

# **VOLUNTEER MANAGEMENT SYSTEMS FOR NON-PROFITS**

**A USER GUIDE TO GOOGLE FORMS,  
GOOGLE SHEETS, AND RETOOL**

## Volunteer Management Systems for Non-Profits: A User Guide to Google Forms, Google Sheets, and Retool

Project Title: Strengthening La Goyco's Volunteer Program: Enhancing the Volunteer Experience through Welcoming, Data Management, and Business Partnerships

Date: May 2<sup>nd</sup>, 2023

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For More Information: <https://wp.wpi.edu/puertorico/projects/2023-mar-may-2/goyco/>

*\*This work was produced by undergraduate students in the Worcester Polytechnic Institute (WPI) Global Projects Program. For more information: <https://wp.wpi.edu/puertorico/>*

### **What is this document?**

- This user manual is designed to assist non-profit organizations such as Taller Comunidad La Goyco in developing a volunteer management system (VMS) for their organization using the Retool software.

### **Why was it produced?**

- This manual was produced to provide an intuitive walkthrough of how such a system can be used.

### **Who is it for?**

- This manual is intended for all non-profit organizations. It contains a section detailing the implementation at Taller Comunidad La Goyco.

### **How can people use it?**

- Organizations can use the VMS to help keep track of volunteer activities, hours, and contact information.

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1. Contact us to let us know of your interest.
2. Maintain all authorship and other acknowledgements in any revised versions.
3. Share the revised version with us.

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Caño 3.7



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## Volunteer Management Systems for Non-Profits: A User Guide to Google Forms, Google Sheets, and Retool

This manual provides a walkthrough of a volunteer management system (VMS) for non-profits using the software known as Retool.

A VMS helps non-profits analyze data and identify trends that can be used in grant applications, program management and internal organization, etc.

The 1<sup>st</sup> Edition of this guide was developed by a team of WPI students in Fall 2021 for the Caño 3.7 Organization. The 2<sup>nd</sup> Edition has been updated by our team in Spring 2023 to meet the needs of Taller Comunidad La Goyco.

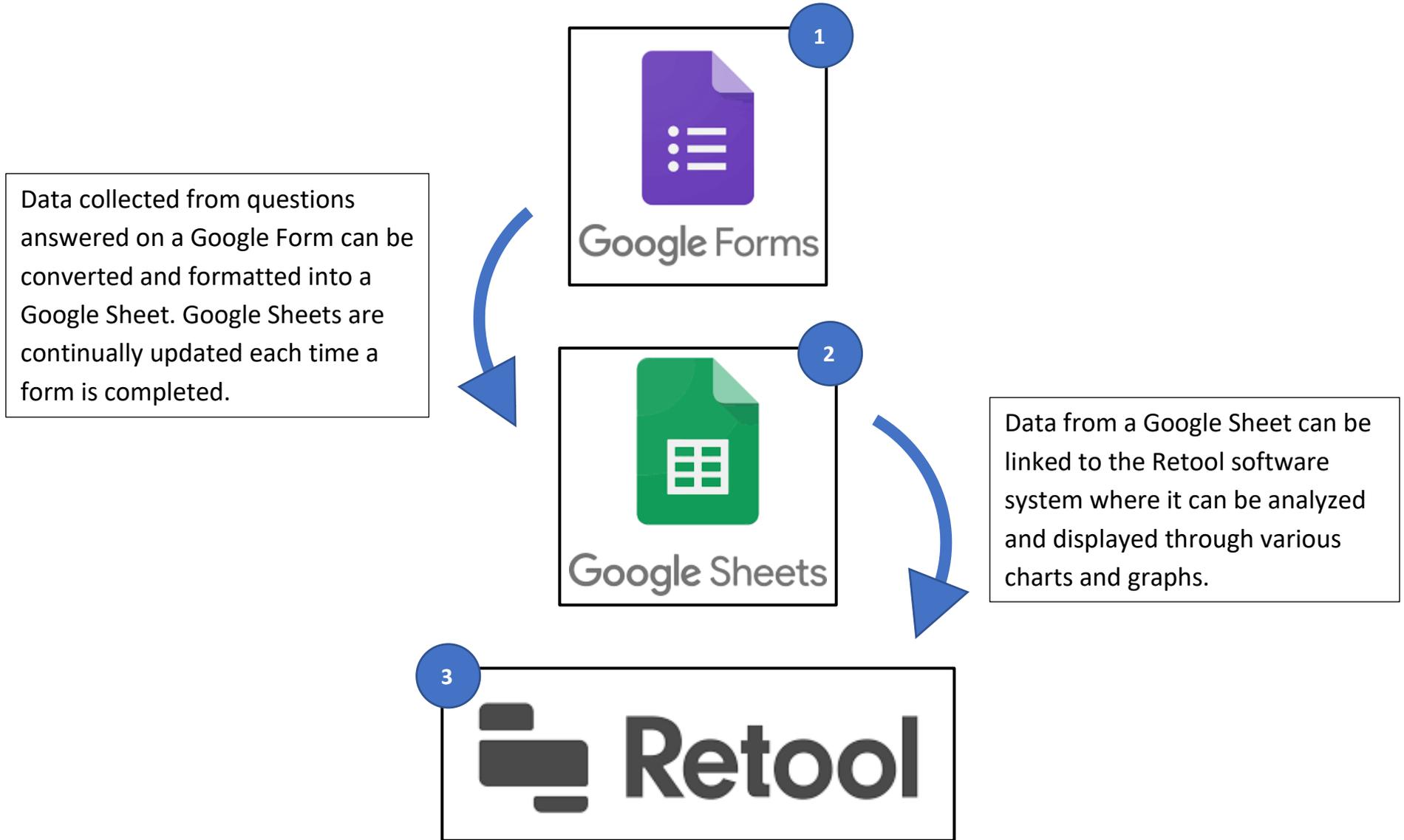
We first discuss a case study detailing the implementation and features of the VMS developed for Taller Comunidad La Goyco. This is followed by a detailed discussion of those features that can be applicable to many non-profits.

To display data in the VMS, volunteers first fill out a Google Form accessed through a QR code that can be scanned with a phone. Volunteers have the option to provide various details, including personal contact information, how they learned about the organization, their skill sets, interests, or other information the organization may require. This information can be directly exported into a Google Sheet. Retool software can retrieve that data to display analytics in the dashboard.

Retool is a powerful tool that utilizes JavaScript, SQL, and other technologies to create a visually appealing dashboard. The online Retool University is a useful resource to learn how to use the software. It and other resources can be found in the external resource chapter.

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## Flow of Information from Google to Retool



## Information Flow at Taller Comunidad La Goyco

1

Registro para voluntarios nuevos / New Volunteer Sign In

[Acceder a Google](#) para guardar el progreso. [Más información](#)

\* Indica que la pregunta es obligatoria

Nombre / Name \*

Tu respuesta

Correo electrónico / Email Address (N/A si no tiene uno) \*

Tu respuesta

Número de teléfono / Phone Number (N/A si no tiene uno) \*

Tu respuesta



Nombre / Name	Correo electrónico / Email Address (N/A si no tiene uno)	Número de teléfono / Phone Number (N/A si no tiene uno)
Jessica Smith	jsmith@example.com	555-555-1111
James Patrick	jpatrick@example.com	555-555-2222
Katherine Wilson	kwilson@example.com	555-555-3333
Brian White	bwhite@example.com	555-555-4444

2

Nombre	Correo electrónico	Número de teléfono ↑
Jessica Smith	jsmith@example.com	555-555-1111
James Patrick	jpatrick@example.com	555-555-2222
Katherine Wilson	kwilson@example.com	555-555-3333
Brian White	bwhite@example.com	555-555-4444

3



## Case Study: Taller Comunidad La Goyco

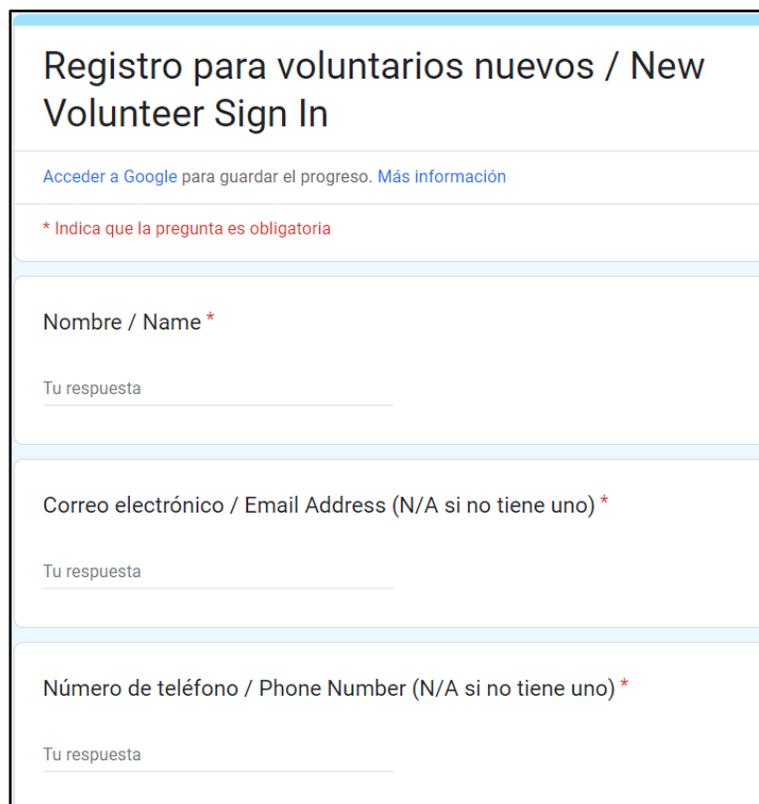
Taller Comunidad La Goyco is a community organization located in San Juan, Puerto Rico that relies on volunteer help to support their cultural, health, and environmental initiatives. Although they have approximately 100 volunteers, as of 2023, they did not have a formalized system to track volunteer information and hours. Using Google Forms, Google Sheets, and Retool, our IQP team developed a system to both collect contact information from new volunteers and track hours completed by volunteers.



### Google Forms

Volunteers were invited to scan one of two QR codes that led them to Google Form to fill out. One QR code applies to new/first-time volunteers. That QR code is displayed on the Taller Comunidad La Goyco Welcoming Poster. New, or first-

time volunteers, are asked to supply information such as their name, email address, telephone number, home address, how they heard about Taller Comunidad La Goyco, their skills and interests. New volunteers are then asked a conditional (Yes/No) question about whether they live in the Machuchal community in Santurce.



**Registro para voluntarios nuevos / New Volunteer Sign In**

[Acceder a Google](#) para guardar el progreso. [Más información](#)

\* Indica que la pregunta es obligatoria

Nombre / Name \*

Tu respuesta

Correo electrónico / Email Address (N/A si no tiene uno) \*

Tu respuesta

Número de teléfono / Phone Number (N/A si no tiene uno) \*

Tu respuesta

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The other QR code printed on a separate sign applies to recurring volunteers. Recurring volunteers are asked their name, the project/program they worked on/for, the number of hours they volunteered in that session, and any feedback they have for Taller Comunidad La Goyco staff and administration.

### Hoja de asistencia / Time Sheet

[Acceder a Google](#) para guardar el progreso. [Más información](#)

\* Indica que la pregunta es obligatoria

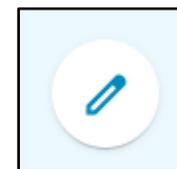
Nombre / Name \*

Tu respuesta

Proyecto / Project \*

- Jardín Comunitario / Community Garden
- Sala de Lectura / Library
- Administración / Administration
- Salud / Health
- Casa de la Plena / Plena Museum
- Brigada de limpieza / Cleaning Brigade
- Construcción / Construction

If desired, a new Program/Project can be added at any time to both the New Volunteer and Recurring Volunteer Google Forms by clicking the “Pencil” edit icon on the bottom right of each Google Form, then clicking “Add option” on the “¿Qué le interesa? / What are you interested in?” or “Proyecto / Project” question.



*Pencil Edit Icon*

- Cine / Movie Night ×
- Jazz en La Goyco /Jazz Night ×
- Option 13** ×
- Other... ×
- Add option ←

*Adding a New Program/Project*

## Google Sheets

This information is added directly on a Google Sheet. The Retool program then retrieves data from Google Sheets to display analytics on the Retool dashboard.

Nombre / Name	Correo electrónico / Email Address (N/A si no tiene uno)	Número de teléfono / Phone Number (N/A si no tiene uno)
Jessica Smith	jsmith@example.com	555-555-1111
James Patrick	jpatrick@example.com	555-555-2222
Katherine Wilson	kwilson@example.com	555-555-3333
Brian White	bwhite@example.com	555-555-4444

*Google Sheet of New/First-Time Volunteers*

Nombre / Name	Proyecto / Project	Horas / Hours
Jessica Smith	Recogido de Reciclaje / Recycling Cleanup	30
James Patrick	Jardín Comunitario / Community Garden	12
Katherine Wilson	Sala de Lectura / Library	26
Brian White	Brigada de limpieza / Cleaning Brigade	6

*Google Sheet of Recurring Volunteers*

In addition to the “Form Responses 1” tab generated by the Google Form, other tabs in the Recurring Volunteers spreadsheet can be used for further analysis:

1. **“Validated Responses”** displays information about a volunteer and the program/project to which they contributed.

A	B	C	D
Timestamp	Nombre / Name	Proyecto / Project	Horas / Hours
4/24/2023 13:26:09	Jessica Smith	Recogido de Reciclaje / Recycling	30
4/24/2023 13:33:46	James Patrick	Jardín Comunitario / Community	12
4/24/2023 13:34:17	Katherine Wilson	Sala de Lectura / Library	26
4/24/2023 13:34:28	Brian White	Brigada de limpieza / Cleaning Br	6

2. **“Project Summaries”** displays information about all programs/projects at Taller Comunidad La Goyco – adding a new row here with the name of the program/project, the person in charge and their email, and a description of the project will allow this data to be displayed on the Retool dashboard. Hours volunteered at each program/project are calculated automatically once the program/project’s name is added to the tab.

A	B	C	D	E
Proyecto / Project	Persona encargada	Email	Descripción del proyecto	Total de horas
Jardín Comunitario / Community Garden	Cristina	-	-	20
Sala de Lectura / Library	Ilana	-	-	31
Administración / Administration	Eunice	-	-	0
Salud / Health	Johanna	-	-	0
Casa de la Plena / Plena Museum	Emanuel	-	-	21
Brigada de limpieza / Cleaning Brigade	Ricky	-	-	6
Construcción / Construction	Pepin	-	-	16
Ambiental	Ilana	-	-	0
Recogido de Reciclaje / Recycling Cleanup	Anna	-	-	30

3. **“Value per Hour”** displays information of the monetary value of each project/program at Taller Comunidad La Goyco – if desired, adding a new row with the name of the program/project will allow you to set the monetary value of that program/project; otherwise, that program/project’s value will default to the value set in the “Other” row. This default value may be edited by editing the value in the “Other” row.

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Proyecto / Project	Valor por hora	Fuente
Jardín Comunitario / Community	\$10	Ponga fuente aquí
Sala de Lectura / Library	\$12	Ponga fuente aquí
Administración / Administration	\$13	Ponga fuente aquí
Salud / Health	\$16	Ponga fuente aquí
Casa de la Plena / Plena Museum	\$15	Ponga fuente aquí
Brigada de limpieza / Cleaning Br	\$18	Ponga fuente aquí
Construcción / Construction	\$9	Ponga fuente aquí
Other	\$9	Ponga fuente aquí

4. **“Summaries”** provides an automatic breakdown of every Program/Project submitted, so it is not necessary to edit this tab unless you would like to change the monetary value goal, which can be edited by changing the value in the “Meta” column.

Proyecto / Project	SUMA de Horas / Hours	Valor por hora	Total	Meta	Persona encargada	Horas / Hours Distintas
Basketball	4	9	\$36	\$10,000	Anna	1
Brigada de limpieza / Cleaning Brigade	6	18	\$108		Cristina	3
Casa de la Plena / Plena Museum	21	15	\$315		Emanuel	1
Construcción / Construction	16	9	\$144		Iliana	2
Jardín Comunitario / Community Garden	20	10	\$200		No encontrado	1
Recogido de Reciclaje / Recycling Cleanu	30	9	\$270		Pepin	3
Sala de Lectura / Library	31	12	\$372		Ricky	1
<b>Grand Total</b>	<b>128</b>		<b>0</b>		<b>Grand Total</b>	<b>9</b>

## Retool

Using the Retool application, Taller Comunidad La Goyco administrators can view information about their volunteers and programs/projects in a central location, with tabs to view volunteer contact information and volunteer timesheets.

Contactos		
Buscar por nombre	<input type="text" value="Introduzca el nombre"/>	
Buscar por intereses	<input type="text" value="Seleccione interés(es)"/>	
Nombre	Correo electrónico	Número de teléfono ↑
Jessica Smith	jsmith@example.com	555-555-1111
James Patrick	jpatrick@example.com	555-555-2222
Katherine Wilson	kwilson@example.com	555-555-3333
Brian White	bwhite@example.com	555-555-4444

*Volunteer Contact Info on the “Contactos” Tab*

Contactos			
Nombre	Proyecto	Horas	Persona encargada
Jessica Smith	Recogido de Recicl...	30	Anna
James Patrick	Jardín Comunitario ...	12	Cristina
Katherine Wilson	Sala de Lectura / Li...	26	Iliana
Brian White	Brigada de limpieza...	6	Ricky

*Volunteer Programs/Projects on the “Hoja de asistencia” Tab*

## Volunteer Management Systems for Non-Profits: A User Guide to Google Forms, Google Sheets, and Retool

Additionally, clicking on a volunteer's name will open a page displaying their information, alongside options to add a picture and a biography.



TALLER COMUNITARIO LA GOVCO INC.

### Jessica Smith

Correo Electrónico: [jsmith@example.com](mailto:jsmith@example.com)  
Número de teléfono: 555-555-1111  
Dirección: 100 Institute Road, Worcester, MA 01609  
Intereses: Sala de Lectura / Library  
¿Vive en Machuchal?: No  
¿Quiere unirse al WhatsApp?: No  
Habilidades: Escritura, traducción  
¿Cómo se enteró?: Vivo aquí

Biografía

Cambie foto

## Sample Retool Dashboard

**Tablero de control para voluntaries**  
**¡Bienvenidos!**

TALLER COMUNIDAD LA GOYCO INC.

**Total de voluntaries**  
**5**

**Voluntarie con más horas**  
**Jessica Smith**

**Datos de voluntaries** Año: 2023

Contactos Hoja de asistencia Empresas

Buscar por nombre: Introduzca el nombre

Buscar por intereses: Seleccione interés(es)

Nombre	Correo electrónico	Número de teléfono ↑	Dirección	¿Qué le interesa?
Jessica Smith	jsmith@example.com	555-555-1111	100 Institute Road, Worcester, MA 01609	Sala de Lectura / Library

## Retool Components

### Total Number of Volunteers

This component makes it easy to identify the number of volunteers in the organization.



### Volunteer with the Most Hours

This component shows the volunteer who has volunteered the most across all programs in the organization.



### Year Picker

This component controls the entire dashboard. The selected year acts as a filter for all components. Analytics (graphs and charts) will only display data from the selected year.



A year picker component consisting of a label "Año" followed by a text input field containing "2023" and a small downward-pointing arrow icon on the right side, indicating a dropdown menu.

## Volunteer Data

### Data Entries

Jessica Smith	Recogido de Recicl...	30
James Patrick	Jardín Comunitario ...	12
Katherine Wilson	Sala de Lectura / Li...	26
Brian White	Brigada de limpieza...	6

Figure 1

This component allows administrators to view all volunteers who have logged hours with their organization. Data entries include volunteer names, the project the volunteered on, and the number of hours completed (Figure 1).

Persona encargada	Email	Descripción del proyecto	Total de horas
Jenna Barnes	jbarnes@example.com	Tareas administrativas	30
Michael Smith	msmith@example.com	Plantar vegetales	12
Emily Holmes	eholmes@example.com	Ayudar con libros	26
Jason Phillips	jphillips@example.com	Salud de la comunidad	6

Figure 2

For a specific project or program the volunteer completed, administrators can also view data such as the person in charge of the project, the email of the person in charge, a description of the project, and the total number of hours that volunteers contributed to that project overall, etc. (Figure 2).

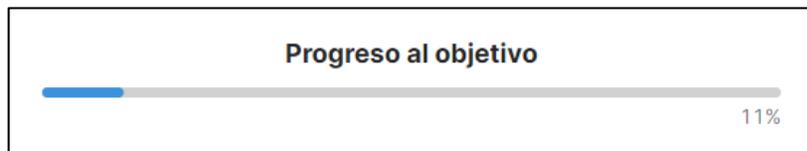
## Goal

This component displays a monetary value goal for the organization based on volunteer hours contributed to each task. An organization can set these monetary goals.

**Objetivo**  
**\$10,000**

## Progress to Goal

This component shows the progress made towards the goal on a dollar amount depending on the value per hour of each project.



## Projects

This component shows a table of projects and programs that an organization has available for volunteers. The columns in this table are:

1. Project name
2. Person in charge
3. Project description
4. Total hours contributed by volunteers to project

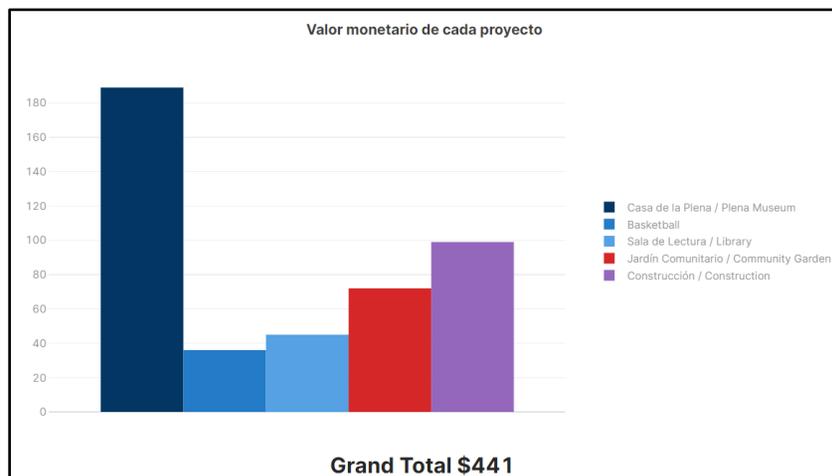
Proyecto / Project	Persona encargada
Jardín Comunitario / Community Garden	Michael Smith
Sala de Lectura / Library	Emily Holmes
Administración / Administration	Jenna Barnes
Salud / Health	Jason Phillips

Descripción del proyecto	Total de horas
Plantar vegetales	12
Ayudar con libros	26
Tareas administrativas	0
Salud de la comunidad	0

## Graphs

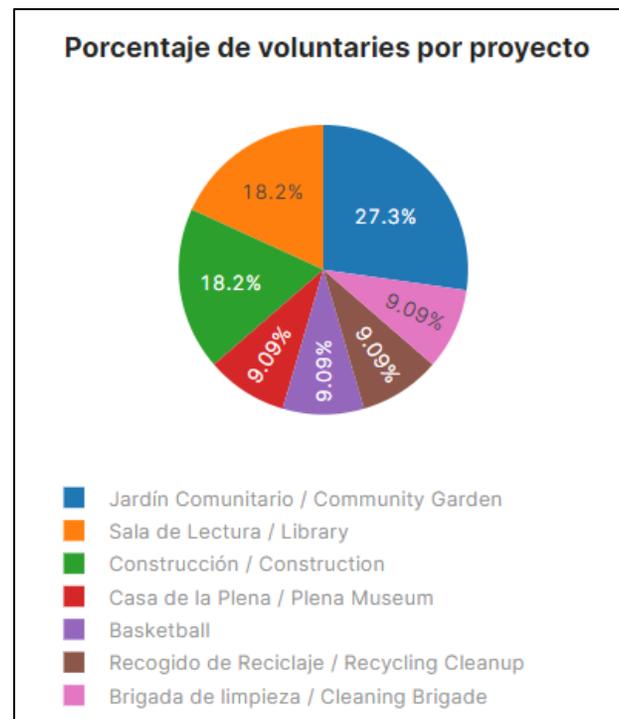
### Monetary Value of Projects

This graph shows the monetary value generated by volunteer efforts for each project based on the number of hours contributed and the monetary value per hour assigned to that project. Monetary value per hour rates are set by project and NGO administrators.



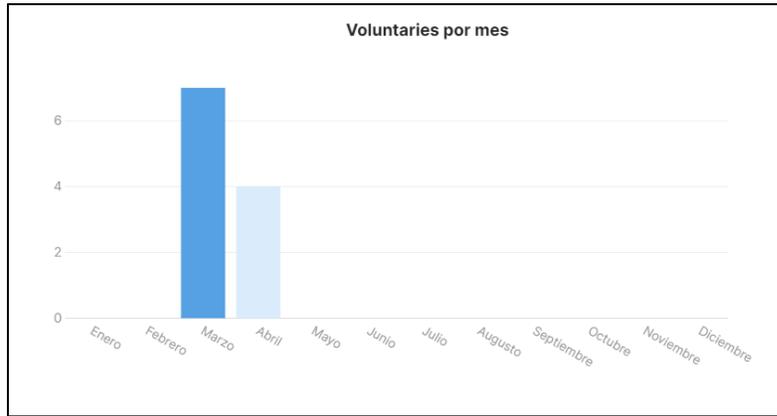
### Percentage of Volunteers per Project

This graph shows a project-by-project breakdown of which projects attracted the greatest number of individual volunteers.



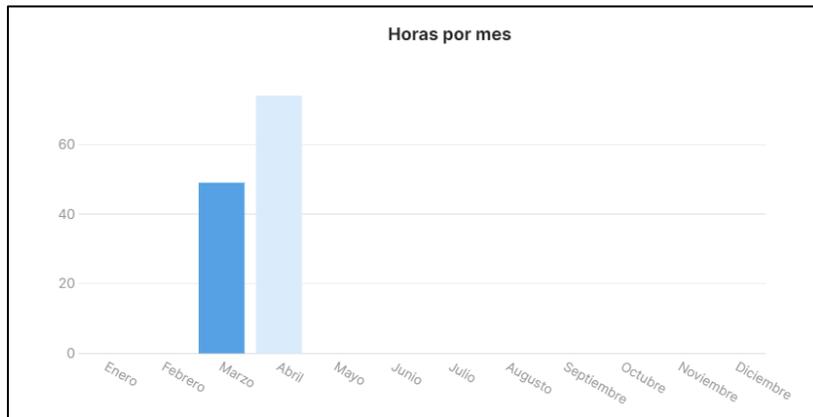
## Volunteers per Month

This graph shows the number of volunteers per month across all projects.



## Hours per Month

This graph shows the number of volunteer hours per month across all projects.



## Adding a Component

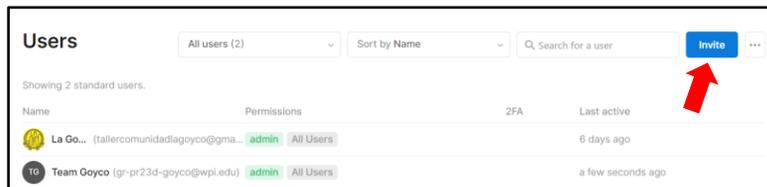
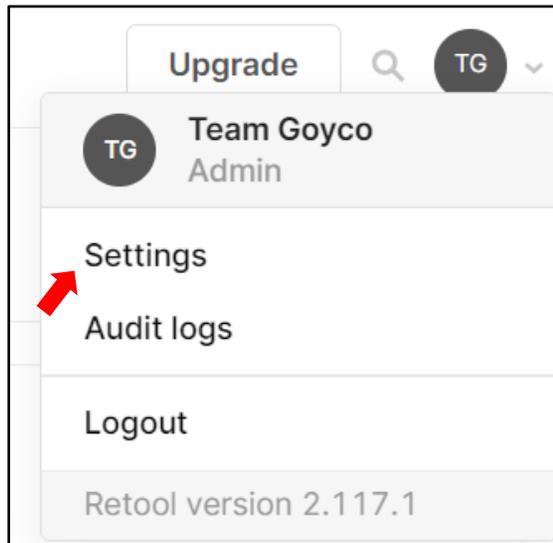
To modify the Retool application, you must have edit access, which depends on your Retool plan. Figure 3 shows four payment plans and services associated with each plan (as of 2023).

Plan	Price	Key Features
<b>Free</b> NEW Everything developers and small teams need to build full stack apps	\$0 for up to 5 users per month	<ul style="list-style-type: none"><li>Build unlimited web and mobile apps</li><li>Write and execute unlimited workflows</li><li>Connect apps to any database or API</li><li>Store up to 5GB in a hosted PostgreSQL database</li><li>100+ production-ready UI components</li><li>Save, share, and reuse unlimited queries with the Retool Query Library</li><li>Use custom React components</li></ul>
<b>Team</b> For teams that need more control and collaboration features	\$10 per user per month	<ul style="list-style-type: none"><li>Add unlimited users</li><li>Configure Staging and Production environments for your resources</li><li>Create and manage releases for your apps</li><li>Revert to any previous version of an app with version history</li></ul>
<b>Business</b> For businesses managing internal tooling across teams	\$50 per user per month	<ul style="list-style-type: none"><li>Unlimited development environments</li><li>Custom permission groups for granular control over app access</li><li>Built-in audit logs to track queries and user events</li><li>Unlimited modules (reusable groups of components and queries)</li><li>Add mobile-only access for \$10 per user per month</li></ul>
<b>Enterprise</b> For organizations with advanced security, control, and support needs	Flexible pricing for your business	<ul style="list-style-type: none"><li>Custom permission groups for granular control over app access</li><li>Built-in audit logs to track queries and user events</li><li>Integrate with Okta, Active Directory, or any other SAML or OpenID SSO provider</li><li>Sync user groups between your IdP and Retool</li><li>Git-based source control</li><li>Spin up multiple instances as needed to mirror your SDLC</li><li>Add custom branding to app navigation and headers</li><li>Develop custom integrations with a Retool engineer</li><li>Build, troubleshoot, and plan with dedicated support</li></ul>

Figure 3

## Adding New Users

Only users with administrator access can add a new user to the Retool dashboard. To add a new user, navigate to the “Users” page by clicking on your initials in the top right and selecting “Settings,” then click the blue “Invite” button on the top right of the “Users” tab.



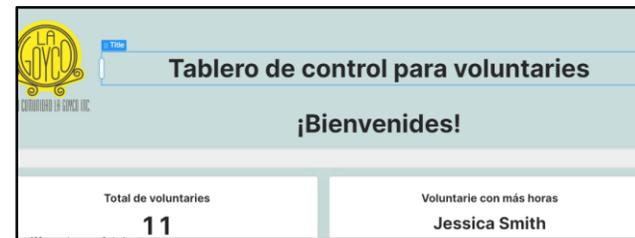
## Adding a New Component

Once you have been added you will be able to edit components on the Retool dashboard.

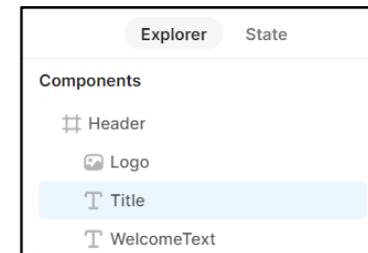
There are a few different sections you will see on the editor page:

- 1) Canvas
- 2) Left Panel
- 3) Right Panel
- 4) Query Panel

The Canvas shows what the dashboard will look like, and this is where you will arrange all the components:

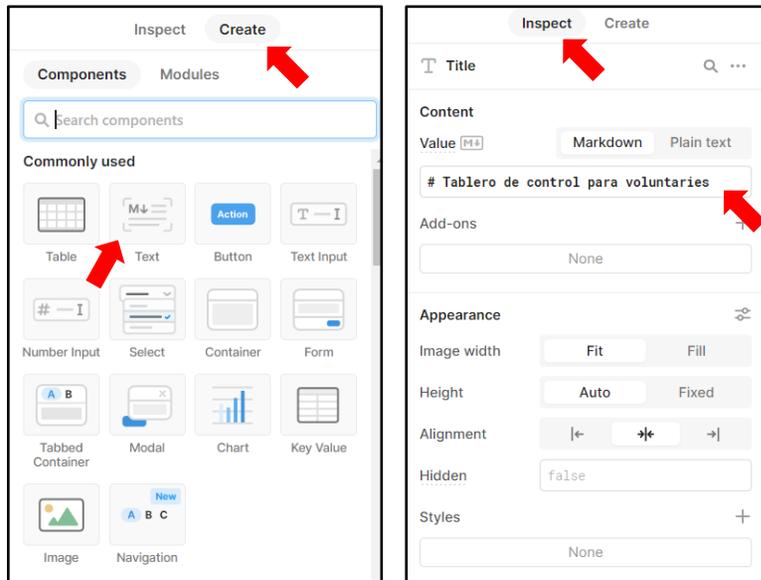


The Left Panel shows a list of all components on the page, including text, images, graphs, and tables:

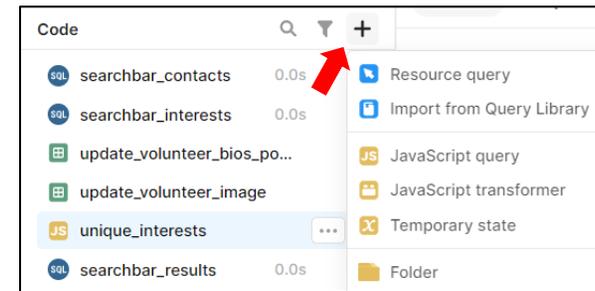


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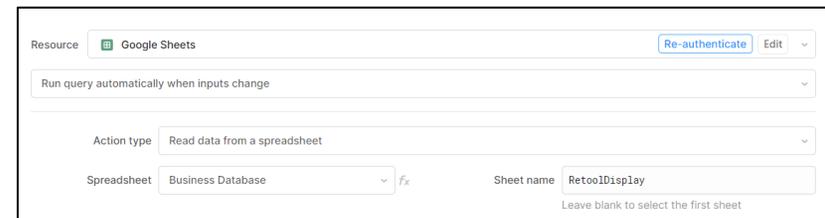
The Right Panel is where you will drag new components from (to be placed on the Canvas) as well as edit all components. For instance, you can click “Create” on the Right Panel to drag “Text” onto a spot on your Canvas, then click on “Inspect” to edit the text that appears on your dashboard.



The Query Panel is where you can edit the data that comes into Retool from Google Sheets. One scenario where you may want to edit the Query Panel is to connect a new Google Sheet to your dashboard. To do this, you will click the “+” on the bottom left of the dashboard, select “Resource query,” and select “Google Sheets” as your “Resource” – Google will prompt you through connecting Retool to your Google Sheet.



Once connected, you will enter the name of your new data source in the “Spreadsheet” field, and the name of the tab within your data source as the “Sheet name.”



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Altogether, the Retool dashboard will look like the following:

1. Canvas (top-middle)
2. Left Panel
3. Right Panel
4. Query Panel (bottom-middle)



Additional resources to edit the Retool dashboard and its components, including how to add new graphs, charts, and tables, are available here on Retool University (<https://docs.retool.com/docs/retool-university>) as well as within the External Resources chapter of this document.

## External Resources

The following resources are helpful for anyone wanting to dive deeper into Retool. Retool allows for many different types of data to be displayed and different ways to manipulate and visualize data.

General Retool Documentation -- <https://docs.retool.com/docs>

Retool Query Documentation -- <https://docs.retool.com/docs/query-library>

How to use JavaScript with Retool -- <https://docs.retool.com/docs/javascript-overview>

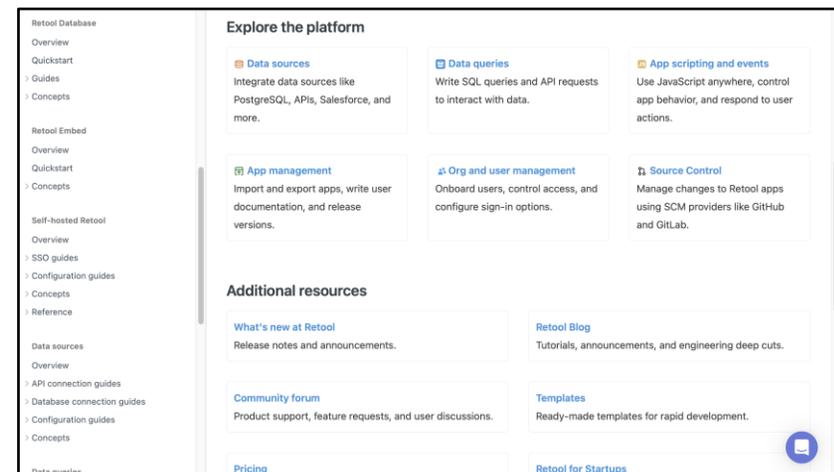
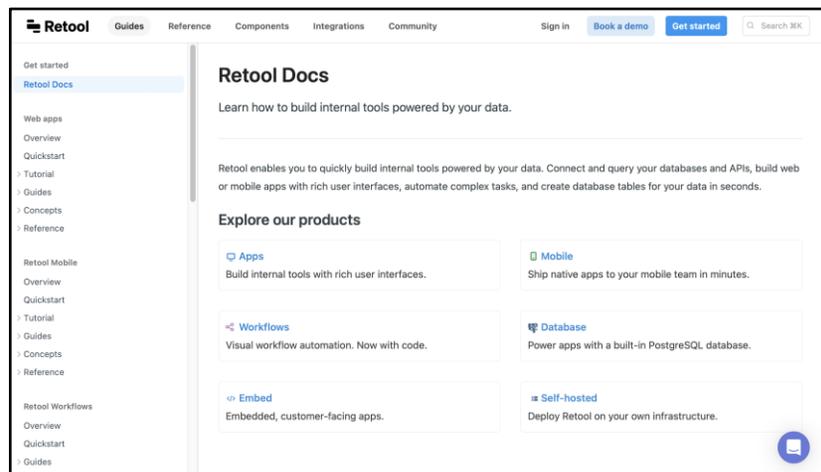
How to use SQL in Retool -- <https://docs.retool.com/docs/sql-in-retool>

Retool University -- <https://docs.retool.com/docs/retool-university>

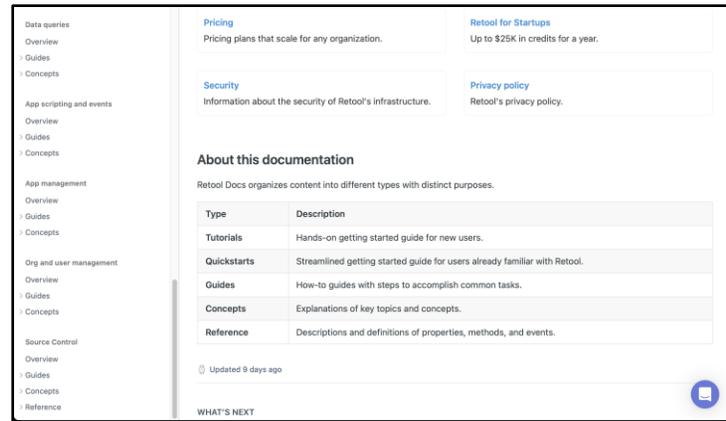
Markdown Basics -- <https://www.markdownguide.org/basic-syntax/>

JavaScript Tutorial -- <https://www.w3schools.com/js/>

SQL Tutorial -- <https://www.w3schools.com/sql/>



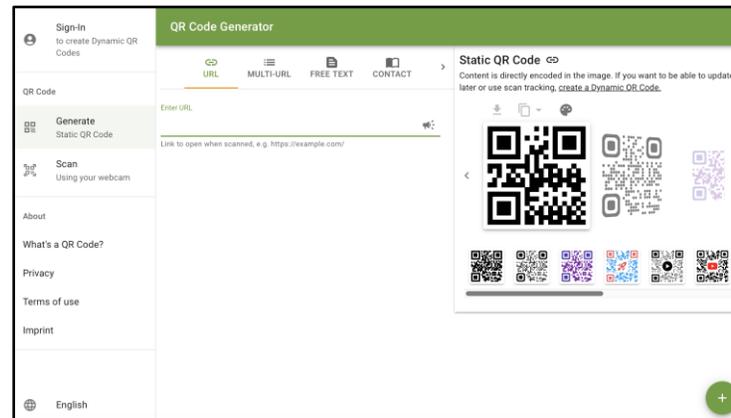
## Volunteer Management Systems for Non-Profits: A User Guide to Google Forms, Google Sheets, and Retool



The following resources are helpful for generating free QR codes that do not expire.

**Web Address:** <https://www.the-qr-code-generator.com>

**Site Name:** QR Code Generator



We found this website to be the most viable option for generating QR codes when compared to other free QR code generators. QR Code Generator stands out because the QR codes do not have an expiration date. Some free QR code generators we investigated had a set period the QR code would be accessible for until it was of no further use.