

Dataset Expansion: CAFÉS WITH AIR CONDITIONING IN VIENNA'S 1ST DISTRICT

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Motivation

Everyone knows the situation: it's over 30°C, you're strolling through the city and decide to take a break in a café to cool down and escape the heat – only to realise it's just as hot inside.

- Vienna's city center – especially the 1st district – heats up significantly in summer due to dense surfaces and a lack of greenery.
- Many people – especially older adults and vulnerable groups – depend on cool places to rest
→ so they often try to escape the heat in nearby cafés with air conditioning.
- **But:** Currently, no reliable dataset exists showing which cafés even offer air conditioning.
→ OpenStreetMap includes AC information, but only for 6 out of 139 cafés in the 1st district (~4%).

Our motivation:

Expand the existing OSM dataset for the 1st district by filling in missing values and deleting false/outdated data, to have a complete and open dataset that indicates whether a selected café in Vienna's 1st district is air-conditioned or not.

Dataset before

	G	L	M	P	AJ
	addr:street	name	opening_hours	website	air_conditioning
1	Julius Meinl	Julius Meinl	Mo-Fr 08:00-19:30; Sa 09:00-18:00		
77	Reichsratsstraße	Café Votiv	Mo-Fr 08:00-24:00; Sa 09:00-24:00; Su,PH 09:00-23:00	https://cafe-votiv.at/	
78	Dorotheergasse	Taim Café Dorotheergasse	Mo-Fr, Su 10:00-18:00	https://www.taim.at/	
79	Kurrentgasse	Delyrium café	Mo-Sa 11:00-23:00; Su 10:00-23:00		
80	Stubenring	Café Sacher Wien	Mo-Su,PH 08:00-22:00	https://www.sacher.com/hotel-wien-2/kulinark/caffe-sacher-wien/	
81	Segafredo am Graben	Cafe Milan	Mo-Fr 08:00-01:00; Sa, Su 10:00-01:00		
82	L'Opera	Raimund	Mo-Fr 08:00-20:00; Sa-Su 09:00-20:00	https://www.cafe-raimund.com/	
83	Dorotheergasse	Köö Kafe	Mo-Fr 08:00-18:00	http://www.billardcafe.at/lokale/1010-dorotheergasse.html	
84	Naber Kaffee	Franz-Josefs-Kai	Mo-Fr 08:00-18:00		
85	Salzgries	Wilheim			
86	Dolce Pensiero	Dolce Pensiero		https://dolcepensiero.at/	
87	Giovanni	Marco-d'Aviano-Gasse	Mo-Fr 07:00-17:30; Sa 09:00-18:00	https://www.juicefactory.at/	
88	Roberto	Goldschmidgasse	Mo-Su 09:00-21:00		
89	Kashtan Patisserie	Griechengasse	Mo-Su 08:00-20:00	https://www.fenster.cafe/	
90	Fenstercafé	Osterineri			
91	Schweden Espresso	Laurenzerberg	Mo-Fr 07:00-02:00; Sa-Su 06:00-02:00		
92	Coffee & Store	Ferrari Caffe	Mo-Sa 07:30-23:00; Su 07:30-16:00	https://www.ferrari-caffè.at/	
93	Juice factory	Annagasse	Mo-Fr 07:00-19:00; Sa 09:00-18:30; Su 10:00-18:00	https://www.juicefactory.at/	
94	Haas & Haas	Unger und Klein	Mo-Sa 08:00-20:00; Su 09:00-18:00, PH 09:00-18:00	https://www.haas-haas.at/	
95	Sacher Eck	Mocarello	Mo-Su,PH 08:00-22:00		
96	Sacher Salon	Walfischgasse	10:00-22:00		
97	NÜD Coffee&Art	Bräunerstraße	Mo-Sa 08:00-18:00	http://nuedcoffee.com	no
98	Testa Rossa	Starbucks			yes
99	Vitavien	Shodal Macha			
100	Unger und Klein	Stephansplatz	Mo-Fr 08:00-23:00; Sa 10:00-23:00; Su,PH 10:00-18:00		
101	Mocarello	Milchgasse	Mo-Sa 10:00-18:00; PH off		
102	Walfischgasse	Café Gutruf			
103	Bräunerstraße	Vitavien Stephansplatz	Mo-Sa 12:00-22:00	http://cafe-gutruf-wien.smarto.net	
104	Milchgasse	Stephansplatz	Mo-Su 09:00-22:00		
105	Herengasse	Caffè Couture	Mo-Fr 08:00-17:00; Sa 10:00-17:00	https://www.capecouture.net	

Abb.01: Dataset before: Table



Abb.02: Dataset before: Folium map

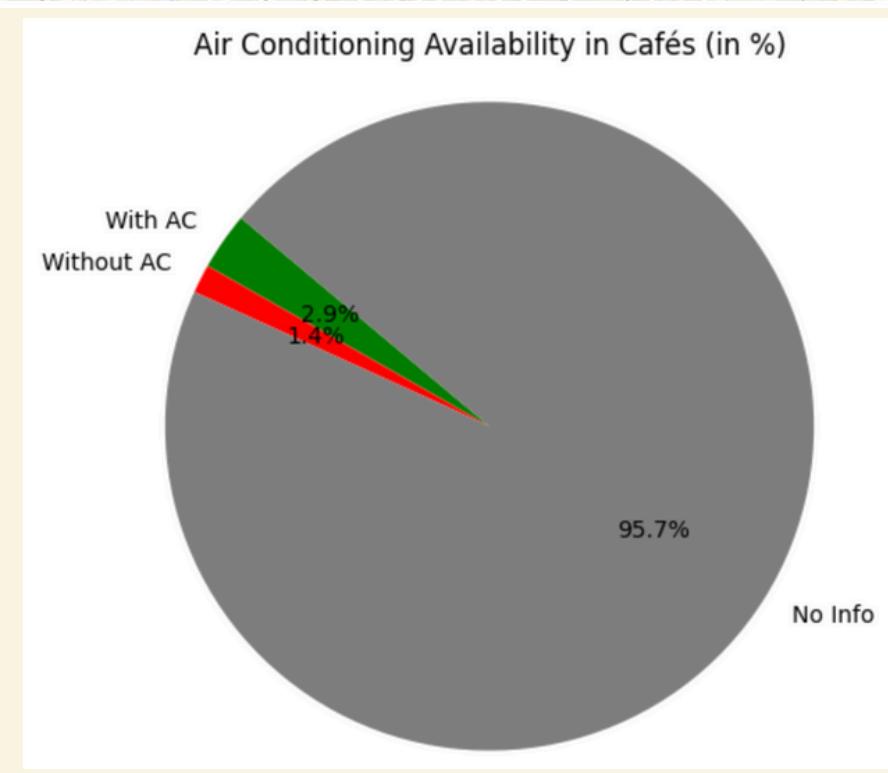


Abb.03: Dataset before: Chart

Data completeness for 139 cafés

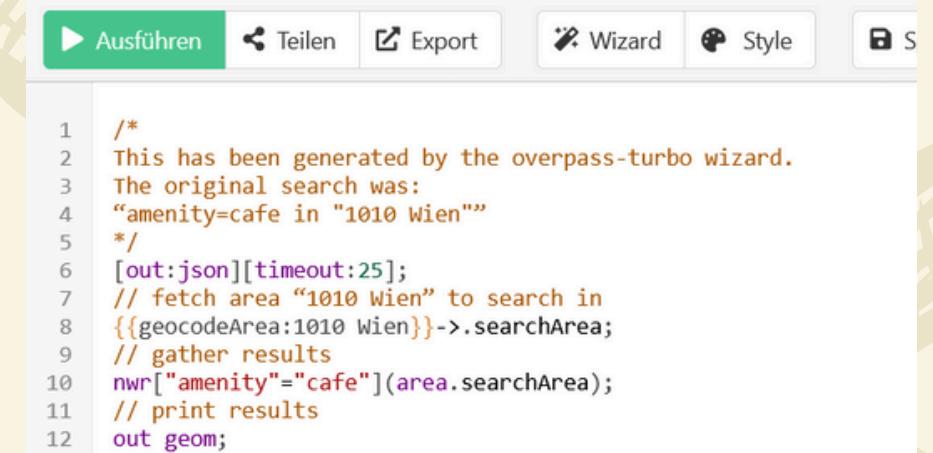
(1st District, Vienna):

- 26% of cafés had **no opening hours** listed
- 32% had **no street name** provided
- 53% were **missing website** information
- 96% had **no data on air conditioning** availability

→ In total, there were **299 missing or false/outdated values** across these four columns.

Technical Aspects/ Workflow

- We started by using OSM Overpass API to query all cafés located in the 1st district of Vienna
- The resulting GeoJSON file was then converted into a table format for further processing
→ We filtered all cafés that had no information about air conditioning availability
- For these cafés, we called each location individually to ask whether they had air conditioning or not
→ Based on the responses, we updated the air_conditioning column accordingly (yes/no)
- Additionally, we completed missing values and removed incorrect or outdated entries for the following fields for each café:
 - add:street (street name)
 - opening_hours
 - website
- Finally, we downloaded the updated dataset and visualised it in JupyterHub using a Folium map



```

1 /*
2 This has been generated by the overpass-turbo wizard.
3 The original search was:
4 "amenity=cafe in "1010 Wien"""
5 */
6 [out:json][timeout:25];
7 // fetch area "1010 Wien" to search in
8 {{geocodeArea:1010 Wien}}->.searchArea;
9 // gather results
10 nwr["amenity"="cafe"](.searchArea);
11 // print results
12 out geom;

```

Abb.04: Overpass query

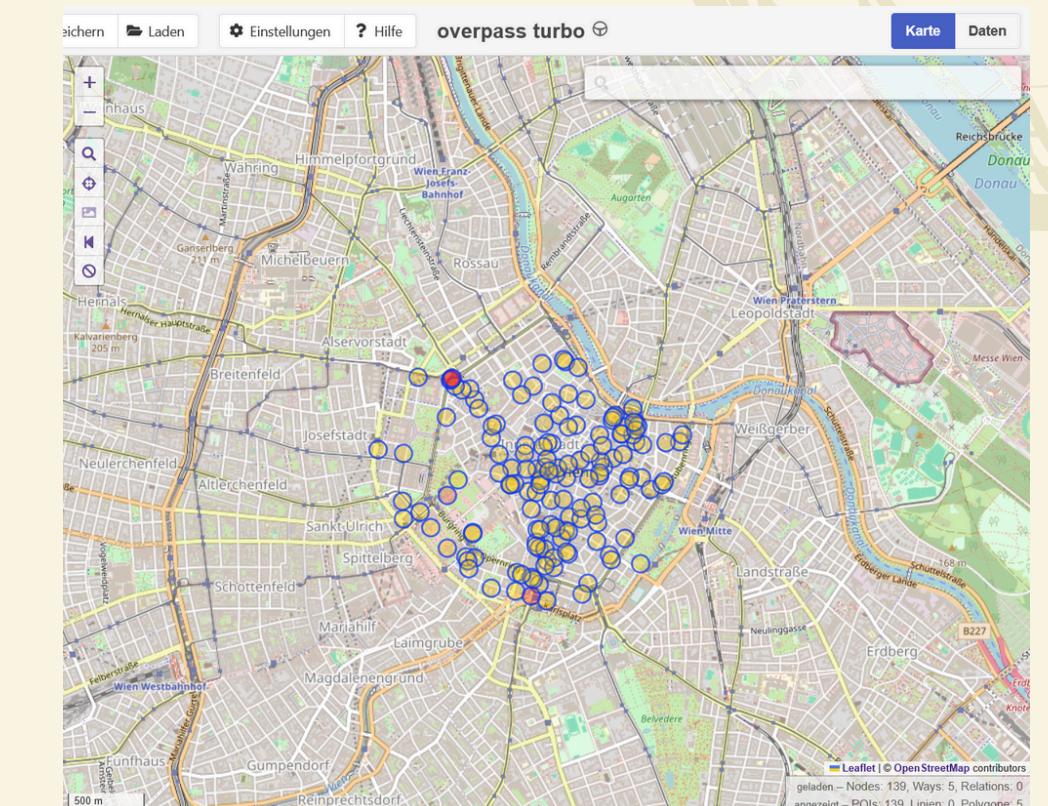


Abb.05: Overpass query result

Dataset after

	G	L	M	P	AJ
1	addr:street	name	opening_hours	website	air_conditioning
22	Bognergasse	aïda	Mo-Su 08:00-20:00	https://aida.at/	yes
23	Freyung	Stadtcafé	Mo-Sa 08:00-24:00, Su,PH 09:00-22:00	https://www.stadtcafe-wien.at/	yes
24	Stallburggasse	Café Bräunerhof	Mo-Fr 08:00-19:00; Sa 08:00-18:00; Su,PH 10:00-18:00	http://www.braeunerhof.at/	no
25	Rotenturmstraße	Starbucks	Su-We 07:00-21:30; Th 07:00-22:30; Fr 08:30-22:30; Sa 08:30-21:30	http://www.starbucks.at/	yes
26	Schwedenplatz	Anker	Mo-Fr 05:00-19:00; PH,Sa,Su 05:00-19:00	http://www.ankerbrot.at/filialen	yes
27	Opernring	aïda	Mo-Fr 07:00-21:00; Sa 08:00-21:00; Su,PH 08:00-21:00	https://aida.at/?page_id=1231	yes
28	Wolzeile	Diglas	Mo-Fr 08:00-22:30; Sa 09:00-22:30; PH off	https://www.diglas.at	no
29	Johannesgasse	Hegelhof	Tu-Sa 09:00-20:00	https://www.cafehegelhof.com/	yes
30	Schubertring	Kotor	Mo-So 08:00-00:00	https://kotor-vienna-city-bar.eatbu.com/?lang=en	yes
31	Sellerstraße	Cafe-Confiterie Ronacher	Tu,We 14:00-19:00; Th-Sa 14:00-22:00; Su,Mo off	http://www.caferonacher.com/	no
32	Rotenturmstraße	Daniel Moser	Do-Sa 08:00-02:00; So 10:00-00:00; Mo-Mi 08:00-00:00	http://www.danielmoser.at/	no
33	Kärntner Straße	Conditorrei Sluka	Mo-Th 08:20-20:00; Fr 08:00-21:00; Sa 09:00-21:00; PH,Su 10:00-17:00	https://www.sluka.at	no
34	Wolzeile	L. Heiner Hofzuckerbäcker	Mo-Sa 09:00-18:30; PH,Su 10:00-18:30	http://www.heiner.co.at/	yes
35	Wolzeile	Il Bosso	Mo-Sa 12:00-22:00; Su 12:00-18:00	http://www.ilbosso.at/	yes
36	Wolzeile	aïda	Mo-Sa 07:30-19:30; So 09:00-18:00	http://aida.at/	yes
37	Riemergasse	Peters Operncafé Hartauer	Do-Sa 18:00-01:00; So-Mi geschlossen	http://www.petersoperncafe.at	yes
38	Johannesgasse	Metro Kinobar	Mo-Su 17:00-23:00	http://www.filmarchiv.at/	no
39	Schulerstraße	Cafe Porta	Mo-Sa 18:00-24:00	http://www.cafe-porta.com/	no
40	Himmelpfortgasse	Eisgrotte	Mo-Sa 10:00-21:00; Su 13:00-21:00	https://www.eisgrotte.at/	no
41	Kohlmarkt	Demel	Mo-Su 09:00-19:00	http://www.demel.at/	yes
42	Freyung	Splendid bar Italia	Mo-Mi, Fr-Sa 11:30-20:00; Do 11:30-00:00; So geschlossen	https://zattl.sta.io/	no
43	Führichgasse	Cafe Tirolerhof	Mo-Fr 08:20-21:00; Su 09:30-20:00	https://cafetirolerhof.at/	yes
44	Georg-Coch-Platz	Café Ministerium	Mo-Fr 07:00-20:00; PH off	https://cafeministerium.at/	no
45	Dr.-Karl-Lueger-Platz	Perrella	Mo-Su,PH 09:30-20:00	http://www.perrella.at/	yes
46	Kärntner Ring	Imperial Cafe	Mo-So 07:00-23:00	http://www.cafe-imperial.at/	yes
47	Wipplingerstraße	IKO Kitchen & Bar	Mo-Fr 11:00-22:00; Sa 12:00-22:00; PH off	https://www.juicefactory.at/	yes
48	Schottengasse	Juice factory	Mo-Fr 07:30-18:00; Sa,Su 08:00-17:00	http://www.starbucks.at/	yes
49	Reitschulgasse	Starbucks	Mo-Fr 08:00-20:00; Sa 08:00-21:00	http://www.prueckel.at	yes
50	Stubenring	Café Prückel	Mo-Su 08:30-22:00	http://www.starbucks.at/	yes
51	Schottengasse	Starbucks	Mo-Fr 06:30-21:00; Sa 08:00-19:00; Su 09:00-19:00	http://www.starbucks.at/	yes
52	Blumenstockgasse	Cafe Neko	Mo-Su 10:00-20:00	http://cafeneko.at	no
53	Schönlaterngasse	Lukas	17:00-04:00	https://www.facebook.com/CafeBarLukas	yes
54	Graben	Café de l'Europe	Mo-Fr 07:24-24:00; Sa 07:30-24:00; PH,Su 08:00-24:00	https://www.castelletto.at	yes
55	Burggraben	burg.ring1	Mo-We 11:00-22:00; Th-Sa 11:00-24:00; Su off; PH unknown	https://burgring.at/	yes
56	Schillerplatz	Cafeteria der Akademie der bildend Mo-Fr 08:30-16:00	https://www.akbild.ac.at/Portal/organisation/services/mensa	yes	
57	Johannesgasse	Kleinod Stadtgarten	Vorübergehend geschlossen	https://www.kleinod-stadtgarten.wien	no

Abb.06: Dataset before: Table

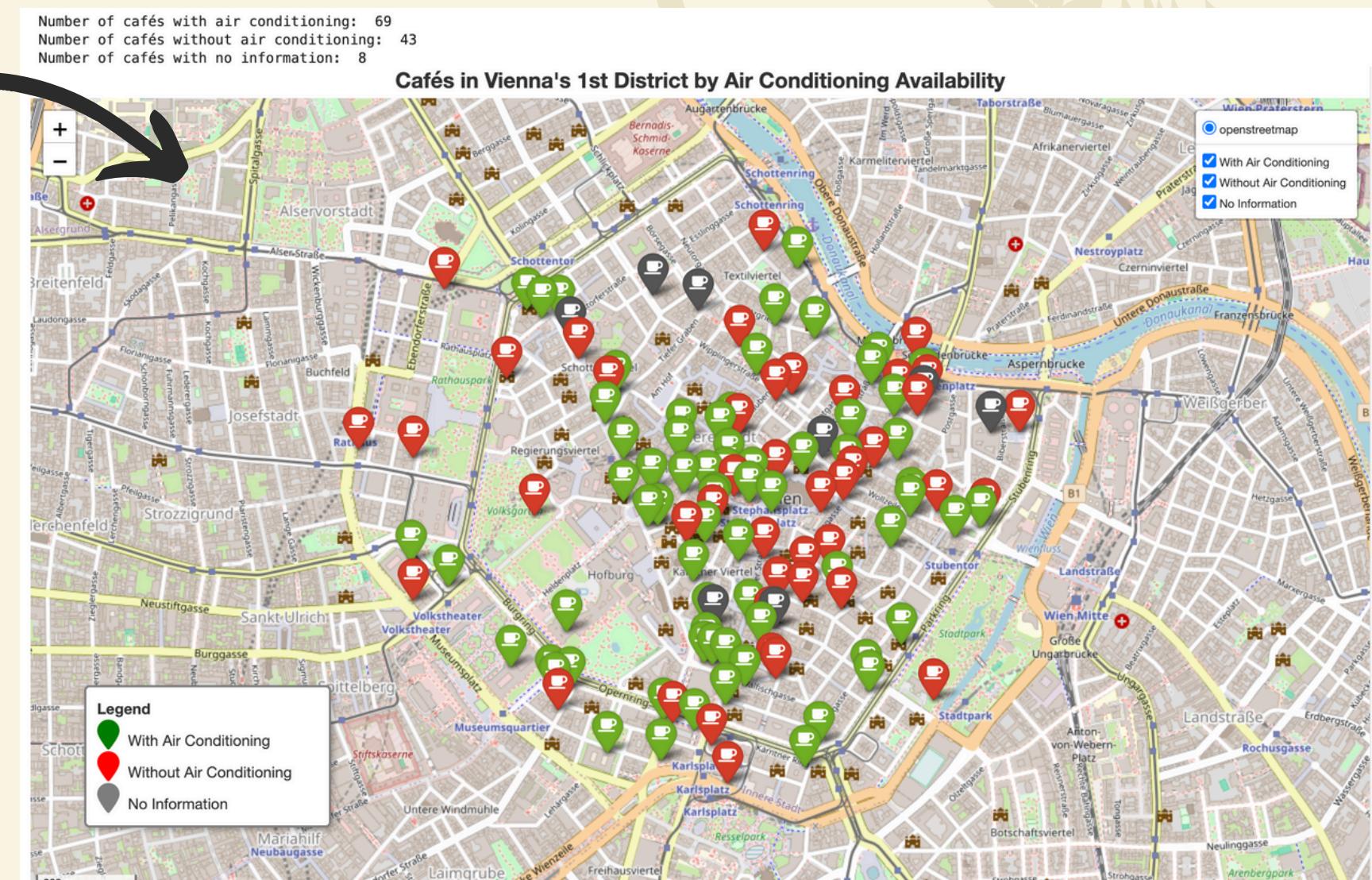
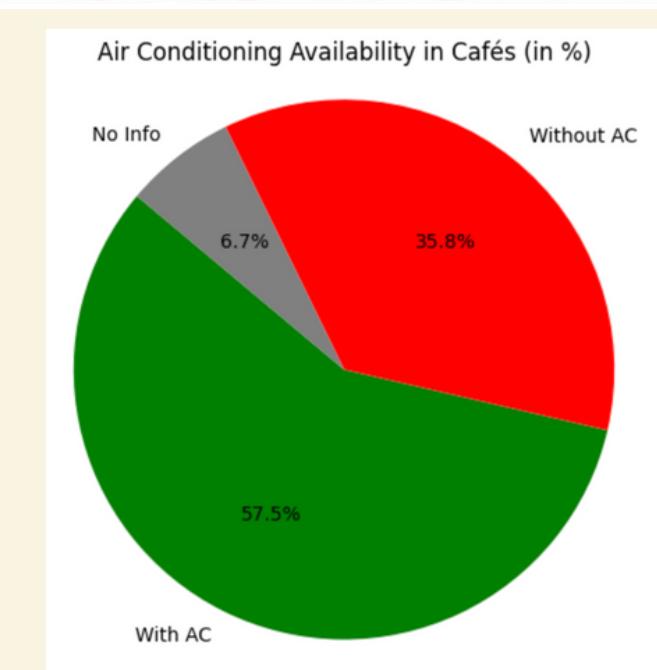


Abb.07: Dataset before: Table

After cleaning, the dataset contains **120 valid cafés** in Vienna's 1st district:

- **69 with air conditioning (58%)**
- **43 without air conditioning (36%)**
- **8 with no information available(7%)**



Availability/ Limitations

- **Permanently closed / duplicate cafés removed: 19**
→ 120 remaining cafés
- Total number of values we **could not update** across all four columns: **12**
 - 3 missing websites
 - 1 missing opening hour
 - 8 missing informations on air conditioning
- Total number of **missing or false/outdated values that were successfully adjusted:**
 - **131 values for air conditioning**
 - **35 opening hours**
 - **44 street names**
 - **71 websites**
 - **6 café names**
→ in total we **adjusted 287 values**



Use case

Target Group

Residents, tourists, and vulnerable populations (e.g., elderly) seeking cool indoor places during extreme heat.

Scenario 1: OpenStreetMap Contribution

Verified AC information can be re-integrated into OSM.

Supports community mapping efforts and improves POI completeness for climate-related attributes.

Scenario 2: Public Heat Resilience

Useful for urban planning and heatwave preparedness.

Enables city agencies to identify safe, cool places for vulnerable groups.

Scenario 3: Smart City Applications

Potential integration into apps like WienBot or local mobility platforms.

Helps users find nearby air-conditioned locations in real time.

Scenario 4: Research & Urban Analytics

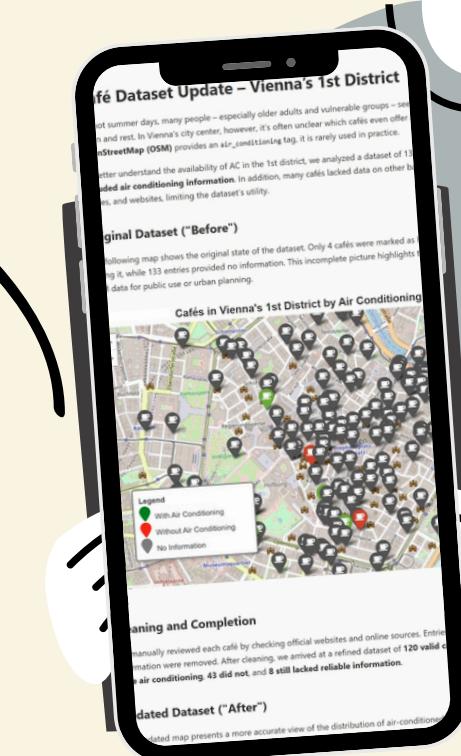
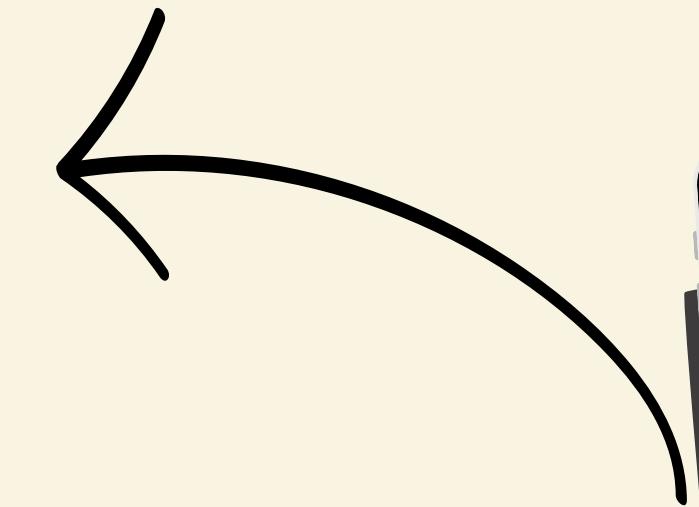
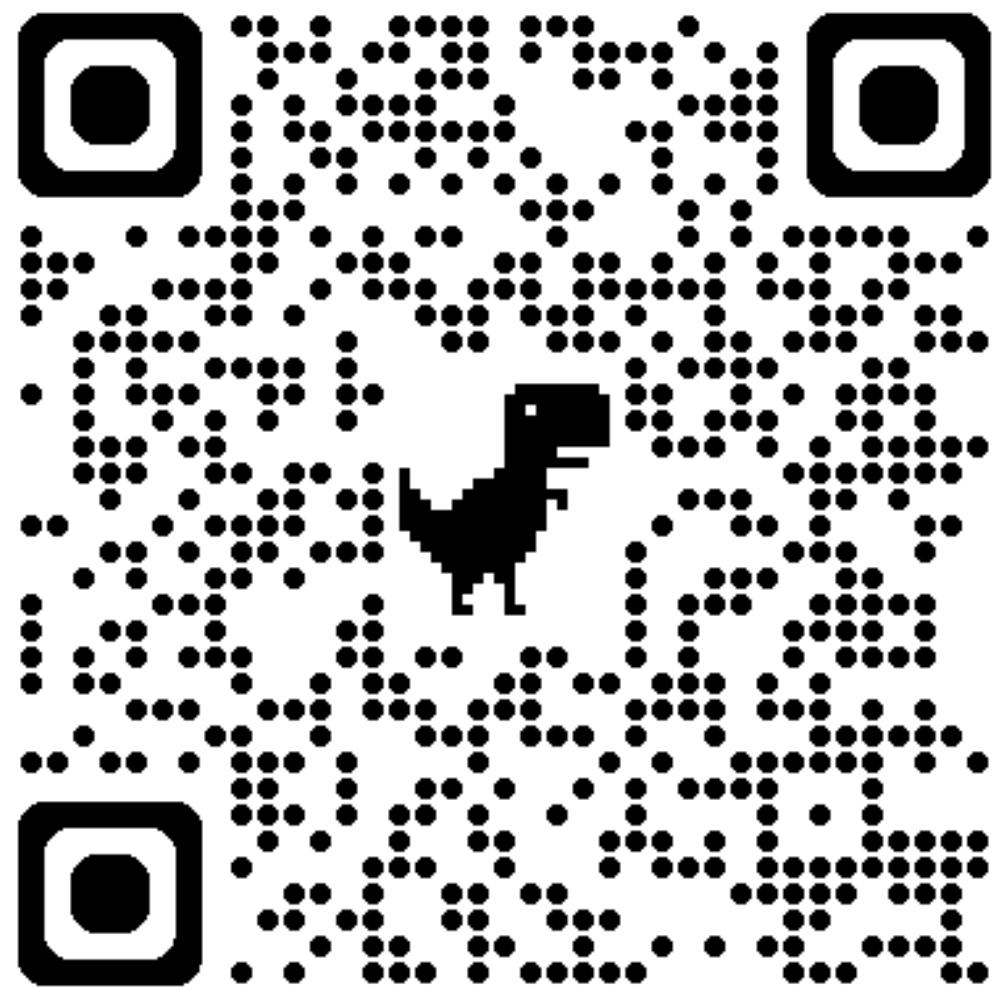
Dataset enables spatial analysis of cooling infrastructure.

Supports academic and municipal studies on heat exposure and urban inequality.



Demo/ Analysis

Please feel free to scan the QR-Code





THANK YOU
FOR LISTENING!