

Schedule Generator

Claire Kraft

A dark blue diagonal gradient bar that starts from the bottom left corner and extends towards the top right corner, covering the lower half of the slide.

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

The screenshot shows a Google Form titled "Availability Form". Below the title is a paragraph of instructions: "Please select your status per show. Only 1 status can be selected per show (available, unavailable, or special). You're limited to 2 special requests maximum this week. Please submit by April 2, 2024". Below this is a header bar showing a user profile (redacted email), a "Switch account" link, and a "Not shared" status. A red asterisk note states "* Indicates required question". The form contains three sections, each with a title, a red asterisk, and a subtitle "location, date, time details here". The first section is "Volunteer Name", followed by a dropdown menu with "Choose" and a downward arrow. The second section is "Show 1 - Sketching (Yonkers)", followed by three radio button options: "Available", "Unavailable", and "Special". The third section is "Show 2 - Photography (Scranton)", followed by a radio button option for "Available".

Availability Form

Please select your status per show. Only 1 status can be selected per show (available, unavailable, or special). You're limited to 2 special requests maximum this week. Please submit by **April 2, 2024**

[Redacted]@gmail.com [Switch account](#)

Not shared

* Indicates required question

Volunteer Name *

Choose ▼

Show 1 - Sketching (Yonkers) *
location, date, time details here

☐ Available

☐ Unavailable

☐ Special

Show 2 - Photography (Scranton) *
location, date, time details here

☐ Available

- 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

Volunteer Availability

Send

Questions Responses 20 Settings

20 responses

View in Sheets

Accepting responses

Summary

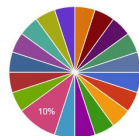
Question

Individual

Volunteer Name

20 responses

Copy



● Andy Bernard
● Angela Martin
● Creed Bratton
● Darryl Philbin
● Dwight Schrute
● Erin Hannon
● Gabe Lewis
● Jan Levinson

1/3

Show 1 - Sketching (Yonkers)

20 responses

Copy

Available 12 (60%)

Volunteer Availability (Responses)							
File Edit View Insert Format Data Tools Extensions Help							
A1 Timestamp B Volunteer Name C Show 1 - Sketching D Show 2 - Photography E Show 3 - Watercolor F Show 4 - Mosaic (S G Show 5 - Ceramics H Show 7 - Glass (Bo							
1	3/22/2024 17:30:30	Andy Bernard	Available	Available	Available	Available	Unavailable
2	3/22/2024 17:30:57	Angela Martin	Available	Unavailable	Special	Unavailable	Available
3	3/22/2024 17:31:15	Gabe Lewis	Unavailable	Available	Available	Available	Special
4	3/22/2024 17:31:45	Kelly Kapoor	Available	Unavailable	Unavailable	Unavailable	Special
5	3/22/2024 17:32:39	Kevin Malone	Available	Available	Available	Available	Unavailable
6	3/22/2024 17:30:01	Ryan Howard	Available	Available	Available	Available	Available
7	3/22/2024 17:48:14	Stanley Hudson	Unavailable	Unavailable	Unavailable	Special	Unavailable
8	3/22/2024 17:47:57	Toby Flenderson	Unavailable	Available	Available	Available	Unavailable
9	3/22/2024 17:48:57	Creed Bratton	Available	Available	Available	Available	Available
10	3/22/2024 17:50:17	Darryl Philbin	Available	Unavailable	Available	Available	Unavailable
11	3/22/2024 17:50:46	Dwight Schrute	Special	Available	Unavailable	Unavailable	Special
12	3/22/2024 17:51:28	Erin Hannon	Available	Special	Available	Available	Available
13	3/22/2024 17:51:09	Jan Levinson	Available	Unavailable	Unavailable	Available	Unavailable
14	3/22/2024 17:52:37	Jim Halpert	Unavailable	Available	Available	Special	Unavailable
15	3/22/2024 17:53:07	Meredith Palmer	Available	Unavailable	Unavailable	Available	Special
16	3/22/2024 17:53:38	Michael Scott	Available	Available	Available	Available	Available
17	3/22/2024 17:53:57	Oscar Martinez	Available	Unavailable	Available	Special	Unavailable
18	3/22/2024 17:54:39	Pam Beesly	Special	Special	Available	Available	Available
19	3/22/2024 17:54:47	Phyllis Vance	Unavailable	Available	Available	Special	Unavailable
20	3/22/2024 17:58:17	Gabe Lewis	Unavailable	Unavailable	Available	Available	Special

Google Forms

Volunteer Availability (Responses) ☆ 📌 ☁

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	A	B	C	D	E	F	G	H
1	Timestamp	Volunteer Name	Show 1 - Sketching	Show 2 - Photograph	Show 3 - Watercolor	Show 4 - Mosaic (Sc	Show 5 - Ceramics	Show 7 - Glass (Scr
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()

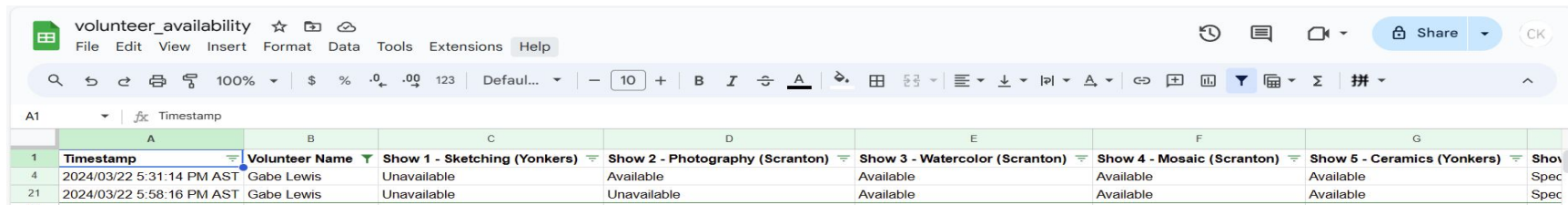
# Convert the timestamp column to datetime format
raw_df['TIMESTAMP'] = pd.to_datetime(raw_df['TIMESTAMP'])

# 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

- Data cleaning script
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 - Takes the latest submission per volunteer

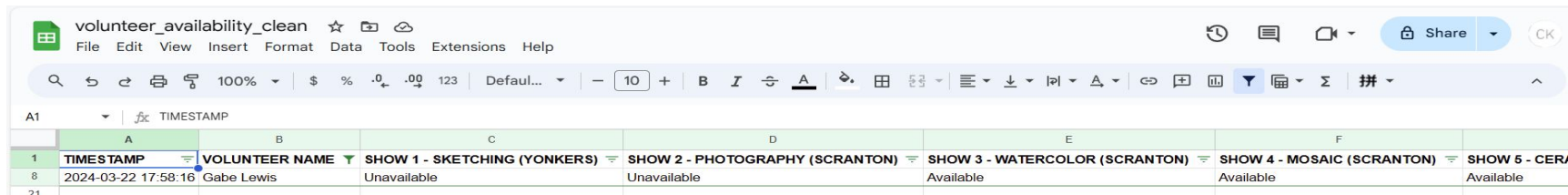


volunteer_availability

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	A	B	C	D	E	F	G	
1	Timestamp	Volunteer Name	Show 1 - Sketching (Yonkers)	Show 2 - Photography (Scranton)	Show 3 - Watercolor (Scranton)	Show 4 - Mosaic (Scranton)	Show 5 - Ceramics (Yonkers)	Show 6 - Pottery (Scranton)
4	2024/03/22 5:31:14 PM AST	Gabe Lewis	Unavailable	Available	Available	Available	Available	Spec
21	2024/03/22 5:58:16 PM AST	Gabe Lewis	Unavailable	Unavailable	Available	Available	Available	Spec



volunteer_availability_clean

File Edit View Insert Format Data Tools Extensions Help

100% 123 Default... 10 B I A

	A	B	C	D	E	F	
1	TIMESTAMP	VOLUNTEER NAME	SHOW 1 - SKETCHING (YONKERS)	SHOW 2 - PHOTOGRAPHY (SCRANTON)	SHOW 3 - WATERCOLOR (SCRANTON)	SHOW 4 - MOSAIC (SCRANTON)	SHOW 5 - CERAMICS (YONKERS)
8	2024-03-22 17:58:16	Gabe Lewis	Unavailable	Unavailable	Available	Available	Available

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

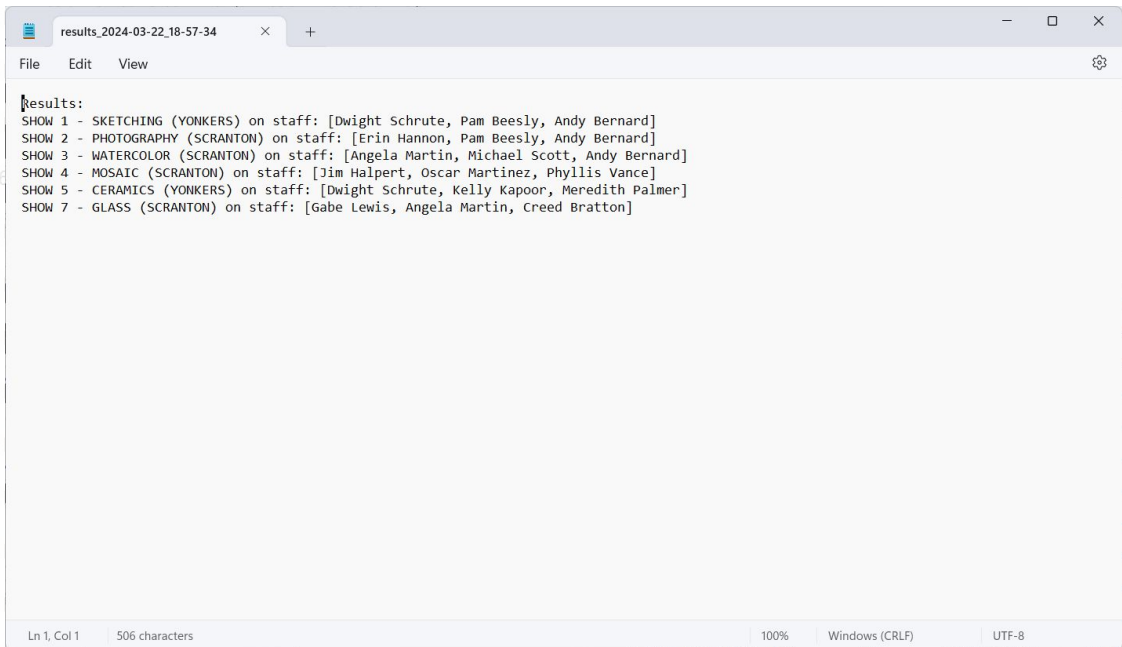
```
def generate_pool(df, col_name):
    special = list(df[df[col_name] == "Special"]["VOLUNTEER NAME"])
    available_volunteers = list(df[(df[col_name] == "Available") | (df[col_name] == "Special")]["VOLUNTEER NAME"])

    # 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
```

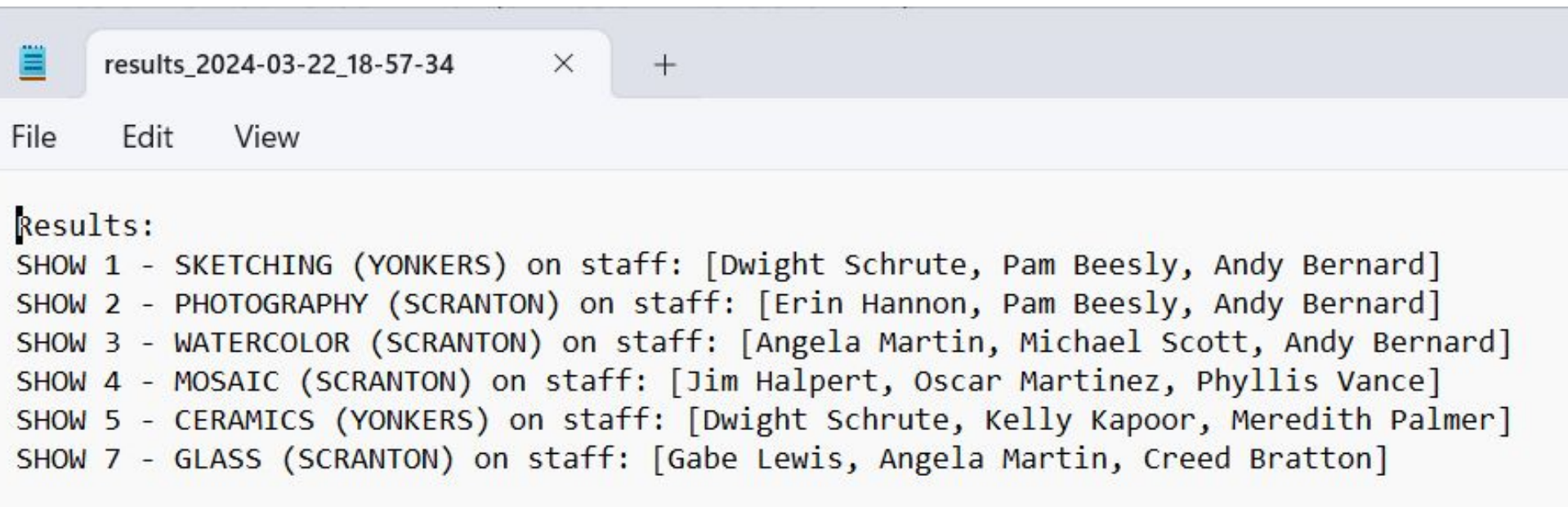
Output

Name	Status	Date modified	Type	Size
Tivoli	✓	3/22/2024 6:59 PM	File folder	
data_cleaning	✓	3/22/2024 6:56 PM		
results_2024-03-15-17-55-20	✓	3/15/2024 5:56 PM		
results_2024-03-15-21-58-41	✓	3/15/2024 9:58 PM		
results_2024-03-15-22-06-09	✓	3/15/2024 10:06 PM		
results_2024-03-22-18-46-15	✓	3/22/2024 6:46 PM		
results_2024-03-22-18-51-37	✓	3/22/2024 6:51 PM		
results_2024-03-22-18-52-38	✓	3/22/2024 6:52 PM		
results_2024-03-22-18-53-50	✓	3/22/2024 6:53 PM		
results_2024-03-22-18-55-01	✓	3/22/2024 6:55 PM		
results_2024-03-22-18-57-34	✓	3/22/2024 6:57 PM		
volunteer_availability	✓	3/22/2024 6:06 PM		
volunteer_availability_clean	✓	3/22/2024 6:34 PM		
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]
Ln 1, Col 1 | 506 characters | 100% | Windows (CRLF) | UTF-8
```

Output



```
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]
```

Code source

My repo:

[schedule_generator/season3_episode17](#) at main · [ckraft-bot/schedule_generator](#) ([github.com](#))