

Exploratory data analysis and structuralization in database systems

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Systems used

- Laravel (PHP 7.x)
- Bootstrap
- findacat.eu web hosting
- MySQL
- Docker



Tables

- Users (9 columns)
- Cats (36 columns)
- Cat_metadata (6 columns)
- Ems (7 columns)
- Breeds (6 columns)

Pages

- Search
- Test Mating
- Birthdays
- Register Cat
- Cat Profile
- Cat Tree for 1..5 generations
- Login
- Register
- Backups
- 0..2s response

Relationships

- Cat has 0..1 father cat and 0..1 mother cat
- (Cat has 0..n metadata)
- Cat has 0..1 breed
- Cat has 0..1 ems
- Cat has 0..n children
- User has to be admin to register a cat
- User has to be admin to access backups

Pedigree trees; Inbreeding

- Test mating by breed and cat name
- Inbreeding algorithm (calculateForCode):
 - The function iterates over ancestors to find pairs of different codes leading to the same ancestor, these pairs represent potential inbreeding paths.
 - Afterwards the function checks if there are any intermediate ancestors common to both paths for each pair of codes leading to the same ancestor. If not, it considers it as an inbreeding path.

Pedigree trees; Inbreeding

- Calculation proceeds with the inbreeding coefficient based on the length of the codes and the inbreeding coefficient of the common ancestor: $2^{-(\text{length1} + \text{length2} - 1)} * (1 - \text{FA})$ where FA is the inbreeding coefficient of the common ancestor.
- The function caches the calculated inbreeding coefficient for each common ancestor to avoid redundant calculations.
- Total inbreeding is calculated by summing up products of inbreeding coefficients and the number of paths, this coefficient is then displayed on the page in percentage form.

Additional data handling

- Ems filled in profile
- Breed filled in profile
- Approximate, exact, substring search
- Cats, EMS, Breed CSV Import and Export
- Multilingual site (Slovak, English)
- Search pagination

Support

- Webhosting with MySQL and PHP 7.x
- Docker image (all-in-one)
- User & Technical Documentation

cat_metadata
id
cat_id
key
value
created_at
updated_at

cats
id
full_name
gender_id
sire_id
dam_id
dob
titles_before_name
titles_after_name
ems_color
breed
chip_number
genetic_tests
breeding_station
country_code
alternative_name
print_name_r1
print_name_r2
dod
original_reg_num
last_reg_num
reg_num_2
reg_num_3
notes
breeder
current_owner
country_of_origin
country
ownership_notes
personal_info
genetic_tests_file
photo
vet_confirmation
doo
remember_token
created_at
updated_at

migrations
id
migration
batch

password_resets
email
token
created_at

breeds
id
breed
name
remember_token
created_at
updated_at

ems
id
breed_id
ems
english
remember_token
created_at
updated_at

users
id
name
email
email_verified_at
is_admin
password
remember_token
created_at
updated_at

Find A Cat

Advanced Search

Search kind: ▼

Number of generations: ▼

Find A Cat

p

Advanced Search

Search

« Previous [Next](#) »

(M)
(N) Con Keriiz Fighting
Spirit

SBI a

Sire : pôvod nevedený
Dam : pôvod nevedený

Show Profile

Show Family Tree

(M) SC
(N) Yowie's Power, DVM

MCO ns 09

Sire : pôvod nevedený
Dam : pôvod nevedený

Show Profile

Show Family Tree

(M)
7 Fontane Applausi
of Miro´

PER w 62

Sire : Pizzacata Magician
Dam : Cattrax Megan Gale

Show Profile

Show Family Tree

(F) EC
A Cadia Park´s
Kerrygold

MCO f 22

Sire : pôvod nevedený
Dam : pôvod nevedený

Show Profile

Show Family Tree

(F) IC
A Heaven Sent Oop! I Did
It Again

(M) EC
A Painted Pony
Dazzledots

(M) GIC
A Ticket from Paris
Du Soleil Noir

(M) EC
A Whitershadeofpale
Sweet Cat´s

Abayomis Espresso Frappino Profile

[Edit](#)[Show Profile Abayomis Espresso Frappino](#)[Show Family Tree](#)

Profile

Titles before Name	CH
Full Name	Abayomis Espresso Frappino
Gender	M
Date of Birth	2011-02-08
Breed	RAG = Ragdoll
EMS Color	b 03 21 = Not in database
Original Reg No	(PL) FPL LO 41946
Reg No 2	(SE) SVERAK LO 274559
Breeder	x, x

Family

Sire	Abayomis Rocky RAG a 04 21	Set Sire
Dam	Olivia RAG b 03 21	Set Dam
Test Mating	Test Mating	

Children (2)

with (F) [Bianca Orlitia](#) RAG b 04
(M) [Reflection Biscuit](#) RAG b 03

with (F) [Ajka Koci Szarm *PL](#) RAG f 03
(F) [Reflection Tequilla](#) RAG b 03 21

Test Mating Using Breeds

First, choose a breed that the tested cats should have, hit "Update", then choose the tested cats themselves and once again hit "Update". Calculated inbreeding will be shown alongside an option to display registration numbers.

Update

Update

Inbreeding: $F = 21.09\%$

☒ Show registration numbers

			EC Garfield Grey Orange	EC (CH CFA) Copacats Alexander
				PER e 03.2003-07-14

Sire:

Pajo Evina Star, SK

GIC Fabián z Kopečku,
CZ

EXO a 01 62 2003-08-06
(SK) SZCH LO 15/2004/EXO (CZ)
ČSCH LO 323/3/EXO

CH Mr. Misha G z Tazu,
CZ

PER a 03
(CZ) ČSCH LO 336/0/PER

Hanah Lady Bijou, CZ

EXO g 03
(CZ) ČSCH LO 95/1/EXO

EC Garfield Grey Orange
Blue

PER a 02 62 2003-07-14
(CZ) ČPKK 797/97/PER

CH Humoreska Etida, PL

EXO f 2004-01-09
(CZ) ČSCH LO 52/98/EXO

IC Xenius GO, CZ

EXO as 22 62
(CZ) ČSCH LO 8/99/EXO

GIC Sharon Pearl Cat*PL

PER f 03 2003-12-05
ČPKK 2020/97/PER SHKRP LO
2852

EC (CH CFA) Copacats
Alexander

PER e 03 2003-07-14
PKR-14044/PER

IC Balou Orange Blue

PER g 01 62 2003-07-14
(PL) PKR-13052/PER

EC Hammat TSX av
Fagervoll

EXO d 03 22 2003-08-11
(PL) PKR-0071/EXO

GIC Bajka od Elizy

PER f 03 2004-01-09
(PL) PKR-13020/PER

EC Zenzero Zenzero

EXO ns 22 62 2003-08-12
ČPKK 1/97/EXO

CH Chantal Go

PER gs
ČPKK 578/94/PER

CH Fajny Figielek

PER d 23 2003-12-05
PKR - 12922/PKR

IC Traisy Isi z Druzyny
Timura

PER g 02 2003-12-05
PKR - 8116/PER

EC/CFA/ Alexander

EXO e 02 2009-08-14
(SK) SZCH LO 143/2009/EXO

Aries Evina Star, SK
PER d 02 62 2004-04-12
(SK) SZCH LO 6146/2004/PER

EC Damián G Lady
Bijou, CZ

PER d 03 2004-06-03
(CZ) ČSCH LO 334/0/PER

IC Opera G z Tazu, CZ

PER fo 2 62 2004-06-03
(SK) SZCH LO 6079/2003/PER
(CZ) ČSCH LO 727/2/PER

EC Garfield Grey Orange
Blue, PL, DM

PER a 02 62 2003-10-01
(CZ) ČPKK 797/97/PER

EC Zecca la Renta
Camry

PER f 2004-06-03
(CZ) ČSCH LO 111/0/PER, (PL)
SHKRP LO 1480

EC Garfield Grey Orange
Blue, PL, DM

PER a 02 62 2003-10-01
(CZ) ČPKK 797/97/PER

CH Inéz Lady Bijou, CZ

PER f 02 62 2004-06-03
(CZ) ČSCH LO 682/1/PER

Copacats, DM

PER e 03 2003-10-01
(PL) PKR-14044/PER

IC Balou Orange Blue

PER g 01 62 2003-07-14
(PL) PKR-13052/PER

GIC Big Daddy Bo - Wi *
PL

PER n 03 2004-06-03
PKR - 12823

EC Sunrise Star red
Camry* PL

PER d 2004-06-03
PKR - 12968/PER

EC/CFA/ Alexander
Copacats, DM

PER e 03 2003-10-01
(PL) PKR-14044/PER

IC Balou Orange Blue

PER g 01 62 2003-07-14
(PL) PKR-13052/PER

Belzebub Lady Bijou, CZ

PER n 2003-12-05
(CZ) ČSCH LO 373/99/PER

IC Dulcinea G Lady
Bijou, CZ

PER f 03 2004-06-03
(CZ) ČSCH LO 335/0/PER

EC (CH CFA) Copacats

<p>Dam:</p> <p>Rezi Evina Star, SK</p> <p>EXO n 02 2009-08-18 (SK) SZCH LO 145/2009/EXO</p>	<p>GIC Fabián z Kopečku, CZ</p> <p>EXO a 01 62 2003-08-06 (SK) SZCH LO 15/2004/EXO (CZ) ČSCH LO 323/3/EXO</p>	<p>CH Mr. Misha G z Tazu, CZ</p> <p>PER a 03 (CZ) ČSCH LO 336/0/PER</p>	<p>EC Garfield Grey Orange Blue</p> <p>PER a 02 62 2003-07-14 (CZ) ČPKK 797/97/PER</p>	<p>EC (CFA/DM) Copacats Alexander</p> <p>PER e 03 2003-07-14 PKR-14044/PER</p>
				<p>IC Balou Orange Blue</p> <p>PER g 01 62 2003-07-14 (PL) PKR-13052/PER</p>
			<p>CH Humoreska Etida, PL</p> <p>EXO f 2004-01-09 (CZ) ČSCH LO 52/98/EXO</p>	<p>EC Hammat TSX av Fagervoll</p> <p>EXO d 03 22 2003-08-11 (PL) PKR-0071/EXO</p>
				<p>GIC Bajka od Elizy</p> <p>PER f 03 2004-01-09 (PL) PKR-13020/PER</p>
		<p>Hanah Lady Bijou, CZ</p> <p>EXO g 03 (CZ) ČSCH LO 95/1/EXO</p>	<p>IC Xenius GO, CZ</p> <p>EXO as 22 62 (CZ) ČSCH LO 8/99/EXO</p>	<p>EC Zenzero Zenzero</p> <p>EXO ns 22 62 2003-08-12 ČPKK 1/97/EXO</p>
				<p>CH Chantal Go</p> <p>PER gs ČPKK 578/94/PER</p>
			<p>GIC Sharon Pearl Cat*PL</p> <p>PER f 03 2003-12-05 ČPKK 2020/97/PER SHKRP LO 2852</p>	<p>CH Fajny Figielek</p> <p>PER d 23 2003-12-05 PKR - 12922/PKR</p>
			<p>EC Garfield Grey Orange</p>	<p>IC Traisy Isi z Druzyny Timura</p> <p>PER g 02 2003-12-05 PKR - 8116/PER</p>
				<p>EC/CFA/ Alexander Copacats, DM</p> <p>PER e 03 2003-10-01</p>

EXO n 02 2009-08-18 (SK) SZCH LO 145/2009/EXO	CH Aurora Evina Star, SK PER f 03 2004-04-12 (SK) SZCH LO 6148/2004/PER	EC Damián G Lady Bijou, CZ PER d 03 2004-06-03 (CZ) ČSCH LO 334/0/PER	EC Garfield Grey Orange Blue, PL, DM PER a 02 62 2003-10-01 (CZ) ČPKK 797/97/PER	Copacats, DM PER e 03 2003-10-01 (PL) PKR-14044/PER
				IC Balou Orange Blue PER g 01 62 2003-07-14 (PL) PKR-13052/PER
			EC Zecca la Renta Camry PER f 2004-06-03 (CZ) ČSCH LO 111/0/PER, (PL) SHKRP LO 1480	GIC Big Daddy Bo - Wi * PL PER n 03 2004-06-03 PKR - 12823
				EC Sunrise Star red Camry* PL PER d 2004-06-03 PKR - 12968/PER
		IC Opera G z Tazu, CZ PER fo 2 62 2004-06-03 (SK) SZCH LO 6079/2003/PER (CZ) ČSCH LO 727/2/PER	EC Garfield Grey Orange Blue, PL, DM PER a 02 62 2003-10-01 (CZ) ČPKK 797/97/PER	EC/CFA/ Alexander Copacats, DM PER e 03 2003-10-01 (PL) PKR-14044/PER
				IC Balou Orange Blue PER g 01 62 2003-07-14 (PL) PKR-13052/PER
			CH Inéz Lady Bijou, CZ PER f 02 62 2004-06-03 (CZ) ČSCH LO 682/1/PER	Belzebub Lady Bijou, CZ PER n 2003-12-05 (CZ) ČSCH LO 373/99/PER
				IC Dulcinea G Lady Bijou, CZ PER f 03 2004-06-03 (CZ) ČSCH LO 335/0/PER