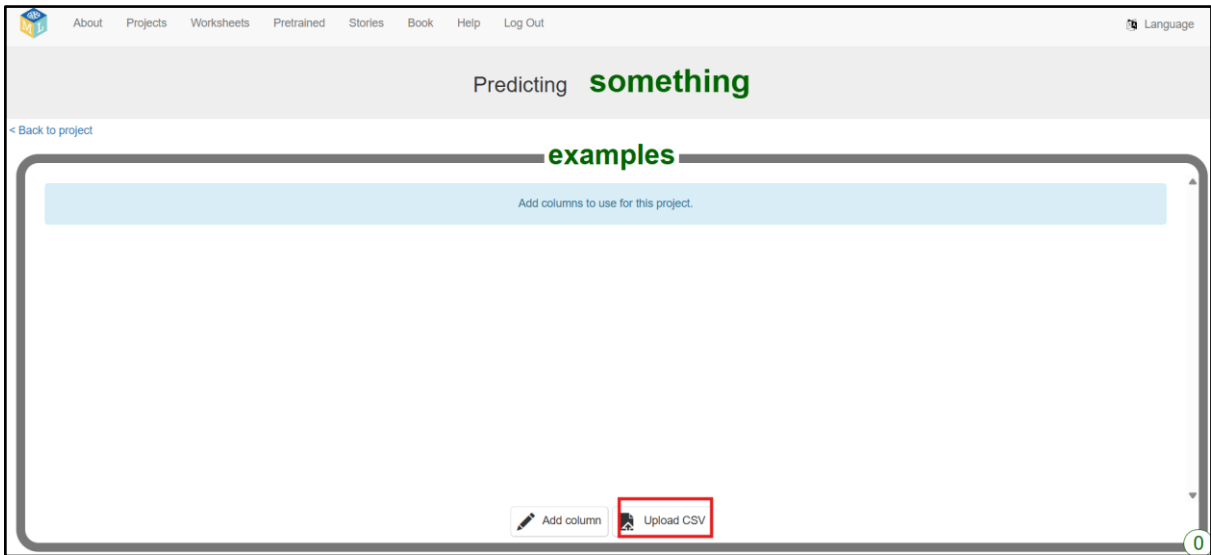
- Your screen should look like this:



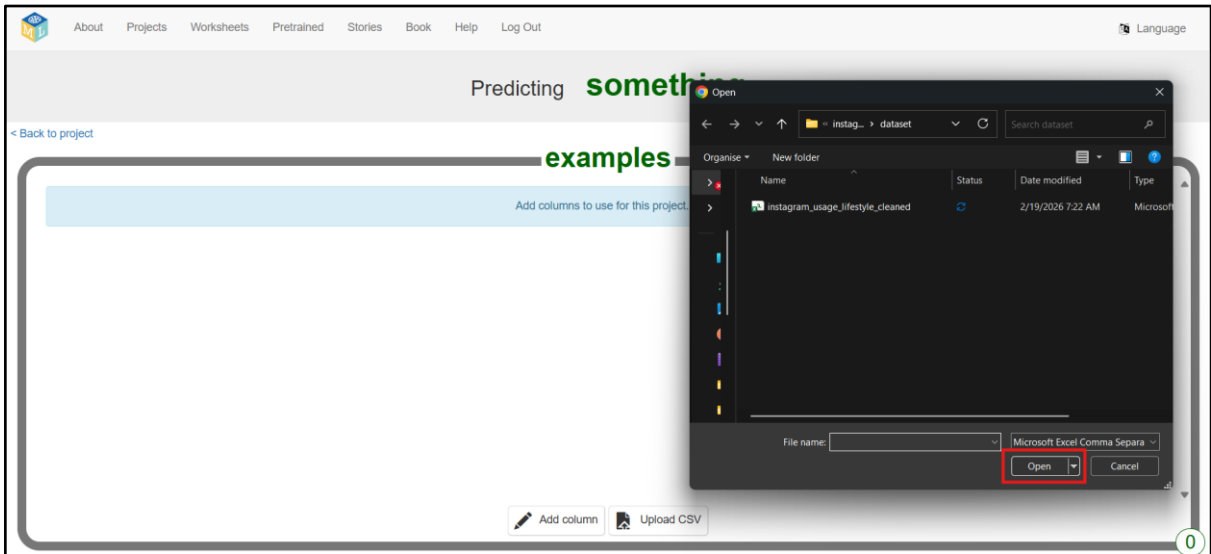
- Click on the title of the project
- Go to the "Train" tab.



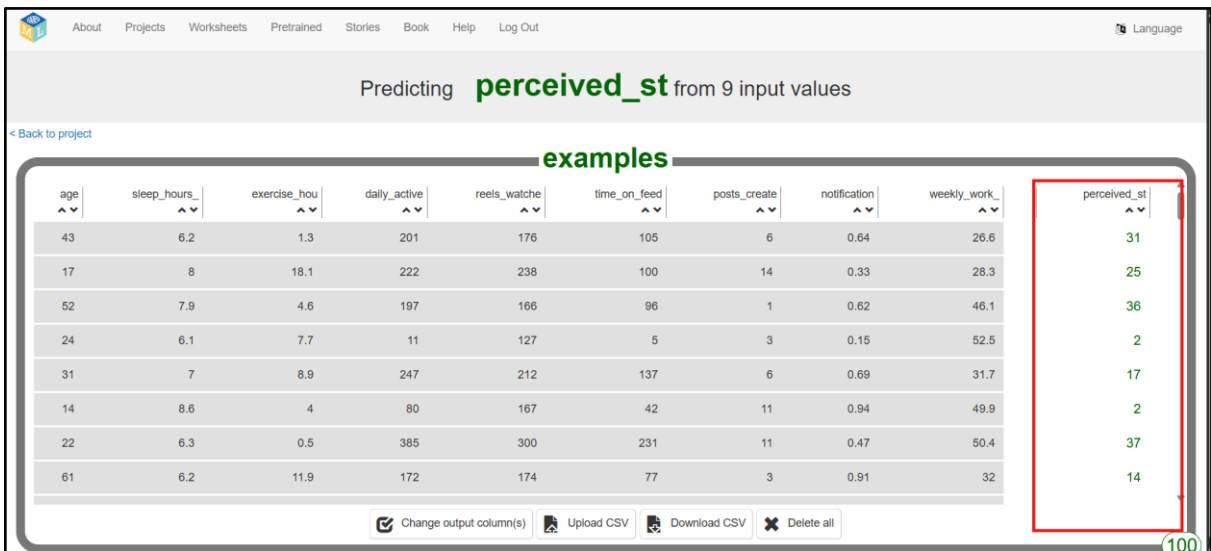
- Click "Upload CSV"



- 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"

Predicting **perceived_st** from 9 input values

[← Back to project](#)

examples

| age | sleep_hours_ | exercise_hou | daily_active | reels_watche | time_on_feed | posts_create | notification | weekly_work_ | perceived_st |
|-----|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 43 | 6.2 | 1.3 | 201 | 176 | 105 | 6 | 0.64 | 26.6 | 31 |
| 17 | 8 | 18.1 | 222 | 238 | 100 | 14 | 0.33 | 28.3 | 25 |
| 52 | 7.9 | 4.6 | 197 | 166 | 96 | 1 | 0.62 | 46.1 | 36 |
| 24 | 6.1 | 7.7 | 11 | 127 | 5 | 3 | 0.15 | 52.5 | 2 |
| 31 | 7 | 8.9 | 247 | 212 | 137 | 6 | 0.69 | 31.7 | 17 |
| 14 | 8.6 | 4 | 80 | 167 | 42 | 11 | 0.94 | 49.9 | 2 |
| 22 | 6.3 | 0.5 | 385 | 300 | 231 | 11 | 0.47 | 50.4 | 37 |
| 61 | 6.2 | 11.9 | 172 | 174 | 77 | 3 | 0.91 | 32 | 14 |

Change output column(s) Upload CSV Download CSV Delete all

- Go back click on "Learn & Test"

"Social Media and Anxiety Level"

Train

Collect examples of what you want the computer to recognise

[Train](#)

Learn & Test

Use the examples to train the computer to recognise numbers

[Learn & Test](#)

Make

Use the machine learning model you've trained to make a game or app, in Scratch or Python

[Make](#)

- Click on "Train new machine learning model"

Machine learning models

[← Back to project](#)

What have you done?

You have collected examples of numbers for a computer to use to recognise when numbers are Low, Moderate or High.

You've collected:

- 150 examples of Low,
- 150 examples of Moderate,
- 150 examples of High

What's next?

Ready to start the computer's training?

Click the button below to start training a machine learning model using the examples you have collected so far

(Or go back to the [Train](#) page if you want to collect some more examples first.)

Info from training computer:

[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 have collected: 100 examples of data

If the computer seems to have learned to predict things correctly, then you can go to Scratch and use what the computer has learned to make a game!

If the computer is getting too many things wrong, you might want to go back to the [Train](#) page and collect some more examples

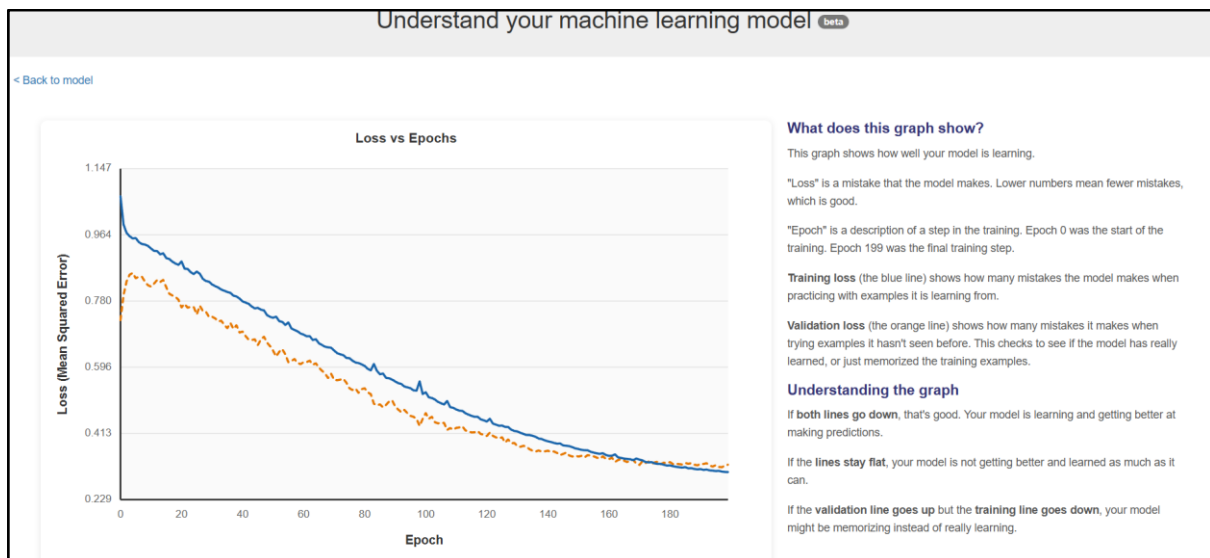
Once you've done that, click on the button below to train a new machine learning model and see what difference the extra examples will make!

Try putting in some numbers to see the prediction based on your training.

| | |
|--------------|----------------------|
| age | <input type="text"/> |
| sleep_hours_ | <input type="text"/> |
| exercise_hou | <input type="text"/> |
| daily_active | <input type="text"/> |
| reels_watc | <input type="text"/> |
| time_on_feed | <input type="text"/> |
| posts_create | <input type="text"/> |
| notification | <input type="text"/> |
| weekly_work_ | <input type="text"/> |

Test
Describe your model! beta

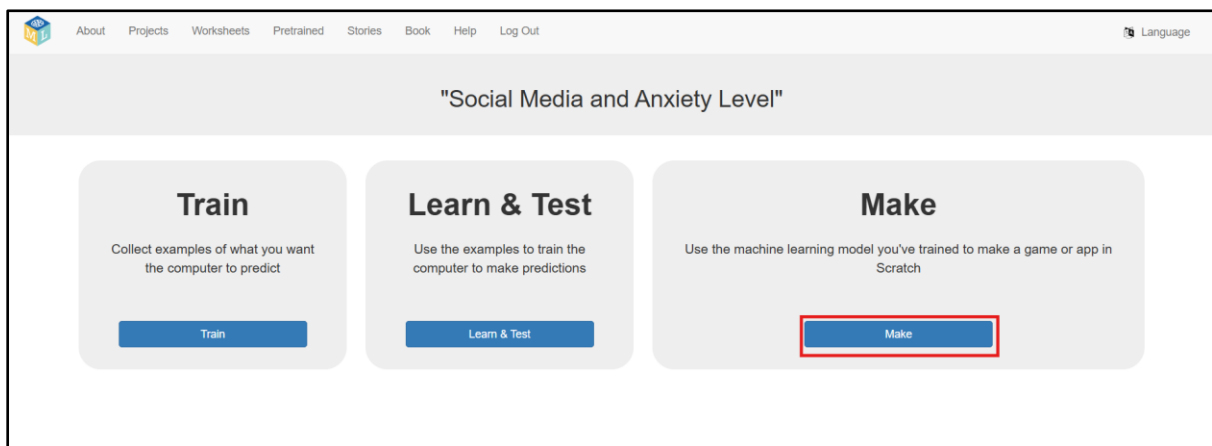
- You can also see "Describe your model" to see the loss function



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

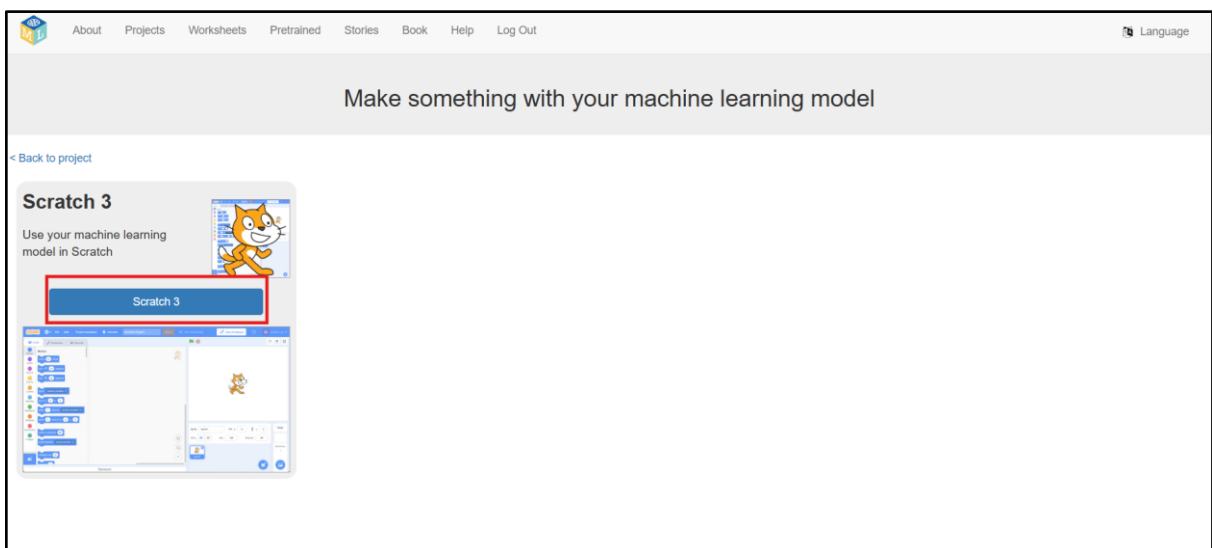
Implementation

- Click "**Make**"

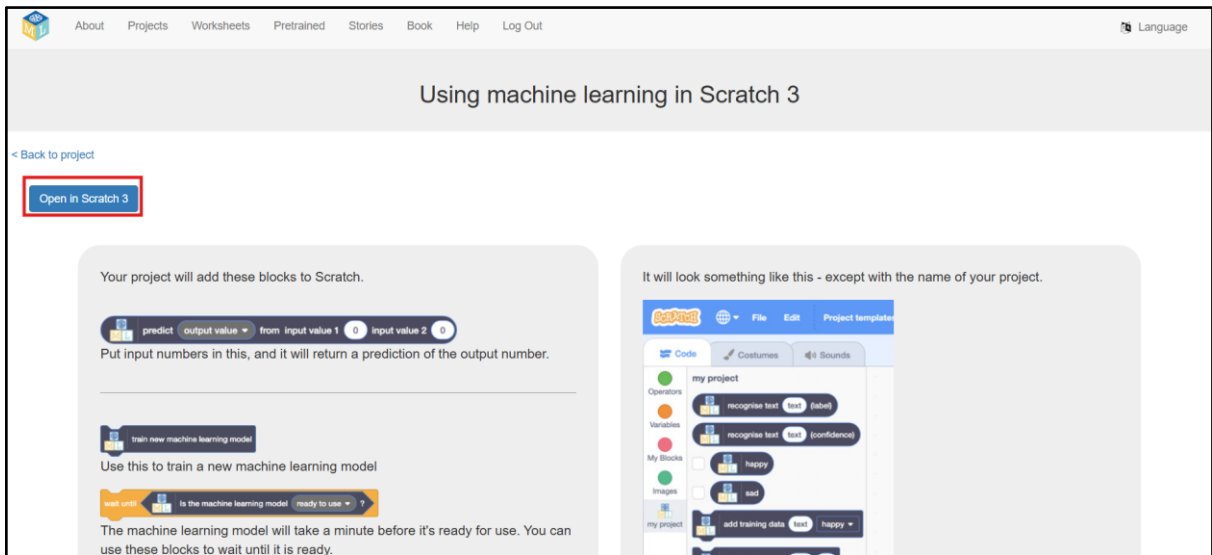


- Our model predicts a number in the range [0.40]
 - Lower numbers indicate less stress
 - Higher numbers indicate more anxiety
- We'll "write" code to interpret the model's prediction as:
 - if the output is between 0-20, then our code will return "**Low Stress Level**"
 - if the output is between 20-30,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

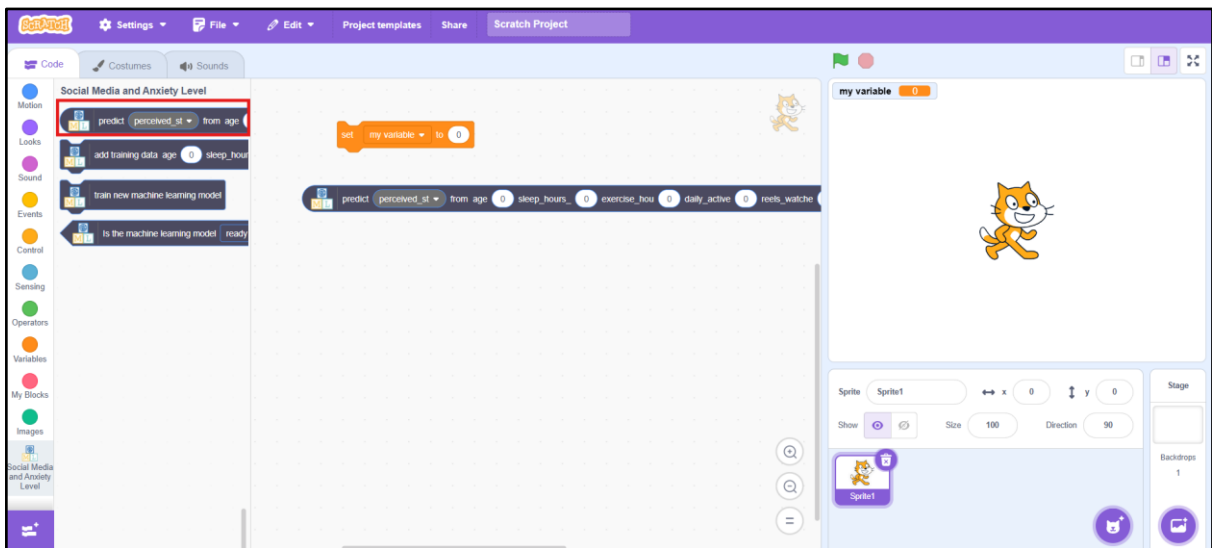
- Click on "**Scratch 3**"



- Click on "Open in Scratch 3"



- Map the model's prediction to a variable



- Generate the code you see below:

