



DNA-based Dog Identification



Developed by

 Alejandro Asensio alejandro.asensio.10@gmail.com

 Óscar Burgos mihifidem@gmail.com

Module

M12 Project

Degree

Cicle formatiu de grau superior (CFGS) Desenvolupament d'Aplicacions Web
Perfil professional Bioinformàtica (DAW-BIO) (cicle LOE)

Center of Studies

IES Provençana

<https://www.proven.cat>



imagine...

ocikitos





reality...

ocikitos





social civic problem





one solution...





proposed solution



DNA-based Dog Identification

Using bioinformatic tools to identify Short Tandem Repeats (STR) patterns, located among the different chromosomes of dogs' DNA.





STR, what is it?

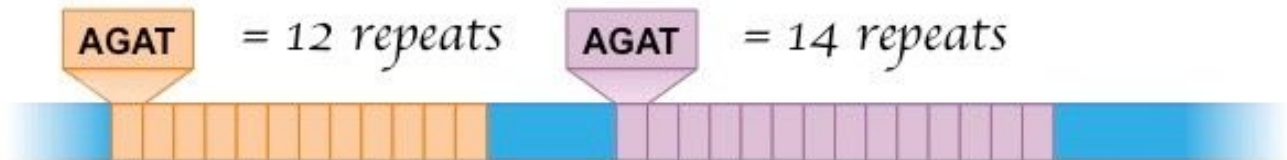
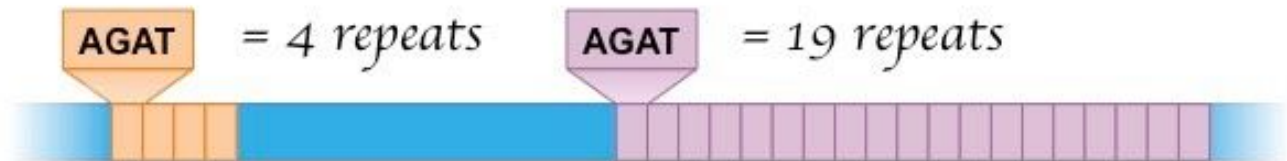
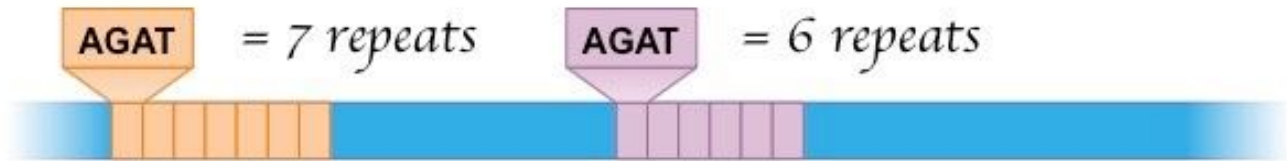


Short Tandem Repeats (STRs) are short repeated DNA sequences that involve a repetitive unit of 1-6 base pairs (bp), forming series with lengths of up to 100 nucleotides (nt).

About 3% of the entire genome. Most STRs are found in the **noncoding** regions (introns)



STR, what is it?



STR site 1

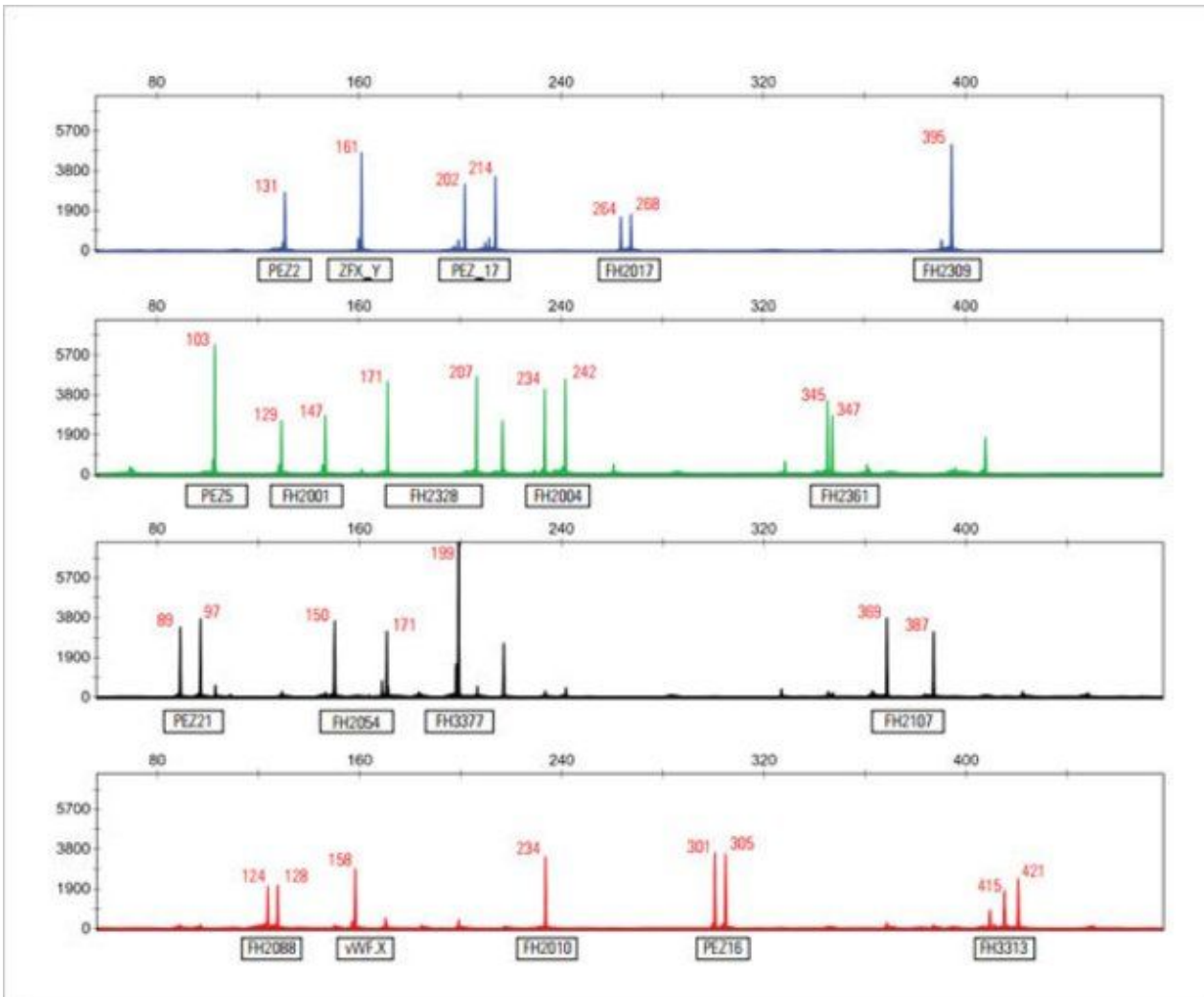
STR site 2

locus

locus



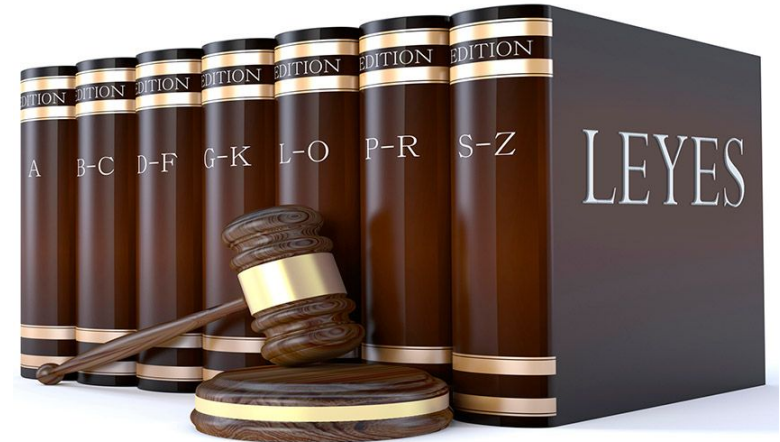
STR, what is it?



Mass Spectrometry



benefits



Nueva Ley Municipal

A parte de censar al perro con un chip, también será obligatorio recoger una muestra biológica en el momento del registro en la clínica veterinaria.



benefits



Rechazo social

Rechazo a la aplicación de más costes para el control
identificativo de mascotas.

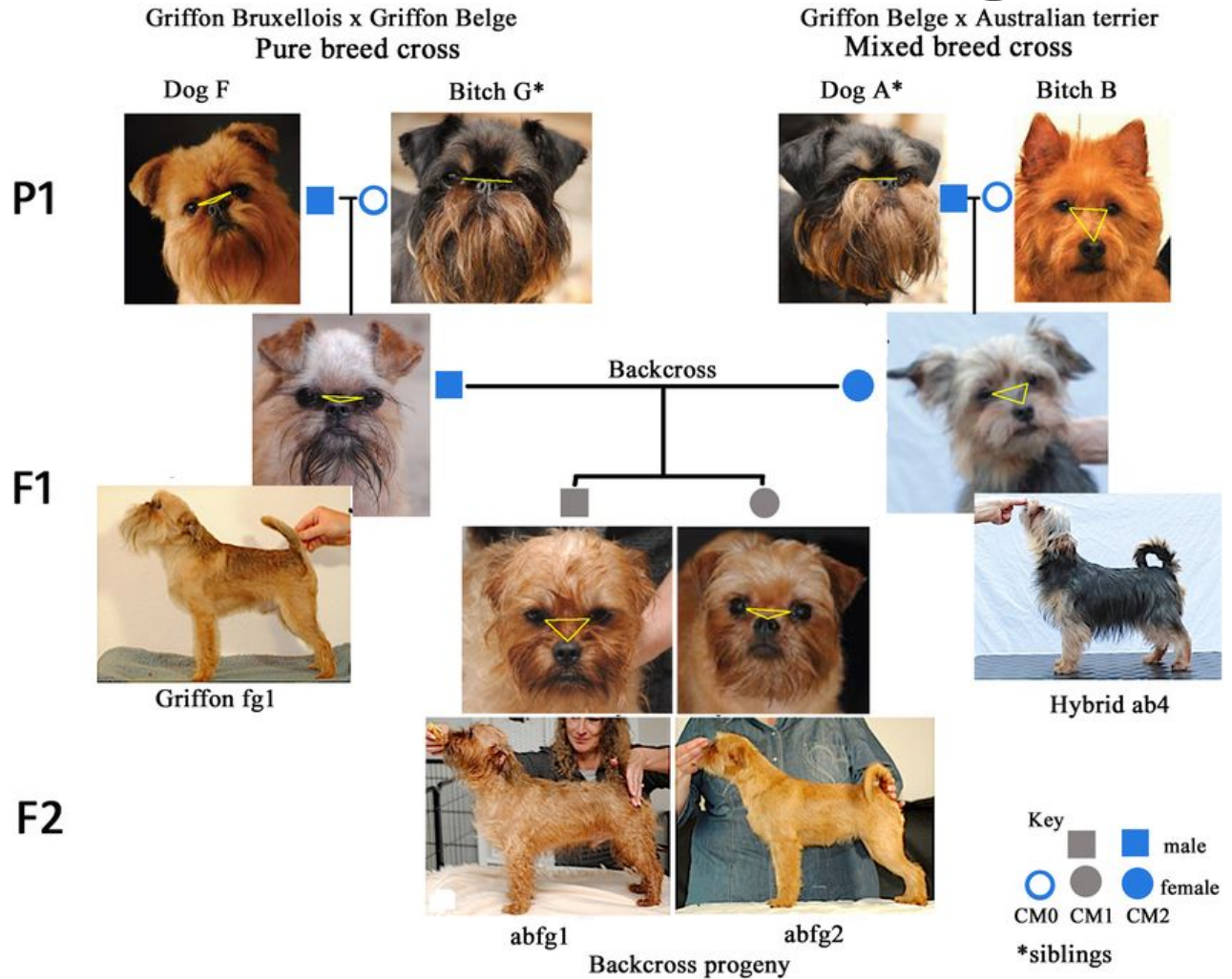




benefits



Pedigree ratio





benefits



- TO DO** -> **TinderPet** (chat, pasear, relaciones , cria...)
-> **PetAdvisor** (pipican, paseadores, adiestradores, vets, tiendas ...)

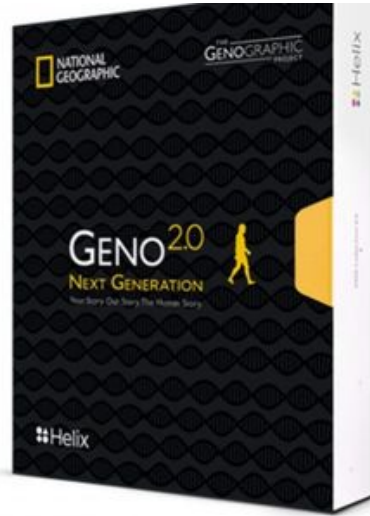
-> **INFO** ambito municipal → feedback pipican → ayuntamiento

-> **Red Social (Mascotas)** → 1ª persona mascota (este es mi dueño,...)



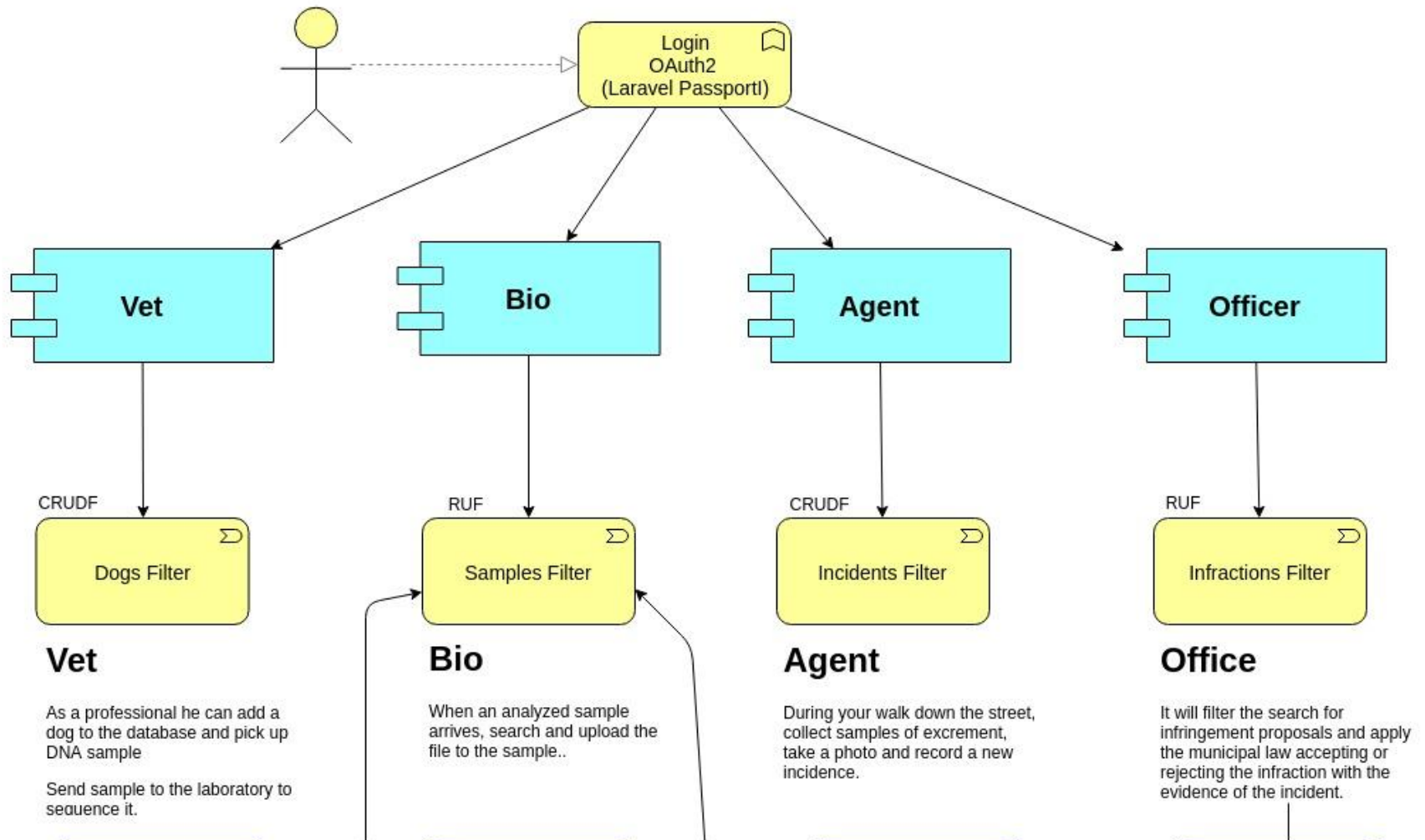
benefits

Idea de negocio





workflow





workflow



Vet

As a professional he can add a dog to the database and pick up DNA sample

Send sample to the laboratory to sequence it.

Add Dog
Add Sample

Bio

When an analyzed sample arrives, search and upload the file to the sample..

Upload FASTA File

PARSE file fasta

Agent

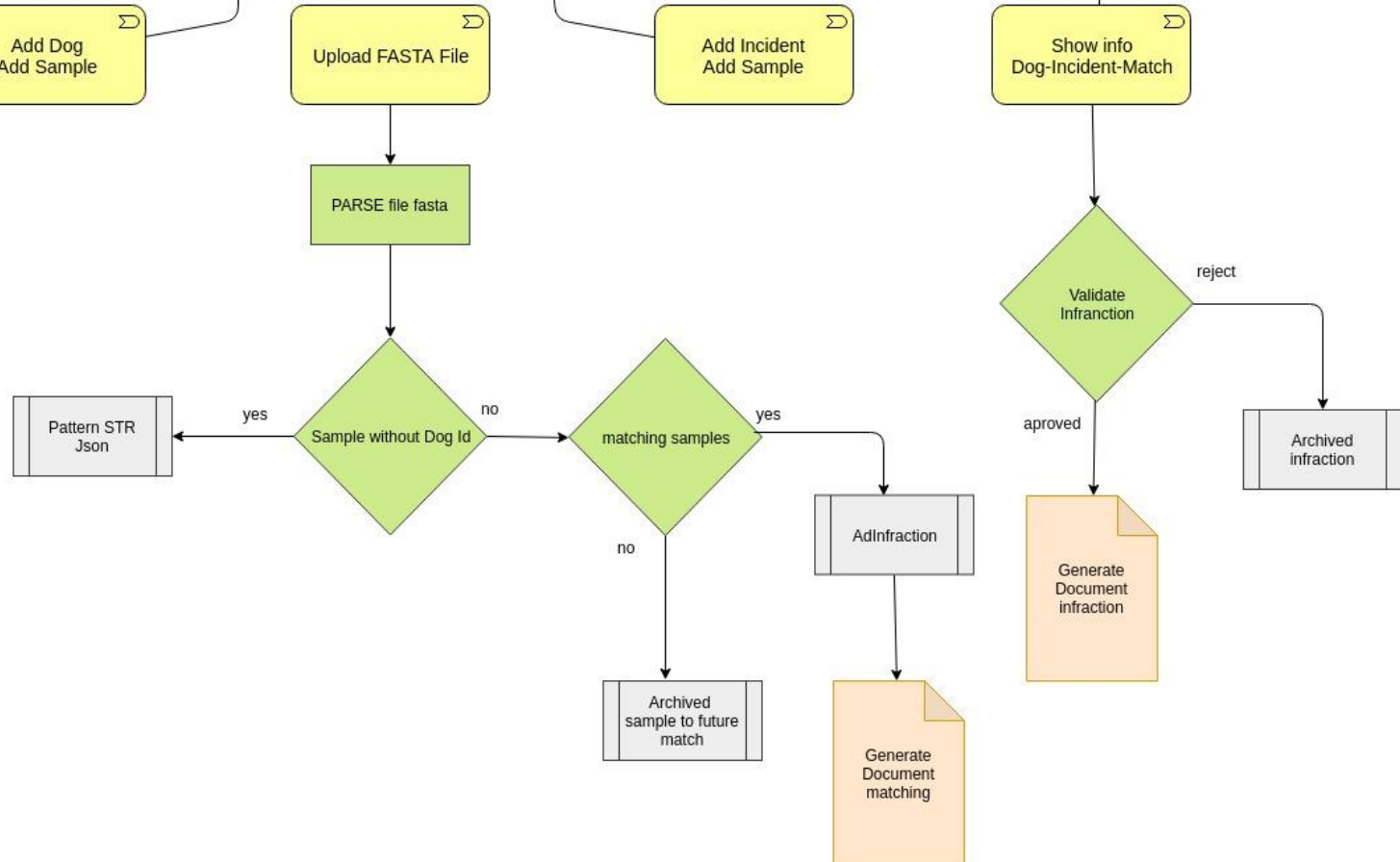
During your walk down the street, collect samples of excrement, take a photo and record a new incidence.

Add Incident
Add Sample

Office

It will filter the search for infringement proposals and apply the municipal law accepting or rejecting the infraction with the evidence of the incident.

Show info
Dog-Incident-Match





technologies



Database:



phpMyAdmin



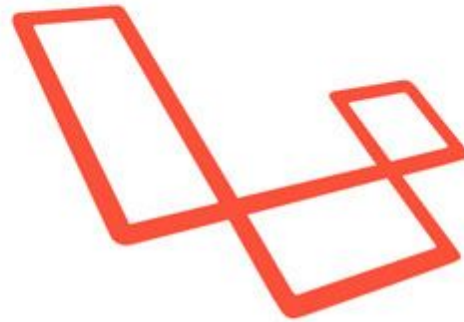
MySQL®



technologies



Backend:



Laravel

RESTful API

Laravel Passport (OAuth2)





technologies



Scripting:



exrex: Context-Free Grammar library



technologies



Frontend:



Bootstrap 4

**Angular
Material**

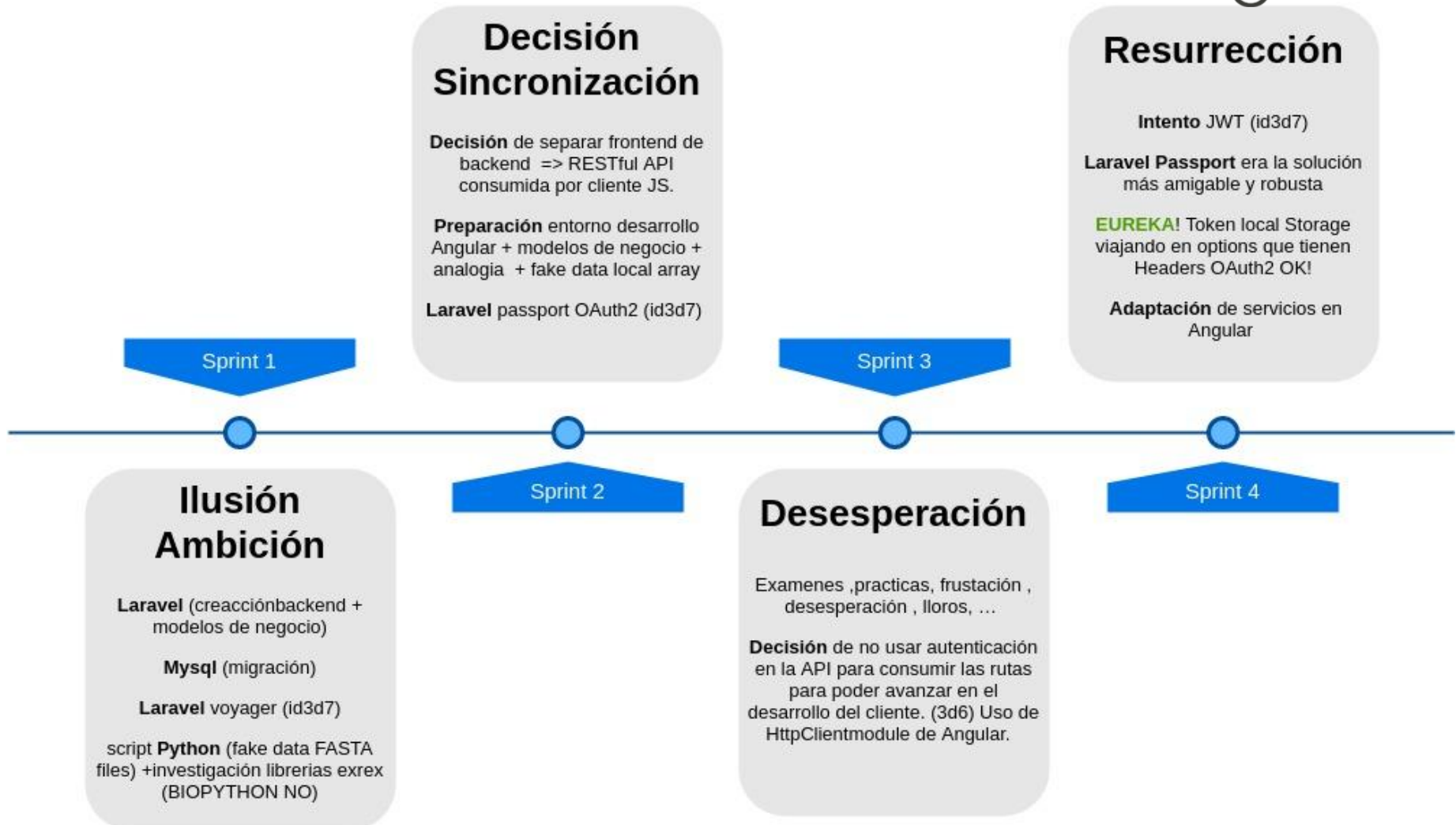
NGX



**node.js package
manager**



time line






valoración general DAWBIO-1



M01 Sistemas: Linux 

M02 BBDD MySQL 

M03 Programación modulación

M04 Marcas HTML5 



valoración general DAWBIO-2



M05 Planificación proyecto

M06 Frontend Angular 

M07 Backend Laravel  {RESTful API}

M06.5 Frontend + Backend = Consume a
RESTful API

M08 Deployment





valoración general
DAWBIO-2



M09 Diseño Responsive UI/UX



M10 FOL

M11 EIE Startup

M12 `$this->project;` 

M13 prácticas... coming soon!



valoración general DAWBIO-2



M14 BIOLOGIA conceptos ADN, STRs, etc.

M15.1 Bootstrap 4 

M15.2 Python 

Estadística con R 

A futuro, posible estudio demográfico y frecuencias obtenidas VS
frecuencias de estudios previos PubMed.



el proyecto en cifras



+5.000 líneas de código

66 **10** profesores

horas

4 lenguajes

5

librerías
extra

9 asignaturas en paralelo


2 desarrolladores **2** frameworks



DNA-based Dog Identification

*"No he fracasado. He encontrado 10.000 formas
que no funcionan."* **Thomas Alba Edison**



Made with .

Powered by  and  and our .