Girls & Boys
Programming in Europe Erasmus+

Co-funded by the Erasmus+ Programme of the European Union

C4 Spain GBPE Mobility

GBPE Erasmus+ project . 2019-1-CZ01-KA229-061282-1
" Girls & Boys are Programming in Europe "
girlsboysprogramming.eu

V2 Spain UIPEC Virtual Mobility

UIPEC Erasmus+ Project 2019-1-ES01-KA219-065673
"Using ITC to Preserve European Crafts"
eucrafts.eu

Machine Learning AI Programming Workshop

Imparted By Prof. Alfonso Ballesteros (IES Playamar)

Introduction to Machine learning Workshop

Girls & Boys
Programming in Europe Erasmus+

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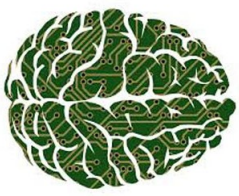


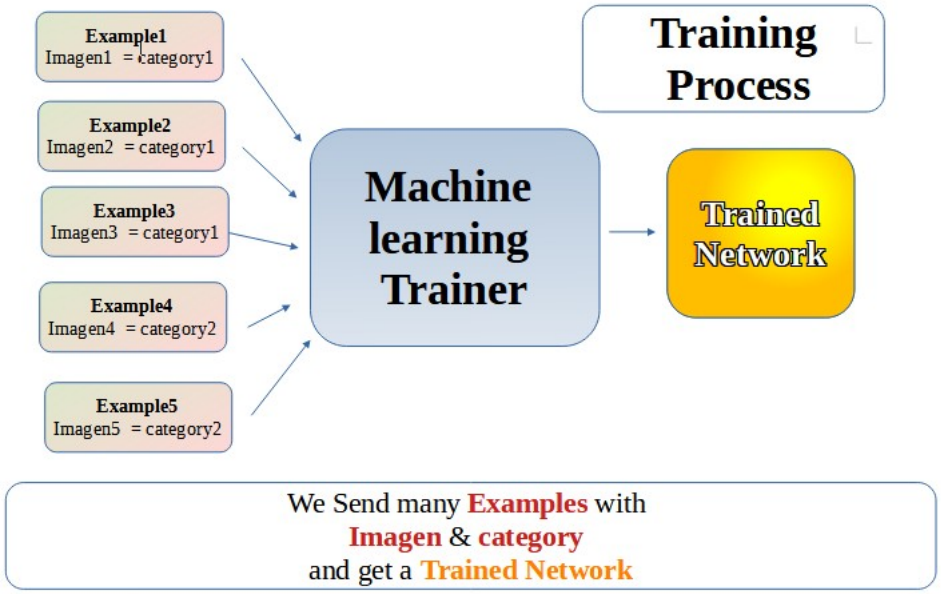
Context

This workshop is made as one of the ICT formation actitivities part of the C4 Spain GBPE Mobility of the GBPE " Girls & Boys are Programming in Europe" Erasmus+ project . 2019-1-CZ01-KA229-061282-1 Erasmus +". This activity will be also considered as part of a synergy activity for a Virtual Mobility of the UIPEC Erasmus+ Project 2019-1-ES01-KA219-065673 "Using ITC to Preserve European Crafts" . This Workshop has been imparted By **Alfonso Ballesteros from IES Playamar.**

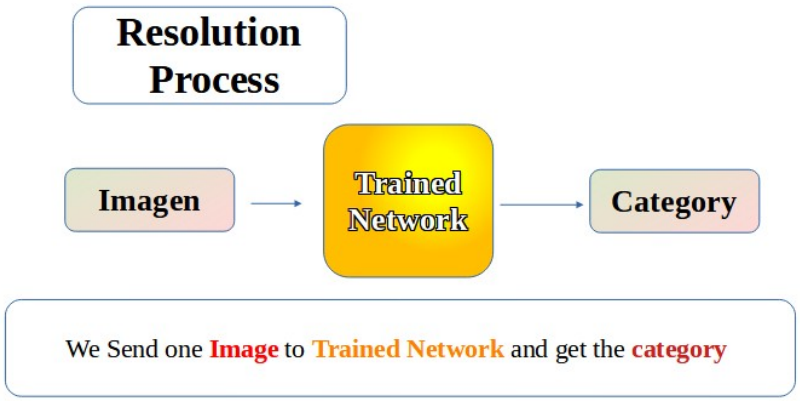
What's Machine Learning?

Machine learning is a computational technology which is used to make software learn by examples. It Has two process : Traning and Resolution

1º First we train the **Neural Network** with **examples**



2º second The resolution proccess: we show a **image** or a **text** to the **Trained Neural Network** and it gives us a **Category**



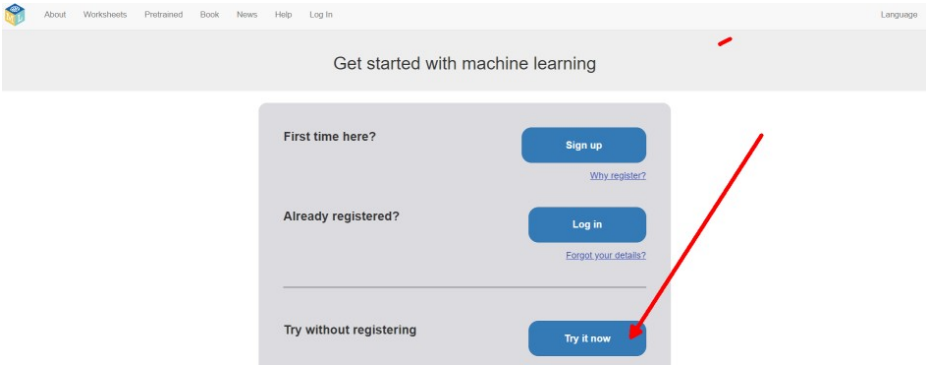
Let's Make some examples.

We will use an online platform called Machine Learning for Kids – IBM.org

www.ibm.org/activities/machine-learning-for-kids

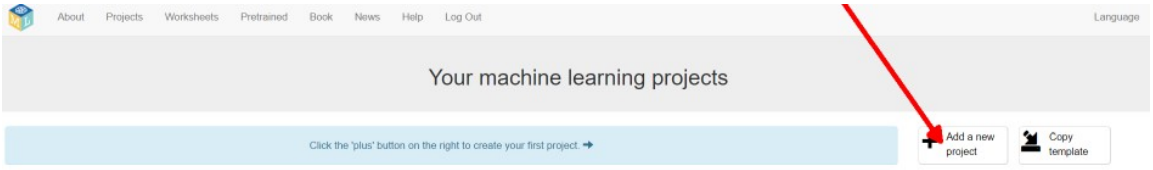
We will enter in the platform **:**
https://machinelearningforkids.co.uk/#!/login

We will try it without registering for this workshop (but its free for teachers and students)

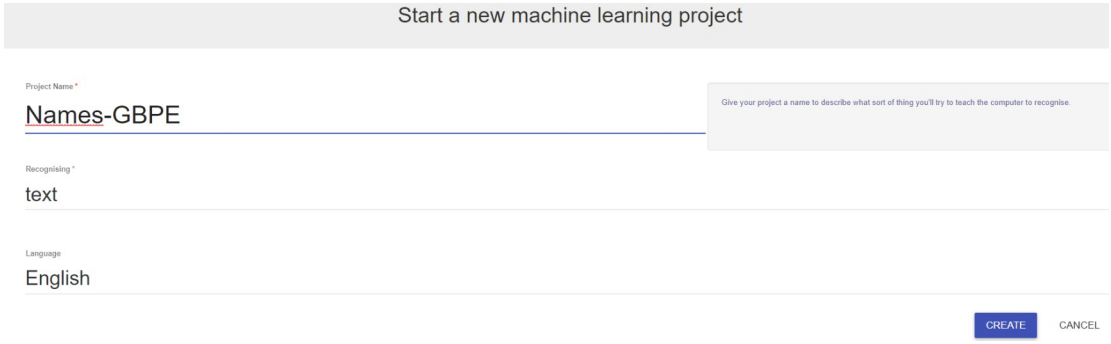


1º Example "text Machine Learning"

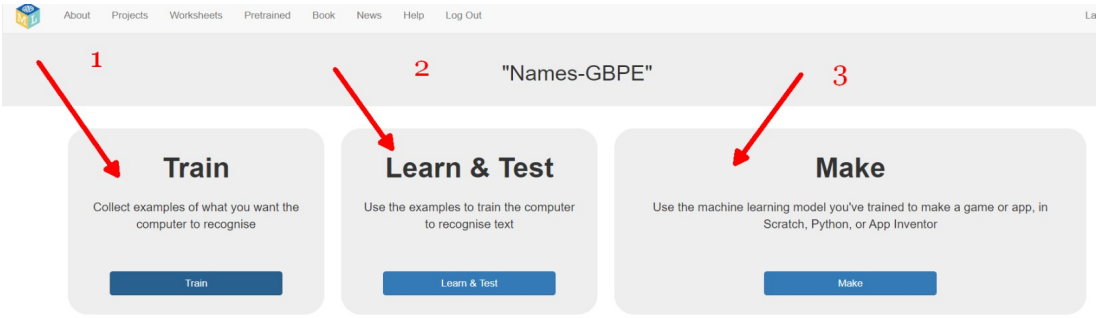
We will train a text machine to identify names of boys and girls



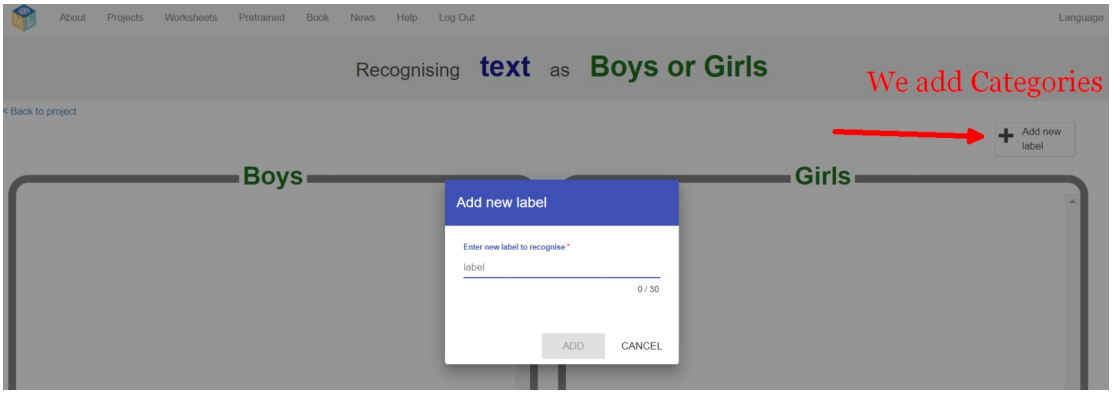
We will set a name a text model and a language "English"



First we will train it (Number 1) then we will test it (Number 2) finally we could import it (Number 3) to another platform like (App inventor) to use it on a Software

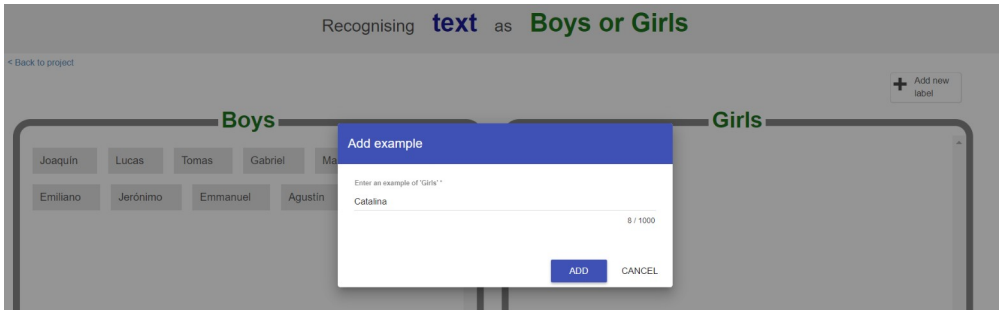


First we press on train and add the categories : Boys and Girls

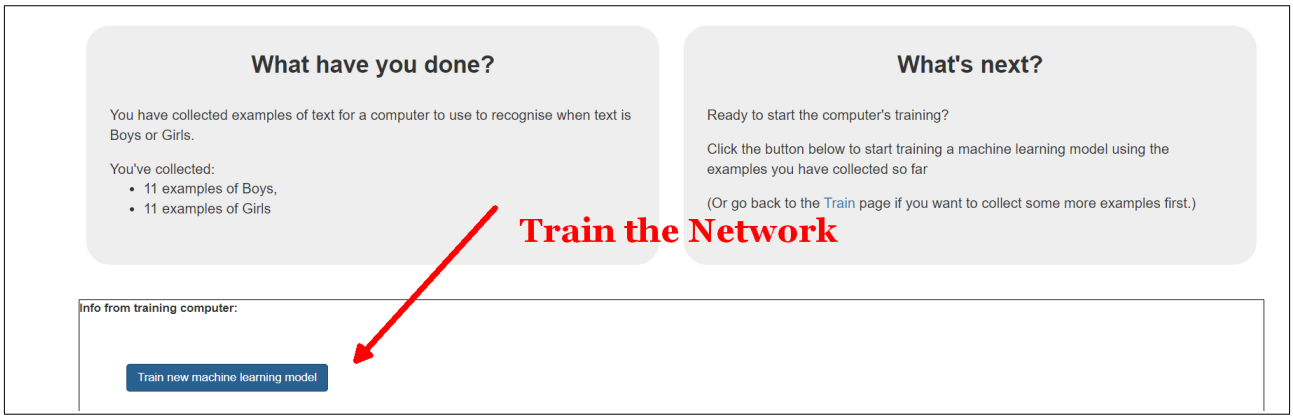


Then we add Examples

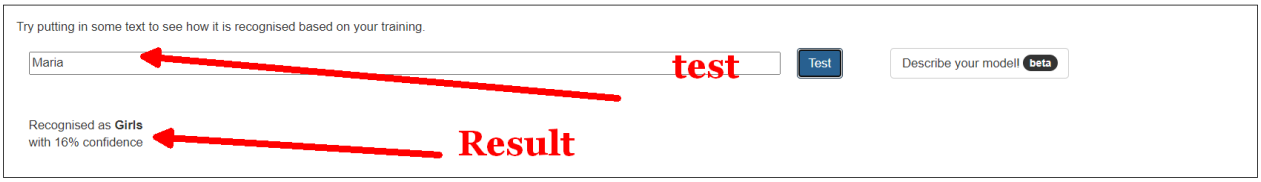
Boys		**Girls**	
Emiliano	Joaquín	Maria José	Renata
Jerónimo	Lucas	Emma	Emilia
Emmanuel	Tomas	Catalina	Natalia
Agustín	Gabriel	Julieta	Zoe
Juan	Martín	Mía	Nicole
Pablo	David	Antonella	Paula
José	Andrés		



2º We train the network clicking in Learn and Test

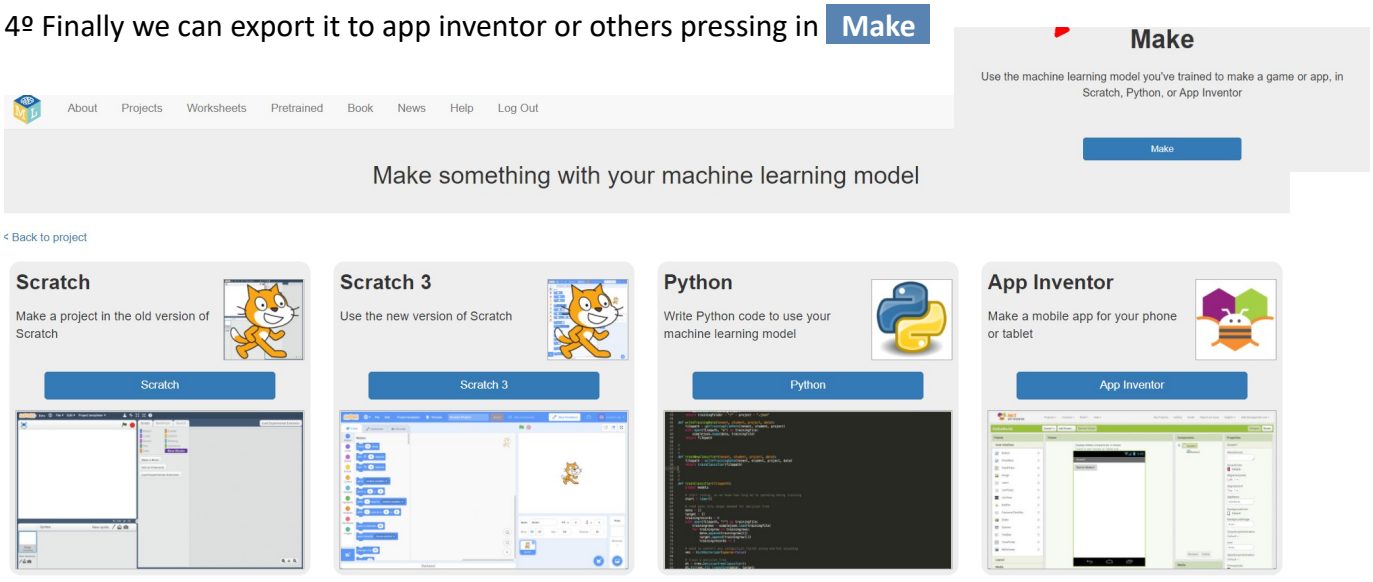


3º When we train the network it takes several seconds and then we can try it in the Proving-Box



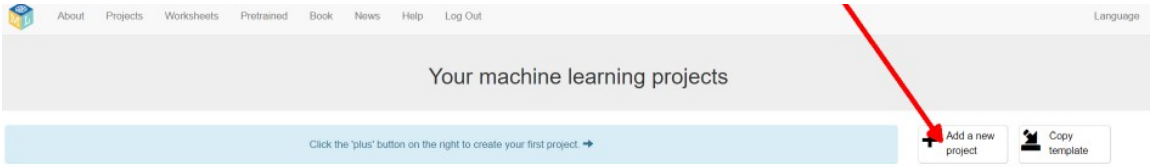
Prove several names and discover how intelligent is the network.

4º Finally we can export it to app inventor or others pressing in **Make**

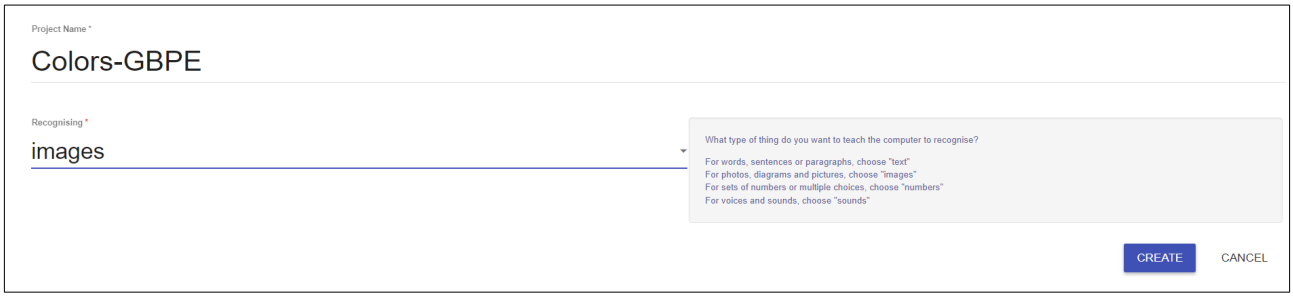


2º Example “Image Machine Learning”

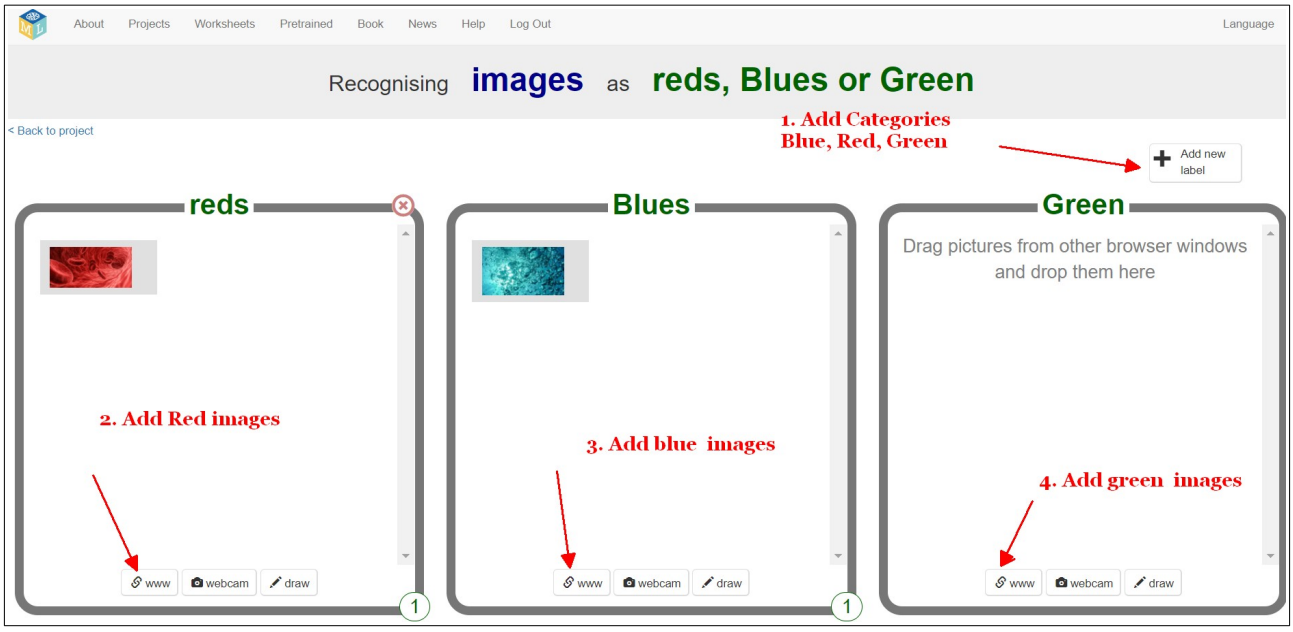
We will train a text machine to identify Colours



We will set a name a image model



We add 3 categories Blue, Green and Red and we add the following 5 images to each category (minimum is 5)



Blues

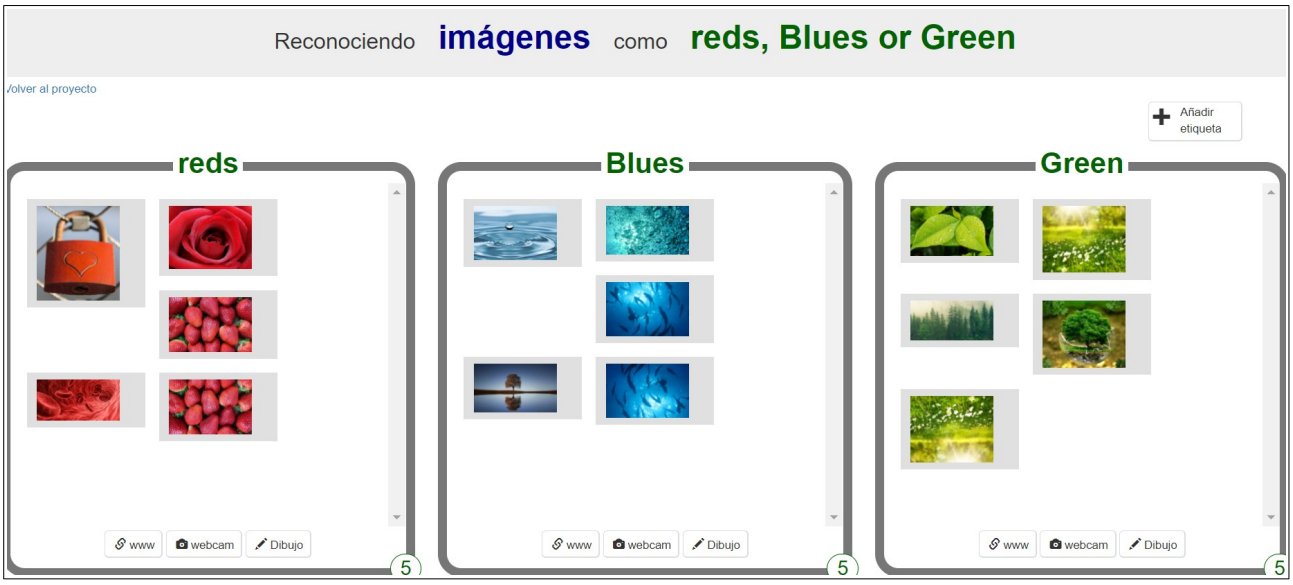
https://i.postimg.cc/Jh8Xc3y6/blue1.jpg
https://i.postimg.cc/C59BZbT4/blue2.jpg
https://i.postimg.cc/C1Lf9Fsb/blue3.jpg
https://i.postimg.cc/mkP128qD/blue4.jpg
https://i.postimg.cc/R0mP6Hv9/blue5.jpg

Greens

https://i.postimg.cc/gc76BbX6/green1.jpg
https://i.postimg.cc/2SRLrdxk/green2.jpg
https://i.postimg.cc/QdQ9tB6p/green3.jpg
https://i.postimg.cc/4NhHD2V2/green4.jpg
https://i.postimg.cc/JhQpbzhX/green5.jpg

Reds

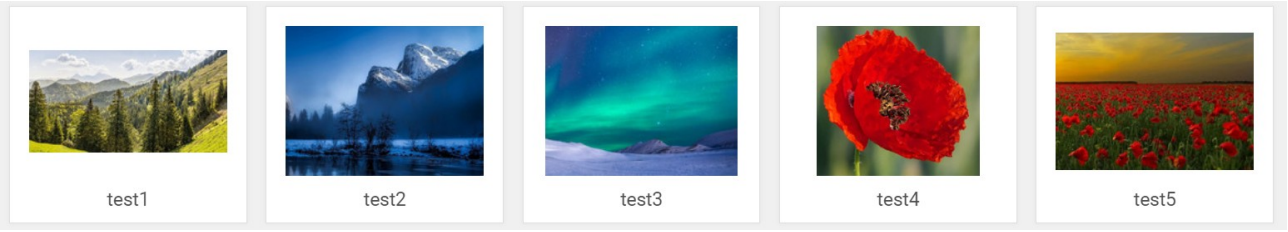
https://i.postimg.cc/zBtRr9x6/red1.jpg
https://i.postimg.cc/YS8v65B0/red2.jpg
https://i.postimg.cc/q7ptCkYW/red3.jpg
https://i.postimg.cc/tTTY2B95/red4.jpg
https://i.postimg.cc/V6LD4PSV/red5.jpg



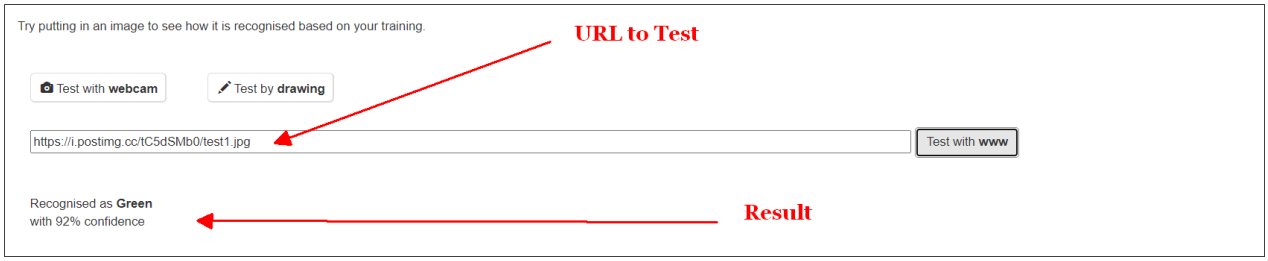
Then We go back and train and test

We will test it with the following images

https://i.postimg.cc/tC5dSMb0/test1.jpg
https://i.postimg.cc/TPyrP2DG/test2.jpg
https://i.postimg.cc/7ZZ3pnP5/test3.jpg
https://i.postimg.cc/mgpYR1h8/test4.jpg
https://i.postimg.cc/k5kWRrQS/test5.jpg



Testing with Test1



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Build your project on your computer

Test it live on your device