Project 163

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DP EDUCATION Coding School

AI and Machine Learning

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

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See the web page

Start here

❖ Here we look at the homework for lesson 16 of the AI and machine learning course available on Code.org.
❖ In this lesson, you have been given how to select a data set of your choice, train a machine learning model and use it to create a mobile app.
❖ Let's create a mobile app using one of these data sets.
❖ Here, let's select the Car Evaluation data set.

❖ Here let's predict the safety rating of cars.
❖ For that, click on the Safety Rating column and click on the select label.

❖ Now click on continue.

❖ Now calculate the accuracy of the models you can create by selecting each label.

❖ Here, the accuracy of the model prepared by changing the labels is as follows.

Model	Accuracy
Predict Safety Rating based on Car Acceptability, Boot Size, Number Of Doors	54.34%
Predict Safety Rating based on Maintenance Cost, Buying Price	35.26%
Predict Safety Rating based on Car Acceptability, Maintenance Cost	55.49%
Predict Safety Rating based on Car Acceptability, Number of Passengers, Maintenance Cost	56.65%
Predict Safety Rating based on Car Acceptability, Number of Passengers	43.93%
Predict Safety Rating based on Car Acceptability	54.34%
Predict Safety Rating based on Car Acceptability, Boot Size	54.34%
Predict Safety Rating based on Number of Passengers, Boot Size, Car Acceptability, Number Of Doors, Maintenance Cost	49.71%
Predict Safety Rating based on Number of Passengers, Boot Size, Car Acceptability, Number Of Doors	56.07%
Predict Safety Rating based on Number of Passengers, Boot Size, Car Acceptability	49.71%
Predict Safety Rating based on Number of Passengers, Buying Price, Boot Size, Maintenance Cost, Car Acceptability	54.91%
Predict Safety Rating based on Number of Passengers, Buying Price, Boot Size, Maintenance Cost	34.68%
Predict Safety Rating based on Number of Passengers, Car Acceptability, Buying Price, Boot Size	56.07%
Predict Safety Rating based on Number of Passengers, Car Acceptability, Maintenance Cost, Buying Price, Boot Size	57.80%
Predict Safety Rating based on Number of Passengers, Car Acceptability, Maintenance Cost, Buying Price, Boot Size, Number Of Doors	46.82%
Predict Safety Rating based on Number Of Doors, Number of Passengers, Car Acceptability, Maintenance Cost, Buying Price, Boot Size	53.18%
Predict Safety Rating based on Number Of Doors, Number of Passengers, Car Acceptability, Maintenance Cost, Buying Price	51.45%
Predict Safety Rating based on Number Of Doors, Number of Passengers, Car Acceptability	49.13%
Predict Safety Rating based on Number Of Doors, Number of Passengers, Boot Size	31.79%
Predict Safety Rating based on Buying Price, Number Of Doors, Maintenance Cost, Number of Passengers, Boot Size	30.06%

❖ Here the highest accuracy was 58.38%. A machine learning model was created using it.

Result	Accuracy	
Predict Safety Rating based on Car Acceptability, Boot Size, Number Of Doors, Number of Passengers	58.38%	Details

Try it out!

Number Of Doors
2

Number of Passengers
4

Boot Size
Big

Car Acceptability
Good

Predict

A.I. predicts

Safety Rating
Medium

A.I.

- ❖ Now click on continue.
- ❖ Give a name for the model.

Predict Safety Rating based on Car Acceptability , Boot Size , Number Of Doors , Number of Passengers

Model name (required)
CarSafetyRatingModel

Intended Use
Describe the problem you think this model could help solve, or one potential app someone could make with this model.

Write a brief description.

Limitations and Warnings
Describe any limitations in how this model was created or how it should be used. You may say things like "Avoid using this model for..." or "Be cautious about...". Important questions to consider are:
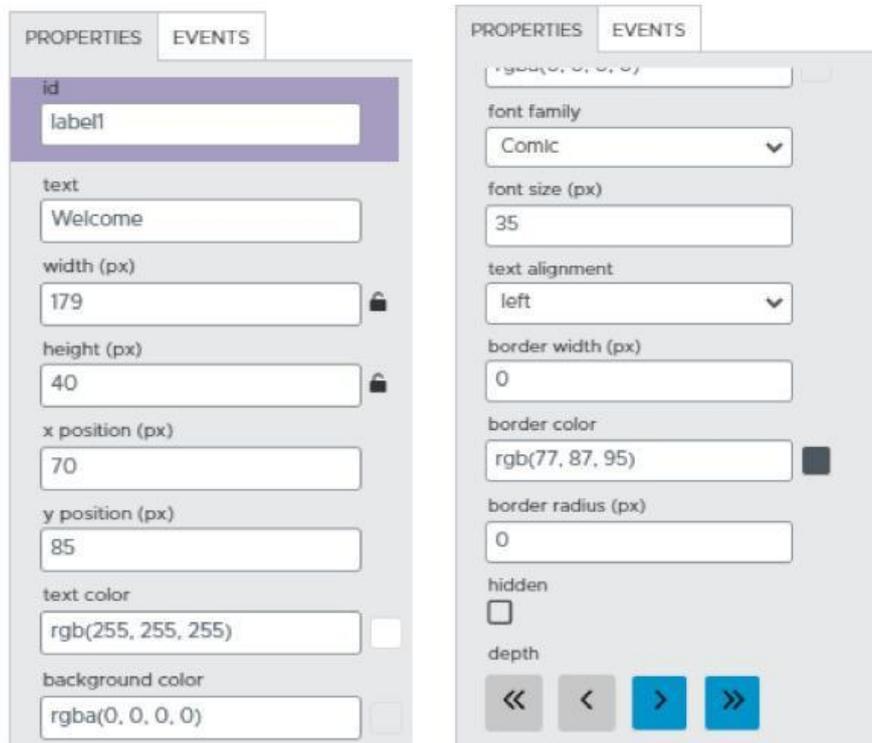- Does the data represent all possible users and scenarios?

Back

Save

❖ Save the model and go to the second part of lesson 16 of the AI and machine learning course.

❖ Let's create the app using the app lab and the model we prepared.

❖ Let's set the home screen first.

PROPERTIES	EVENTS

id

Homescreen

background color

#494368

image

Choose...
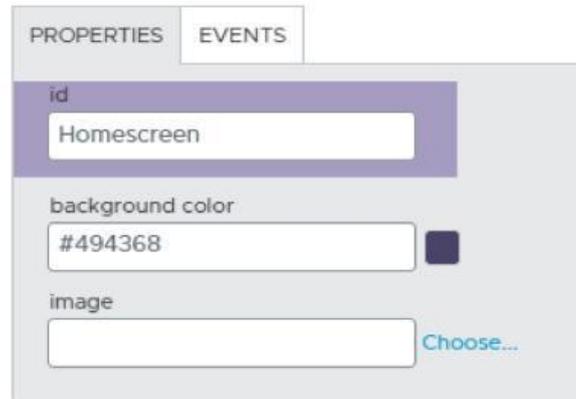
❖ Give a welcome label and a start button for the home screen.

PROPERTIES	EVENTS

id

label1

text

Welcome

width (px)

179

height (px)

40

x position (px)

70

y position (px)

85

text color

rgb(255, 255, 255)

background color

rgba(0, 0, 0, 0)

PROPERTIES	EVENTS

rgba(0, 0, 0, 0)

font family

Comic

font size (px)

35

text alignment

left

border width (px)

0

border color

rgb(77, 87, 95)

border radius (px)

0

hidden

☐

depth

« ‹ › »
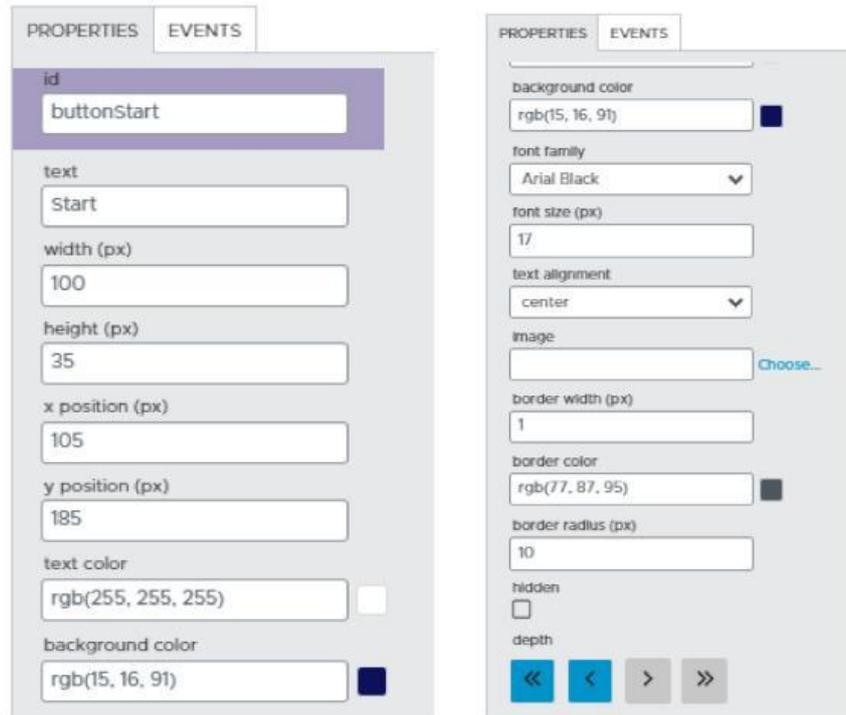
❖ Add the screen to predict the safety rating.
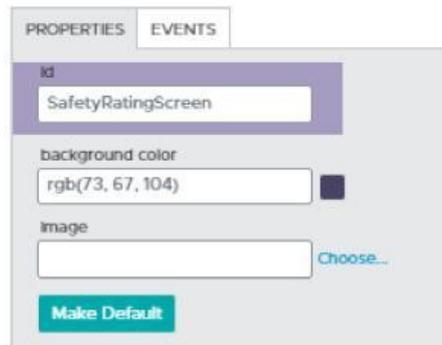
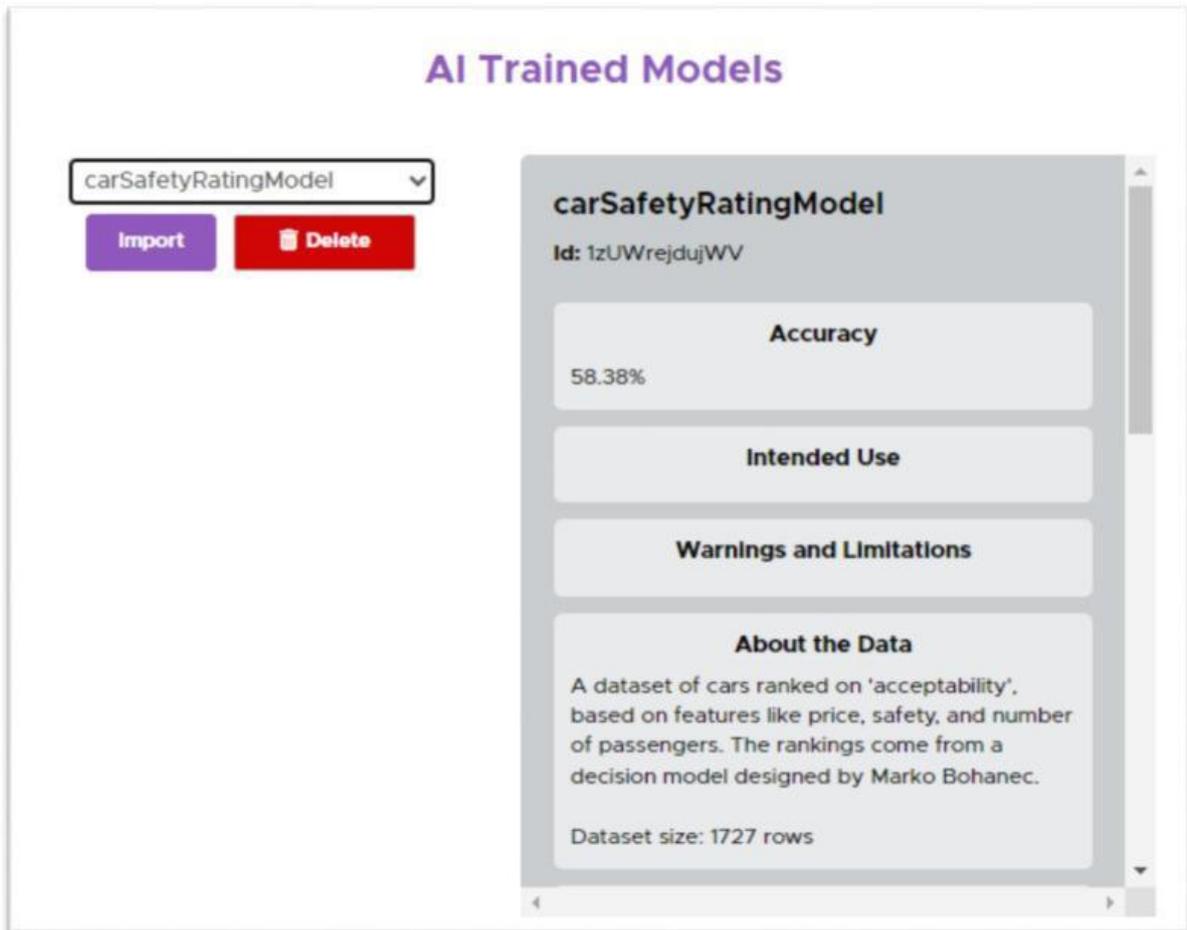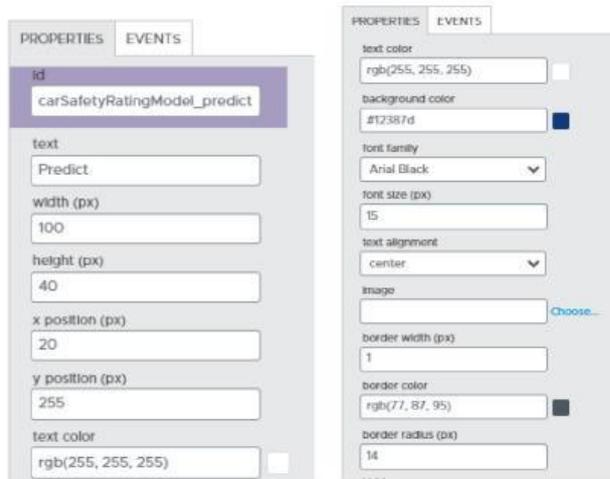❖ Code to move to the Safety Rating Screen when the Start button is clicked.

```
onEvent( ▼ "buttonStart", ▼ "click", function( ) {
    setScreen( ▼ "SafetyRatingScreen");
}                    );
```

❖ Let's import the model for Safety Rating Screen.

AI Trained Models

carSafetyRatingModel ⌄

Import   🗑 **Delete**

carSafetyRatingModel

Id: 1zUWrejdujWV

Accuracy

58.38%

Intended Use

Warnings and Limitations

About the Data

A dataset of cars ranked on 'acceptability', based on features like price, safety, and number of passengers. The rankings come from a decision model designed by Marko Bohanec.

Dataset size: 1727 rows

❖ Give the text color of the label as rgb(255, 255, 255).
❖ Style the Predict button as follows.

PROPERTIES   EVENTS

id
carSafetyRatingModel_predict

text
Predict

width (px)
100

height (px)
40

x position (px)
20

y position (px)
255

text color
rgb(255, 255, 255)

PROPERTIES   EVENTS

text color
rgb(255, 255, 255)

background color
#12387d

font family
Arial Black ⌄

font size (px)
15

text alignment
center ⌄

image
Choose...

border width (px)
1

border color
rgb(77, 87, 95)

border radius (px)
14

❖ Prepare the code for the Predict button as follows.

```
onEvent(▼"buttonStart", ▼"click", function() {
    setScreen(▼"SafetyRatingScreen");
}   );
var data = {};
onEvent(▼"carSafetyRatingModel_predict", ▼"click", function() {
    addPair(data, "CarAcceptability", getText(▼"CarAcceptability_dropdown") );
    addPair(data, "BootSize", getText(▼"BootSize_dropdown") );
    addPair(data, "NumberOfDoors", getText(▼"NumberOfDoors_dropdown") );
    addPair(data, "NumberofPassengers", getText(▼"NumberofPassengers_dropdown"));
    setText(▼"carSafetyRatingModel_prediction", '');
    getPrediction("carSafetyRatingModel", "1zUWrejdujWV", data, function(value) {
        setText(▼"carSafetyRatingModel_prediction", value);
    }   );
}   );
```

❖ Now run your app.