# Schedule Generator

Claire Kraft

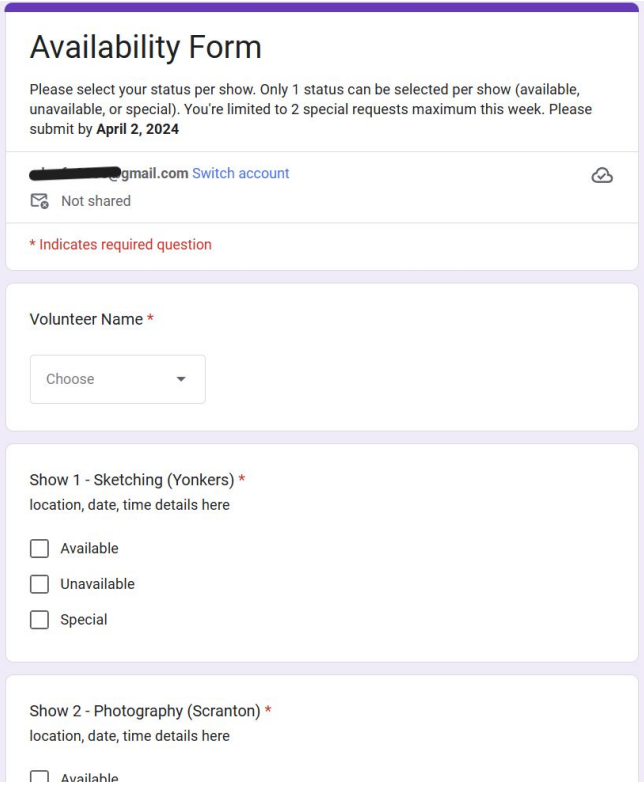
# Context

The office cast all sign up to volunteer at the week long arts show to support Pam. Each member need to indicate their availability per show. After the forms are complete a generator will select 3 volunteers per show to be on staff.

# Process

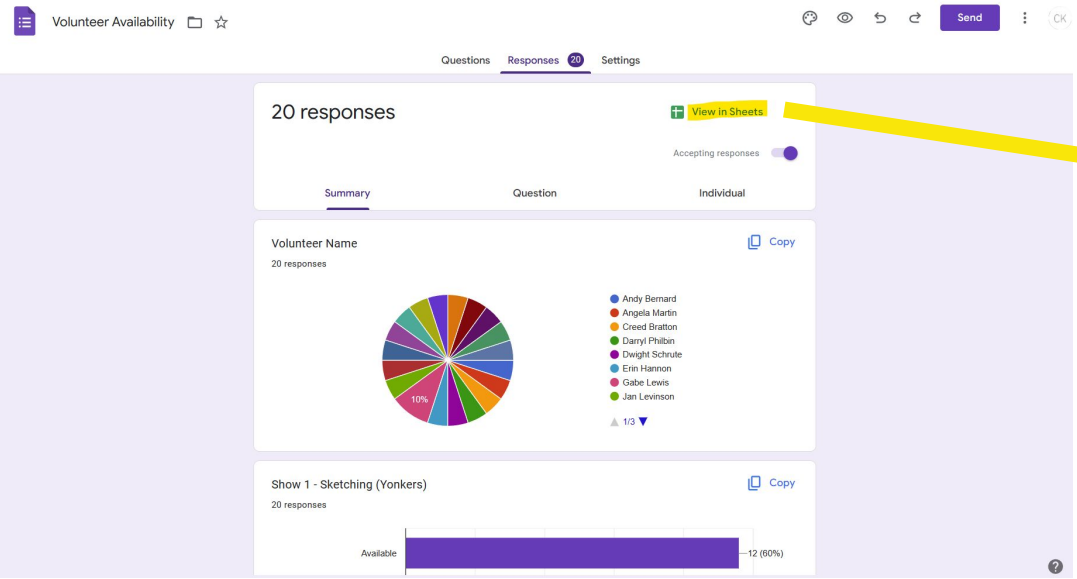
- Google forms - intake volunteers' availabilities
  - Status
  - Name
  - Show
- Data cleaning script
  - Saves google sheets
  - Cleans google sheets
    - Standardizes column header
    - Takes the latest submission per volunteer
- Usher generator script
  - Selects 3 volunteers per show
  - Priority by status (Special > available)
  - Ensures Jim and Dwight do not work the same show

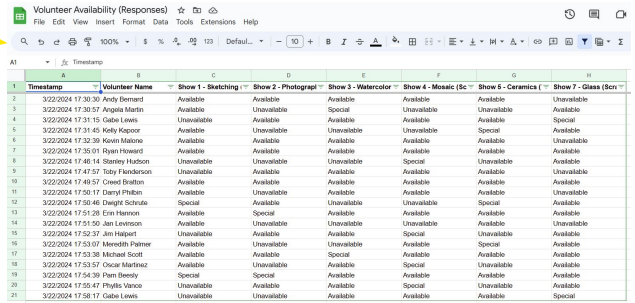
# Google Forms



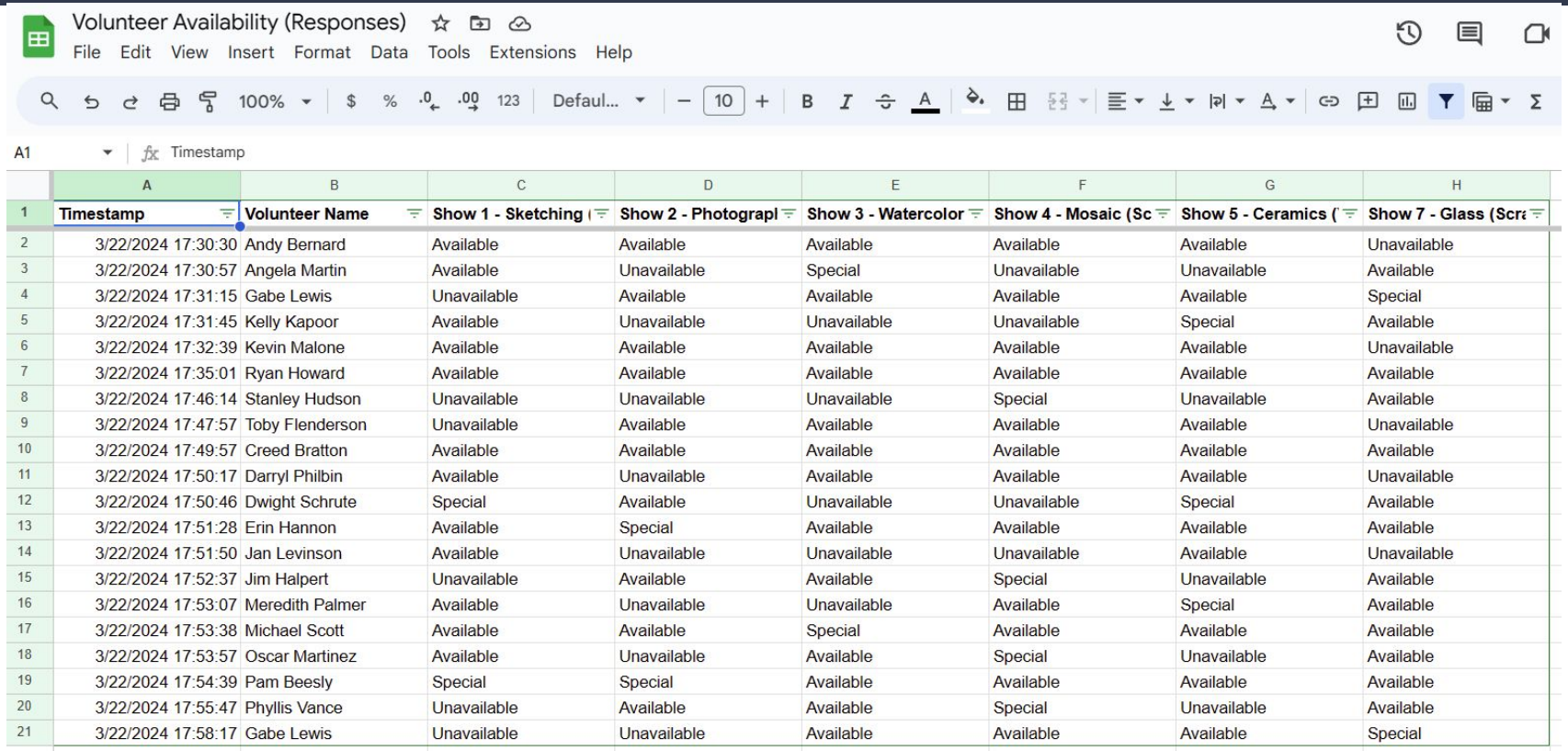

- Dropdown for volunteer names
- Shows are preceded with “Show x-” and followed by locations
- Location, date, time details
- Only 1 status can be chosen / show
- Demo the form: https://forms.gle/8Af4j3W6vko78u2YA

# Google Forms



# Google Forms



Volunteer Availability (Responses)

File Edit View Insert Format Data Tools Extensions Help

A1 Timestamp

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | Timestamp | Volunteer Name | Show 1 - Sketching ( | Show 2 - Photograpl | Show 3 - Watercolor | Show 4 - Mosaic (Sc | Show 5 - Ceramics ( | Show 7 - Glass (Scra |
| 2 | 3/22/2024 17:30:30 | Andy Bernard | Available | Available | Available | Available | Available | Unavailable |
| 3 | 3/22/2024 17:30:57 | Angela Martin | Available | Unavailable | Special | Unavailable | Unavailable | Available |
| 4 | 3/22/2024 17:31:15 | Gabe Lewis | Unavailable | Available | Available | Available | Available | Special |
| 5 | 3/22/2024 17:31:45 | Kelly Kapoor | Available | Unavailable | Unavailable | Unavailable | Special | Available |
| 6 | 3/22/2024 17:32:39 | Kevin Malone | Available | Available | Available | Available | Available | Unavailable |
| 7 | 3/22/2024 17:35:01 | Ryan Howard | Available | Available | Available | Available | Available | Available |
| 8 | 3/22/2024 17:46:14 | Stanley Hudson | Unavailable | Unavailable | Unavailable | Special | Unavailable | Available |
| 9 | 3/22/2024 17:47:57 | Toby Flenderson | Unavailable | Available | Available | Available | Available | Unavailable |
| 10 | 3/22/2024 17:49:57 | Creed Bratton | Available | Available | Available | Available | Available | Available |
| 11 | 3/22/2024 17:50:17 | Darryl Philbin | Available | Unavailable | Available | Available | Available | Unavailable |
| 12 | 3/22/2024 17:50:46 | Dwight Schrute | Special | Available | Unavailable | Unavailable | Special | Available |
| 13 | 3/22/2024 17:51:28 | Erin Hannon | Available | Special | Available | Available | Available | Available |
| 14 | 3/22/2024 17:51:50 | Jan Levinson | Available | Unavailable | Unavailable | Unavailable | Available | Unavailable |
| 15 | 3/22/2024 17:52:37 | Jim Halpert | Unavailable | Available | Available | Special | Unavailable | Available |
| 16 | 3/22/2024 17:53:07 | Meredith Palmer | Available | Unavailable | Unavailable | Available | Special | Available |
| 17 | 3/22/2024 17:53:38 | Michael Scott | Available | Available | Special | Available | Available | Available |
| 18 | 3/22/2024 17:53:57 | Oscar Martinez | Available | Unavailable | Available | Special | Unavailable | Available |
| 19 | 3/22/2024 17:54:39 | Pam Beesly | Special | Special | Available | Available | Available | Available |
| 20 | 3/22/2024 17:55:47 | Phyllis Vance | Unavailable | Available | Available | Special | Unavailable | Available |
| 21 | 3/22/2024 17:58:17 | Gabe Lewis | Unavailable | Unavailable | Available | Available | Available | Special |

# Data Cleaning

- Data cleaning script
  - Saves google sheets
  - Cleans google sheets
    - Standardizes column header
    - Takes the latest submission per volunteer

```
# Uppercase column headers
raw_df.columns = raw_df.columns.str.upper()

# Convert the timestamp column to datetime format
raw_df['TIMESTAMP'] = pd.to_datetime(raw_df['TIMESTAMP'])

# Group by volunteer name and get the index of the row with the latest timestamp for each volunteer
latest_indices = raw_df.groupby('VOLUNTEER NAME')['TIMESTAMP'].idxmax()

# Select the rows with the latest timestamp for each volunteer
latest_rows = raw_df.loc[latest_indices]
```

# Data Cleaning

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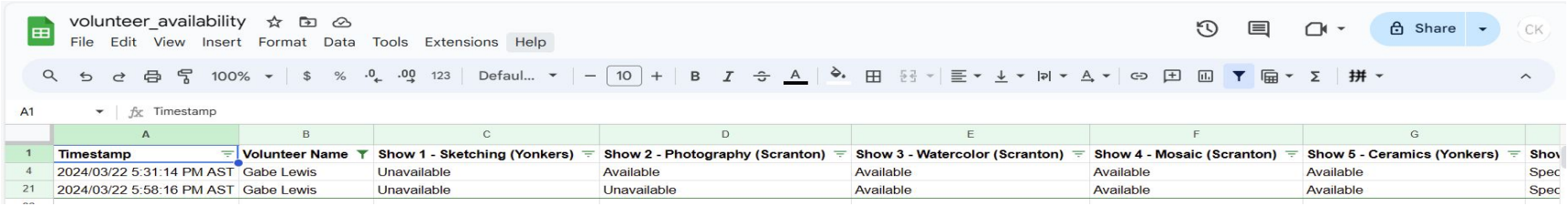
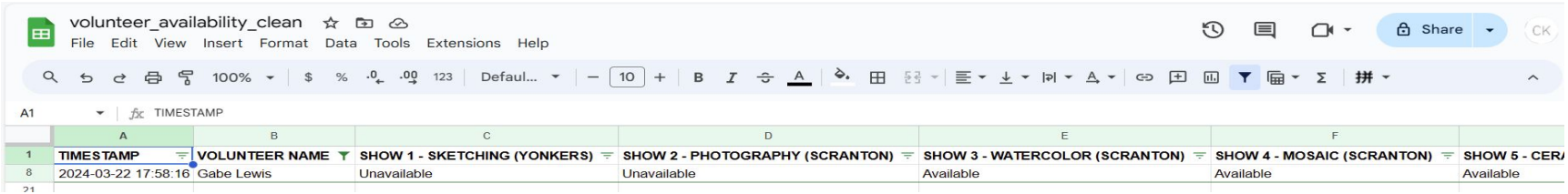


# Volunteer generator

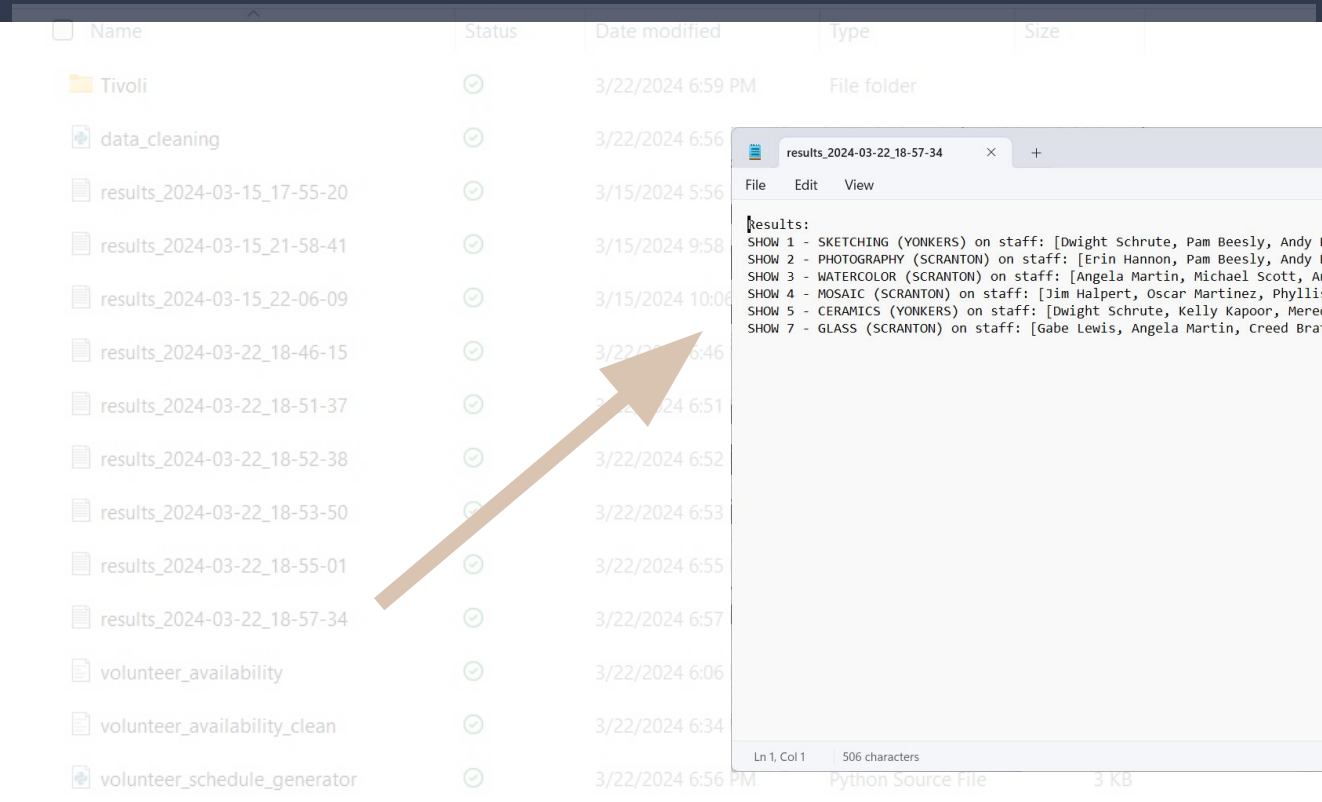
- Volunteer generator script
  - Selects 3 volunteers per show
  - Priority by status (Special > available)
  - Ensures Jim and Dwight do not work the same show

```python
def generate_pool(df, col_name):
    special = list(df[df[col_name] == "Special"]["VOLUNTEER NAME"])
    available_volunteers = list(df[(df[col_name] == "Available") | (df[col_name] == "Special")]["VOLUNTEER NAME"])

    # Exclude Dwight if Jim is in the pool, and vice versa
    if "Jim" in special:
        available_volunteers = [volunteer for volunteer in available_volunteers if volunteer != "Dwight"]
    elif "Dwight" in special:
        available_volunteers = [volunteer for volunteer in available_volunteers if volunteer != "Jim"]

    # Select volunteers for the show, prioritize special volunteers
    pool = special[:min(3, len(special))] + available_volunteers[:max(0, 3 - len(special))]
    return pool
```

# Output


Name
Status
Date modified
Type
Size
Tivoli
3/22/2024 6:59 PM
File folder
data_cleaning
results_2024-03-15_17-55-20
results_2024-03-15_21-58-41
results_2024-03-15_22-06-09
results_2024-03-22_18-46-15
results_2024-03-22_18-51-37
results_2024-03-22_18-52-38
results_2024-03-22_18-53-50
results_2024-03-22_18-55-01
results_2024-03-22_18-57-34
volunteer_availability
volunteer_availability_clean
volunteer_schedule_generator
3/22/2024 6:56 PM
Python Source File
3 KB
results_2024-03-22_18-57-34
File
Edit
View
Results:
SHOW 1 - SKETCHING (YONKERS) on staff: [Dwight Schrute, Pam Beesly, Andy Bernard]
SHOW 2 - PHOTOGRAPHY (SCRANTON) on staff: [Erin Hannon, Pam Beesly, Andy Bernard]
SHOW 3 - WATERCOLOR (SCRANTON) on staff: [Angela Martin, Michael Scott, Andy Bernard]
SHOW 4 - MOSAIC (SCRANTON) on staff: [Jim Halpert, Oscar Martinez, Phyllis Vance]
SHOW 5 - CERAMICS (YONKERS) on staff: [Dwight Schrute, Kelly Kapoor, Meredith Palmer]
SHOW 7 - GLASS (SCRANTON) on staff: [Gabe Lewis, Angela Martin, Creed Bratton]
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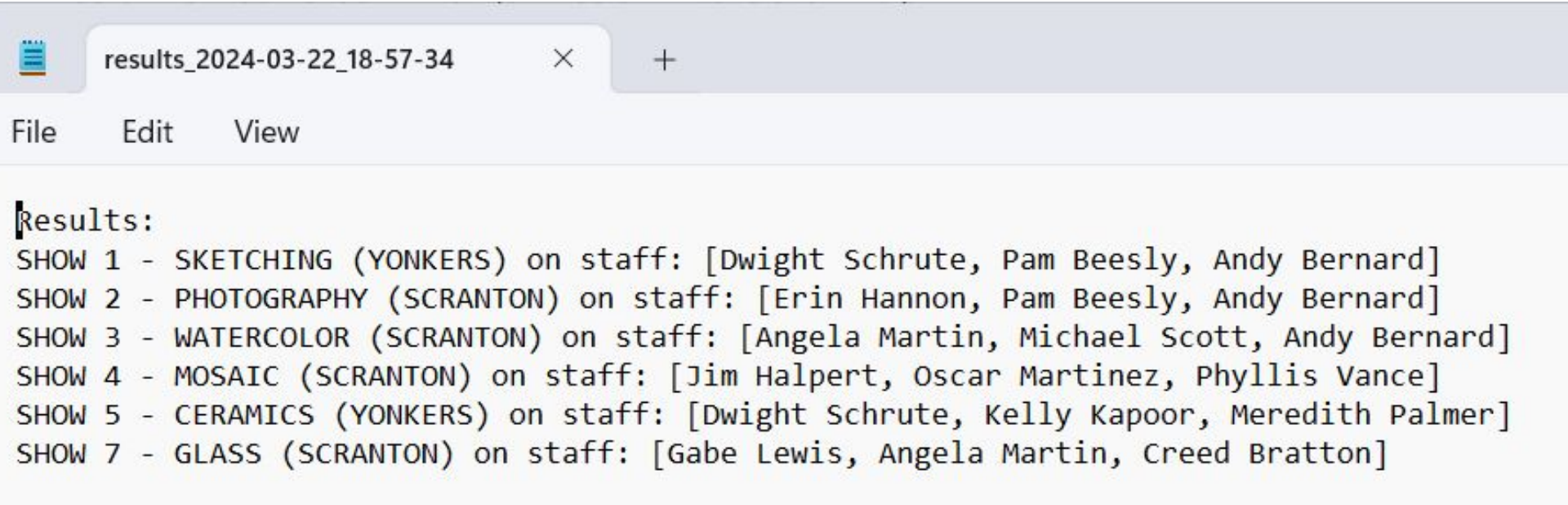
506 characters
100%
Windows (CRLF)
UTF-8

# Output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# Code source

My repo: schedule_generator/season3_episode17 at main · ckraft-bot/schedule_generator (github.com)