
Welcome to:

CODE CLUB!

Benji Metha, Aug 3 2023

WHY ARE WE HERE?

- **Gain confidence showing code to other people**
 - **Share knowledge, learn new approaches**
 - **Solving real astronomy problems together**
 - **Social activity by students for students**
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**“EVERYONE YOU WILL EVER
MEET KNOWS SOMETHING YOU
DON’T”**

-Bill Nye

THE GIT:

GITHUB.COM/ASTROBENJI/CODECLUB

**For CODE and RESOURCES!
Please contribute!!**

WHAT ISN'T CODE CLUB:

- **This right here, with Benji standing up talking at you all with a powerpoint.**
 - **Judgement on code quality/style**
 - **Tearing people down: “Why don’t you just...”**
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THE FORMAT

- **Warmup Question**
 - **Coding Challenge:**
 - **~20 mins for us all to code**
 - **~20 mins show and tell**
-

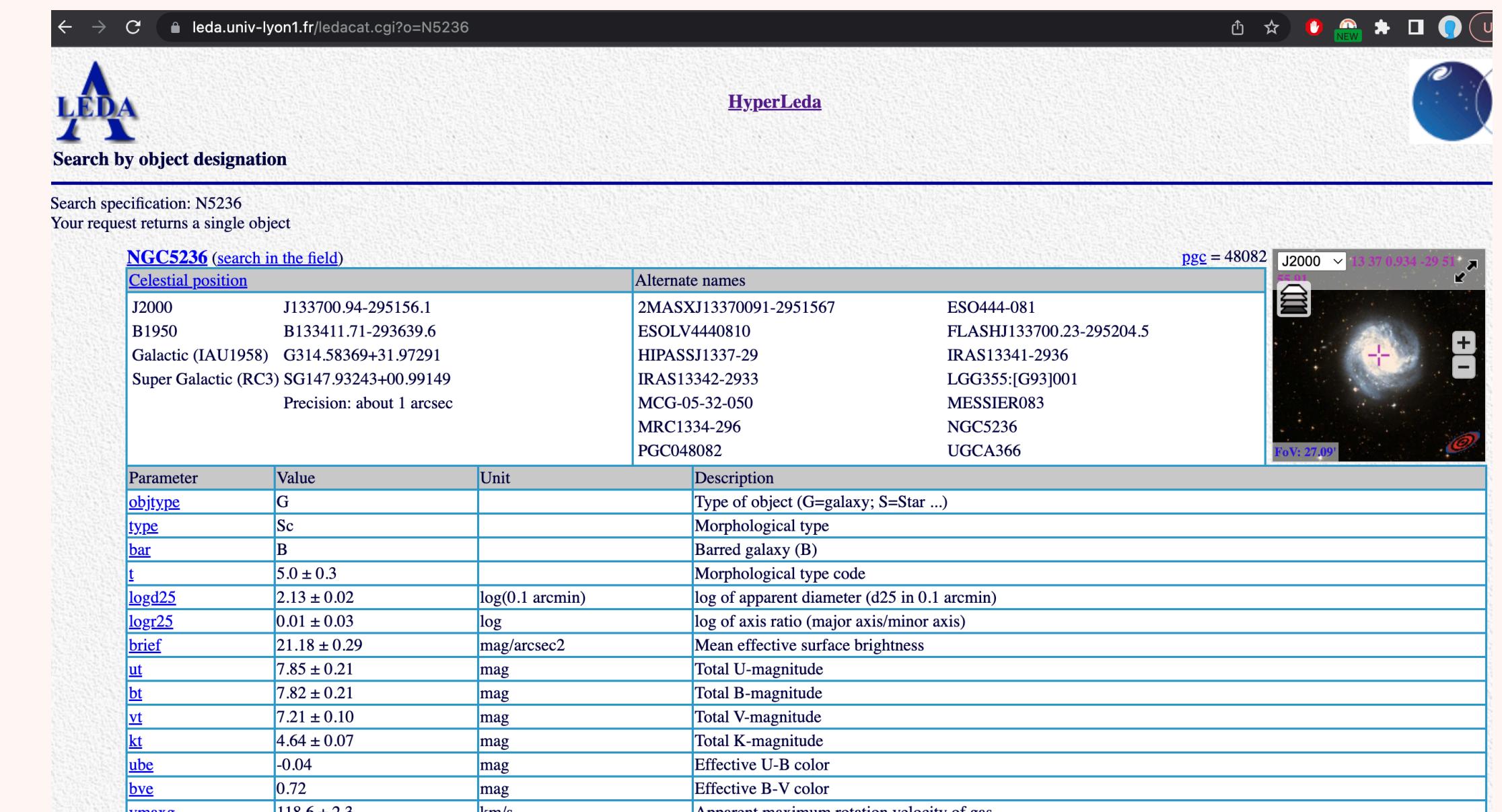
**WHAT'S SOMETHING YOU BUILT
THAT YOU'RE PROUD OF?**

THE CODING CHALLENGE

- **The presenter asks a question.**
 - **Everyone in the room tries to solve it for ~20 mins.**
 - **Then, everyone discusses what they thought, and how they approached the problem.**
 - **Share screens through zoom to show code.**
 - **Everyone talks!**
 - **Then presenter shows how far they got.**
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EXAMPLE QUESTION 1

- **get_PAiD()**
- **input: Name of a Galaxy; e.g. N5236**
- **search HyperLEDA for that object**
- **extract info from website**
- **returns: PA, inclination, and Distance**



The screenshot shows a web browser displaying the HyperLEDA search results for the object NGC5236. The URL in the address bar is `leda.univ-lyon1.fr/ledacat.cgi?o=N5236`. The page header includes the LEDA logo and the text "HyperLeda". Below the header, it says "Search by object designation" and "Search specification: N5236". It states "Your request returns a single object". The main content is a table titled "NGC5236 (search in the field)". The table has two sections: "Celestial position" and "Parameter". The "Celestial position" section lists coordinates and other identifiers. The "Parameter" section lists various astronomical parameters with their values and units. To the right of the table, there is a small image of the galaxy NGC5236 and some navigation controls.

NGC5236 (search in the field)			
Celestial position	Alternate names		
J2000 J133700.94-295156.1	2MASXJ13370091-2951567	ESO444-081	
B1950 B133411.71-293639.6	ESOLV4440810	FLASHJ133700.23-295204.5	
Galactic (IAU1958) G314.58369+31.97291	HIPASSJ1337-29	IRAS13341-2936	
Super Galactic (RC3) SG147.93243+00.99149	IRAS13342-2933	LGG355:[G93]001	
Precision: about 1 arcsec	MCG-05-32-050	MESSIER083	
	MRC1334-296	NGC5236	
	PGC048082	UGCA366	

Parameter	Value	Unit	Description
<code>objtype</code>	G		Type of object (G=galaxy; S=Star ...)
<code>type</code>	Sc		Morphological type
<code>bar</code>	B		Barred galaxy (B)
<code>t</code>	5.0 ± 0.3		Morphological type code
<code>logd25</code>	2.13 ± 0.02	log(0.1 arcmin)	log of apparent diameter (d25 in 0.1 arcmin)
<code>logr25</code>	0.01 ± 0.03	log	log of axis ratio (major axis/minor axis)
<code>brief</code>	21.18 ± 0.29	mag/arcsec ²	Mean effective surface brightness
<code>ut</code>	7.85 ± 0.21	mag	Total U-magnitude
<code>bt</code>	7.82 ± 0.21	mag	Total B-magnitude
<code>vt</code>	7.21 ± 0.10	mag	Total V-magnitude
<code>kt</code>	4.64 ± 0.07	mag	Total K-magnitude
<code>ube</code>	-0.04	mag	Effective U-B color
<code>bve</code>	0.72	mag	Effective B-V color
<code>vmax</code>	119.6 ± 2.2	km/s	Apparent maximum rotation velocity of gas

EXAMPLE QUESTION 2

- **redshift_image()**
- **input: Image file, redshift (float)**
- **show image as it would look at that redshift**



OPTIONS TO OUTSOURCE

Project Euler .net

About Archives Recent News Register Sign In

Problem Archives

The problems archives table shows problems 1 to 841. If you would like to tackle the 10 most recent problems.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

ID	Title	Solved By
1	Multiples of 3 or 5	970542
2	Even Fibonacci Numbers	774856
3	Largest Prime Factor	558454
4	Largest Palindrome Product	494534
5	Smallest Multiple	497846
6	Sum Square Difference	500850
7	10001st Prime	429141

leetcode.com/problemset/all/

Array 1421 String 628 Hash Table 489 Dynamic Programming 442 Math 439 Sorting 332 Greedy Expand ▾

All Topics Algorithms Database JavaScript Shell Concurrency

Lists Difficulty Status Tags Search questions Pick One

Status	Title	Solution	Acceptance	Difficulty	Frequency
17.	Letter Combinations of a Phone Number	57.5%	Medium	Medium	Medium
1.	Two Sum	50.3%	Easy	Easy	Easy
2.	Add Two Numbers	40.9%	Medium	Medium	Medium
3.	Longest Substring Without Repeating Characters	33.9%	Medium	Medium	Medium
4.	Median of Two Sorted Arrays	37.0%	Hard	Hard	Hard
5.	Longest Palindromic Substring	32.6%	Medium	Medium	Medium
6.	Zigzag Conversion	45.5%	Medium	Medium	Medium

ARE YOU READY?

MAKE CODE CLUB A LOGO!

- **Use matplotlib, or whatever you like!**
 - **One idea: include two Cs.**
 - **Our slogan is “all code welcome!”**
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VOLUNTEERS WANTED!

- **Woolies snack runs (reimbursed through Rachel) (you get to choose the snacks)**
 - **Presenters for coding challenges (you get to choose the coding challenge)**
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