Solution Challenge

Google Developer Student Clubs

Info Session Presentation

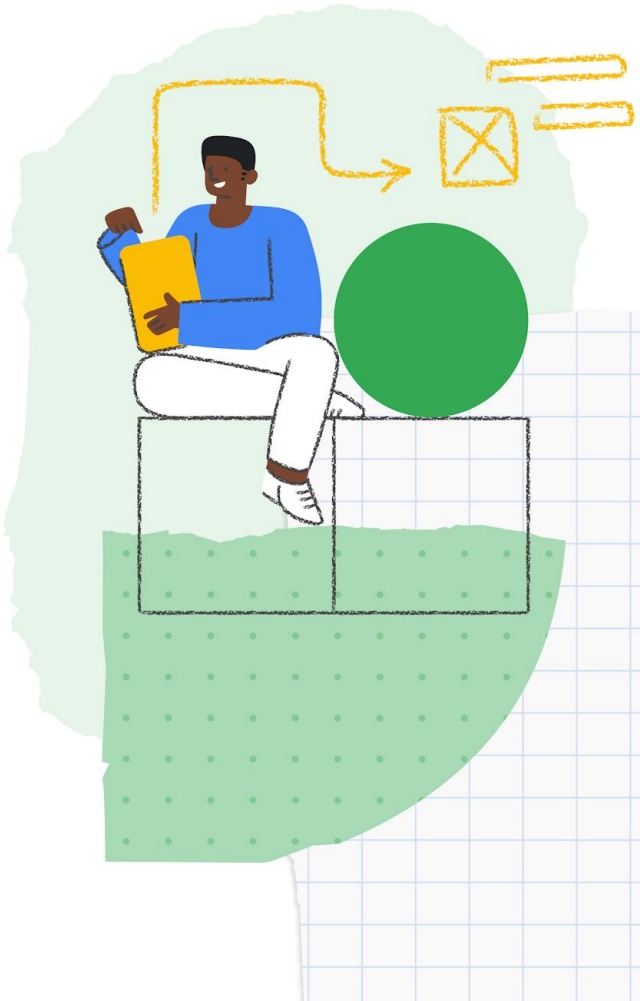


Table of contents

The hardest part is getting started.

What if?

There were no limits to your ideas?
Technological constraints didn't exist?
You could have an impact with just the resources available to you?

Advice from winners

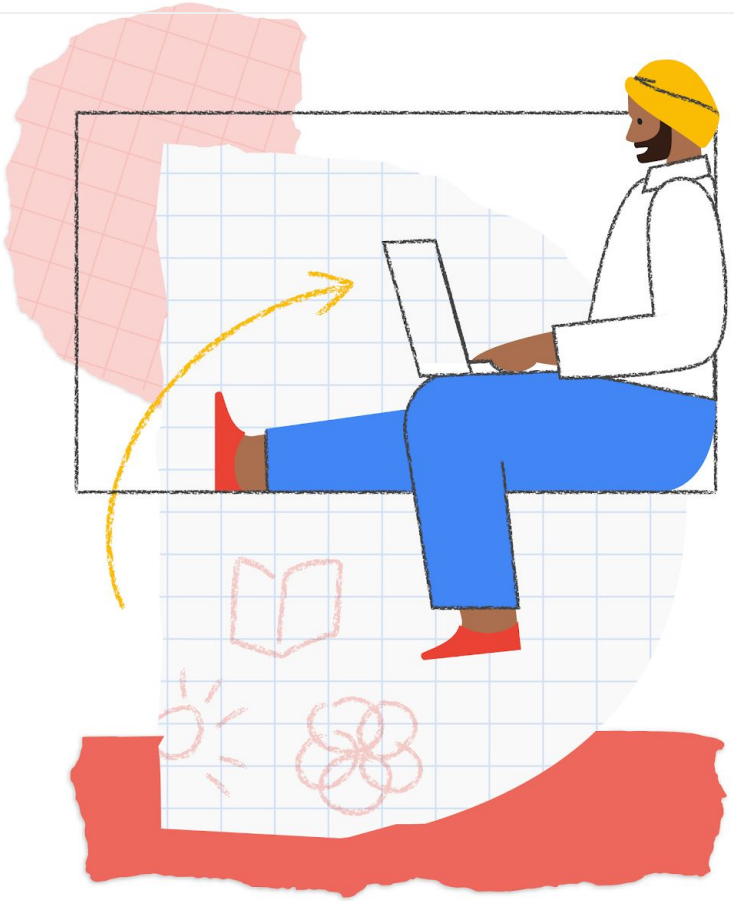
Just start moving in a direction, you'll learn along the way (don't over plan!).
You don't have to solve the world's problems, just one that's meaningful to you.
You don't need the perfectly technical team, just a group that's inspired and dedicated.

Overview

The Google Developer Student Clubs 2023 Solution Challenge mission is to solve for one of the United Nations' 17 Sustainable Development Goals using Google technology.

Created by the United Nations in 2015 to be achieved by 2030, the 17 Sustainable Development Goals (SDGs) agreed upon by all 193 United Nations Member States aim to end poverty, ensure prosperity, and protect the planet.

We invite Leads to join the competition and/or host workshops to help their club members participate.



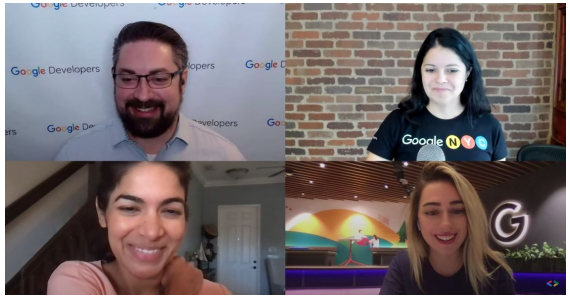
Solution Challenge Program Timeline

Solution Challenge 2023 Kickoff Event

RSVP to the 2023 Solution Challenge Kickoff Event!

When: Wednesday, January 18, 2023
Where: GDSC Event Platform
Agenda: More details coming soon!

RSVP here



Prizes

All participants receive a Google Developers digital profile badge and an official certificate.

Top 100 teams

Receive customized mentorship from Googlers and experts to take solutions to the next level, a branded T-shirt, and a certificate.

Top 10 finalists

Receive additional mentorship, a swag box, and the opportunity to showcase solutions to Googlers and developers all around the world at Demo Day live on YouTube.

Leads from top 10 receive swag box!

Contest Finalists

In addition to the swag box, each individual from the additional seven recognized teams will receive a Cash Prize per student.

Winnings for each qualifying team will not exceed $4,000.

Top 3 winners

In addition to the swag box, each individual from the top 3 winning teams will receive a Cash Prize and a feature on the Google Developers Blog.

Winnings for each qualifying team will not exceed $12,000.

Judging: Criteria for Judges

A panel of judges from Google will use the following criteria to evaluate and score all submissions.

IMPACT - 25 POINTS

1. Does the entry establish a clear challenge using their **problem statement**? *(5 POINTS)*
2. Do they explain clearly which UN Sustainable Development **goals and targets** they chose for their solution and why? *(5 POINTS)*
3. Feedback from users, testing & iteration *(5 POINTS)*
    a. Does the team clearly describe three **feedback points they received from real users** and the steps they took to test them?
    b. Is there evidence of what the team learned and **how the solution was iterated upon** based on user feedback?
4. Does the **solution address the challenge** (and problem statement) identified by the team? Does the team adequately **describe the success of their solution** using metrics, goals, and outcomes, or through cause and effect? *(5 POINTS)*
5. Is there evidence of next steps? Does the team display a clear **plan for future extension to a larger audience** if they were to continue? *(5 POINTS)*

TECHNOLOGY - 25 POINTS

1. Does the team clearly describe the following: **architecture**, high-level **components**, responsibility of each component, **specific products and platform they implemented**? Has the team clearly explained **what Google technology they used and why**? *(5 POINTS)*
2. Does the solution **implement all the technical components** needed to solve the challenge? *(5 POINTS)*
3. Code testing and iteration *(5 POINTS)*
    a. Does the team highlight **one challenge they faced while building their code**, how they **addressed the issue**, and the **technical decisions and implementations** they had to make? Did the team **include guidance on running their code**?
4. Does the video demonstration show an **actual working application** (not a mockup) and **how a user will interact with the solution**? Does the demo show how the solution **makes effective and appropriate use of the features** of the chosen Google technology or platform? *(5 POINTS)*
5. Can the solution, in its current form or minor structural changes, **support more users and increased scale**? *(5 POINTS)*

Submitting a Solution: Submission Criteria

These are the questions on the submission form that you will be asked to provide responses for.

PROJECT SETUP

1. Please clearly describe the challenge you are solving for using a problem statement.
(5 POINTS)

2. What United Nations' Sustainable Development goal(s) AND target(s) did you choose for your solution? What inspired you to select these specific goal(s) AND target(s)?
(5 POINTS)

IMPLEMENTATION

3. Describe the architecture that your team chose for your solution. What are the high-level components of your architecture? What is the responsibility of each component?
(5 POINTS)

4. Which specific products and platforms did you choose to implement these components and why?
(5 POINTS)

FEEDBACK / TESTING / ITERATION

5. Feedback from users, testing, & iteration
- Walk us through the steps you took to test your solution with real users (outside of your team). Provide three specific feedback points you received from real users.
- What did you learn and how did it help improve your solution? What are three specific things you implemented and improved for your solution based on the feedback from users?
(5 POINTS)

6. Code testing and iteration
- Highlight one challenge you faced while building your code, including detail on how you addressed the issue and the technical decisions and implementations you had to make.
(5 POINTS)

SUCCESS AND COMPLETION OF SOLUTION

7. How does your solution address the challenge you are looking to solve for? Describe the success of your solution using metrics, goals, and outcomes. What Google technologies are you using to track usage analytics? Using relevant (or meaningful) statistics, concrete data or numerical examples where possible. Or, where numbers aren't possible to use, please describe your project's impact using cause and effect.
(5 POINTS)

8. Upload a copy of your demo video. Make sure the video demonstrates a working application and how a user will interact with the solution. Make sure the video also makes effective use of the chosen Google products. Feel free to include infographics or visual representation of the data in your demo video.
(5 POINTS)

SCALABILITY / NEXT STEPS

9. What do you see as the future / next steps for your project? How would you expand your solution to reach a larger audience?
(5 POINTS)

10. Explain how the technical architecture of your solution could support (in its current state or with minor changes) scaling to a larger audience.
(5 POINTS)

Submitting a Solution: Creating a Problem Statement

It's important to start with creating an effective problem statement.

A good problem statement:

- Presents an opportunity of some **significance**, **urgency**, and priority
- Relates in the **simplest terms possible**, the process of concern and **impact on the community**
- Includes enough data so the audience can understand the **size and scope of the problem**, together with the degree or magnitude of the problem
- Should **not be more than one paragraph** (as little as 2-3 sentences, as much as 5-6 sentences)

How to structure a problem statement

- **Who** is experiencing the problem?
  - What segment/s of the community, how many?
- **What** is the problem?
  - Describe issue being experienced or need going unmet
- **Where/when** is the problem occurring?
  - Context, situation, or process in which the problem exists
- **Why** is it a problem? Why is it important to address?
  - Impact to community, region, businesses, organizations

2023 Timeline Checklist

🤦🏾‍♀️ Getting Started
August - January

- ❑ **Step 1:** Join a Google Developer Student Club (anytime!)
- ❑ **Step 2:** Start hosting info sessions, hackathons, and design days (Dec-Jan)
- ❑ **Step 3:** Form a team (Dec-Jan)
- ❑ **Step 4:** Select United Nations Sustainable Development Goals (Dec-Jan)

🛠️ Design & Build
January - March

- ❑ **Step 5:** Identify a Solution (Jan)
- ❑ **Step 6:** Learn & build (Jan-Feb)
  - ❑ Design the front-end interface
  - ❑ Design the back-end technology
- ❑ **Step 7:** Test your solution (Feb-March)
- ❑ **Step 8:** Iterate (Feb-March)

ɹbmissions & Judging
March - August

- ❑ **Step 9:** Record a demo video and ***submit by March 31st, 2023***
- ❑ **Step 10:** Top 100 solutions announced (May)
- ❑ **Step 11:** Top 100 mentoring (May)
- ❑ **Step 12:** Top 10 finalists announced (June)
- ❑ **Step 13:** Top 3 winners announced live on YouTube (August)
- ❑ **Step 14:** Celebrate all the 2023 Solution Challenge participants!

FAQs

Can my solution solve a problem outside of the scope of the 17 Sustainable Developer Goals?

For Solution Challenge 2023, we **require** your submitted solution to solve for at least one or more of the 17 SDGs. When you have submitted your solution, please review all the 17 SDGs to understand which SDG your solution is focused on and what SDG targets you are looking to solve for.

Can one student or team submit with multiple submissions if they've contributed to both projects?

The Terms and Conditions state "LIMIT ONE (1) ENTRY PER PERSON," so each student can only be a part of one submission.

Can I still participate in the Solution Challenge if there is no Google Developer Student Club at my university?

Yes, as a student you can still participate as long as you team up with **at least one** student at an existing GDSC university. You must join that GDSC community through the GDSC event platform. We recommend you to then reach out to the GDSC lead for guidance on how to join or form a team with their community.

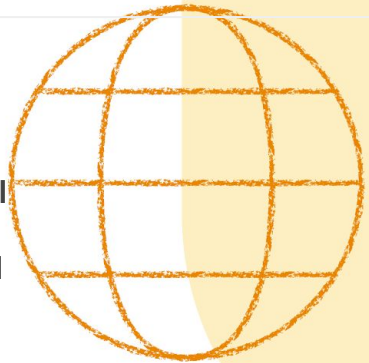
Given the implications of social distancing, our ability to test with users was impacted -- will the judges consider this?

Our judges will surely be mindful of the limitations that have been added by COVID-19. This includes but is not limited to:

- Ability to meet as a team
- Ability to have users test the solution
- Lack of internet access or proper developer environments due to displacement from your college campus.

To read the full list of frequently asked questions head over to the FAQ page at goo.gle/solutionchallenge.

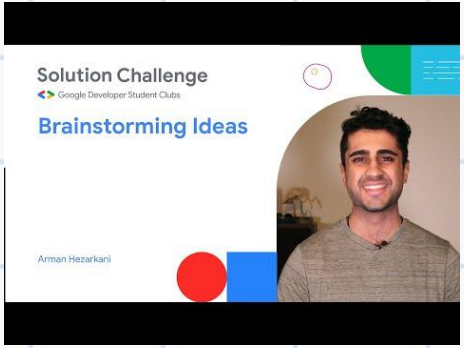
If you have a question that is not answered below, please reach out to your GDSC Lead.



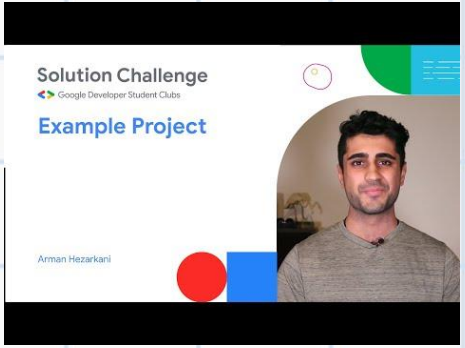
Overview videos

Watch and/or share these detailed “how to” videos for an overview of how to participate in the Solution Challenge.

Calling all Student Developers!



UN 17 Sustainable Development Goals Overview and Ideas



How to Build a Project Walkthrough

Tutorial videos

Watch and/or share the following tutorials to help prepare members from your club for the Solution Challenge.

Identifying a Problem

1

Identifying a Solution

2

Designing the Interface

3

Designing the Technology

4

2022 Solution Challenge winners!

See the playlist & read more about them here

BloodCall - Greece, Harokopio University of Athens

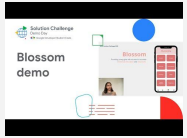
UN Sustainable Goals Addressed: #3: Good Health & Wellbeing

BloodCall aims to make blood donation an easier task for everyone involved by leveraging Android, Firebase, and the Google Maps SDK.

SaveONE life - Kenya, Taita Taveta University

UN Sustainable Goals Addressed: #1: No Poverty, #2: Zero Hunger, #4:Quality Education, #10: Reduced Inequality

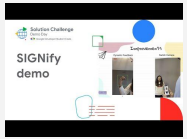
SaveONE life helps donors locate and donate goods to home orphanages in Kenya that are in need of basic items, food, clothing, and other educational resources. It's built with Android, Assistant / Actions on Google, Firebase, Google Cloud Platform, and Google Maps



Blossom - Canada, University of Waterloo

UN Sustainable Goals Addressed: #3: Good Health & Wellbeing, #4: Quality Education, #5: Gender Equality and Women's Empowerment, #10: Reduced Inequalities

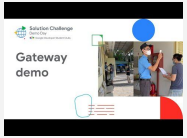
Blossom provides an integrated solution for young girls to get access to accurate and reliable menstrual education and resources and uses Android, Firebase, Flutter, Google Cloud Platform.



SIGNify - Canada, University of Toronto, Mississauga

UN Sustainable Goals Addressed: #10: Reduced Inequalities, #4: Quality Education

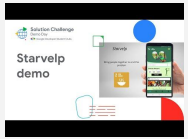
SIGNify provides an interface where deaf and non-deaf people can easily understand sign language through a graphical context. It leverages Android, Firebase, Flutter, Google Cloud Platform, and TensorFlow



Gateway - Vietnam, Hoa Sen University

UN Sustainable Goals Addressed: #3: Good Health & Wellbeing, #11: Sustainable Cities, #17: Partnerships

Gateway creates an open covid-19 digital check-in system. Through an open-source, IoT solution that pairs with an application on a mobile device and communicates with an embedded system over Bluetooth connection protocol. It uses Angular, Firebase, Flutter, Google Cloud Platform, TensorFlow, Progressive Web Apps and connects users with a COVID-19 digital check-in system.



Starvelp - Turkey, İzmir University of Economics

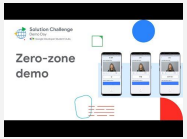
UN Sustainable Goals Addressed: #2: Zero Hunger

Starvelp aims to tackle the problems of food waste and hunger by enabling more ways to share local resources with those in need. It leverages Firebase, Flutter, and Google Cloud Platform.

GetWage - India, G.H. Raisoni College of Engineering, Nagpur

UN Sustainable Goals Addressed: #1: No Poverty, #4: Quality Education, #8: Decent Work & Economic Growth

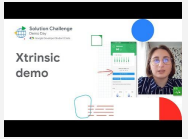
GetWage provides a tool to help those impacted by unemployment and unfilled positions in the local economy find and post daily wage work with ease. It uses Firebase, Flutter, Google Cloud Platform, TensorFlow.



Zero-zone - South Korea, Sookmyung Women's University

UN Sustainable Goals Addressed: #4: Quality Education, #10: Reduced Inequalities

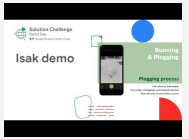
Zero-zone supports active communication for, and with, the hearing impaired and helps individuals with hearing impairments practice lip reading. The tool leverages Android, Assistant / Actions on Google, Flutter, Google Cloud Platform, and TensorFlow.



Xtrinsic - Germany, Faculty of Engineering Albert-Ludwigs-Universität Freiburg

UN Sustainable Goals Addressed: #3: Good Health & Wellbeing

Xtrinsic is an application for mental health research and therapy - it adapts your environment to your personal habits and needs. Using a wearable device and TensorFlow, the team aims to detect and help users get through their struggles throughout the day and at night with behavioral suggestions. It's built using Android, Assistant / Actions on Google, Firebase, Flutter, Google Cloud Platform, TensorFlow, WearOS, DialogFlow, and Google Health Services.



Isak - South Korea, Soonchunhyang University

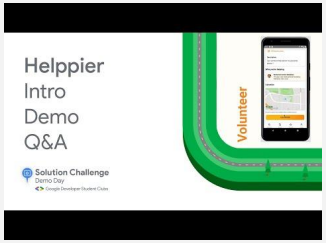
UN Sustainable Goals Addressed: #3: Good Health & Wellbeing, #12: Responsible Consumption & Production

Isak is an application that combines the activity of jogging and trash collection to make picking up trash more impactful. It uses Firebase, Flutter, Google Cloud Platform, TensorFlow.

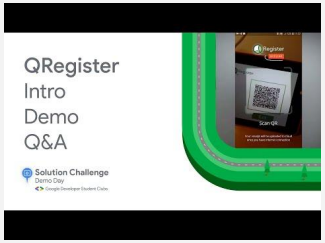
See the 2021 Solution Challenge winners!

Read more about them here.

DementiCare - Singapore
DementiCare is an app equipped with many features to compliment caregiving for Dementia patients such as sending urgent notices, SOS, and creating a patient dashboard.

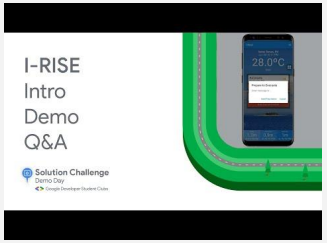


Helppier - Canada
Helppier's goal is to encourage a new social norm of volunteering in people's' daily routines in their local neighbourhoods. The app facilitates neighbours helping neighbours through a gamified volunteering system.

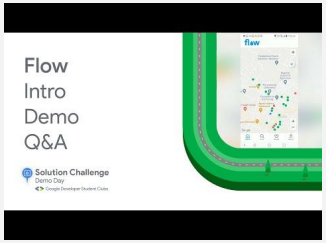


QRegister - Turkey
removes the need of physical paper receipts upon transactions and instead encourages the use of QR codes for users to virtually keep track of all their receipts.

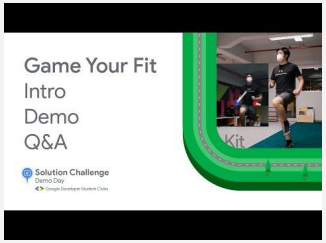
E-Owl - Egypt
is a virtual education platform for professors to be able to create virtual meetings, exams, posts and for students to be able to check their grades and assignments online.



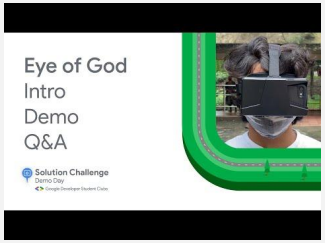
I-RISE - Philippines
(I-RISE) is a disaster risk management system that aims to bridge the information gap between local government units, disaster risk management offices, and the island communities of Tubigon, Bohol.



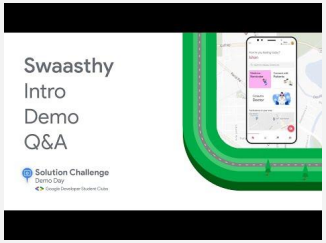
Flow - Cameroon
Flow is a mobile application that helps users easily find clean water sources nearby using Google Maps.



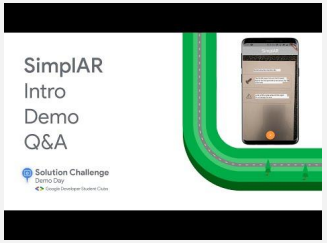
Game Your Fit - Indonesia
Game Your Fit keeps track of your movements in real time using your smartphone's movement sensors to promote exercising by gamifying the whole experience.



Eye of God - India
Eye of God" offers an easy-to-use navigation system for visually impaired people, acting as their "virtual-cane" to help them navigate to their destination all by themselves without needing the assistance of other people.



Swaasthy - India
Swaasthy is an app made to uplift user's health. It contains everything from medicine reminder functionality to make an SOS call to nearby ambulances to getting an appointment with a virtual doc.



SimplAR - Germany
SimplAR assists affected people by leveraging the power of Natural Language Processing: the user can take a picture of any text, which is then simplified into an understandable version, following the Plain Language guidelines.

What past participants said

Android

“Developing an Android app from Android Studio is so easy and enjoyable. Android Studio's new features, including Flash Run and ConstraintLayout, help us to build our app faster, easier, and better. We develop our app with the aid of Google's CodeLabs, which are so useful and easy to follow.”

Flutter

“Flutter helped us to become more productive. It helped me to build these apps with less code, and less worrying about the basic features. The Hot Reload features saved a lot of my time.”

Google Cloud Platform

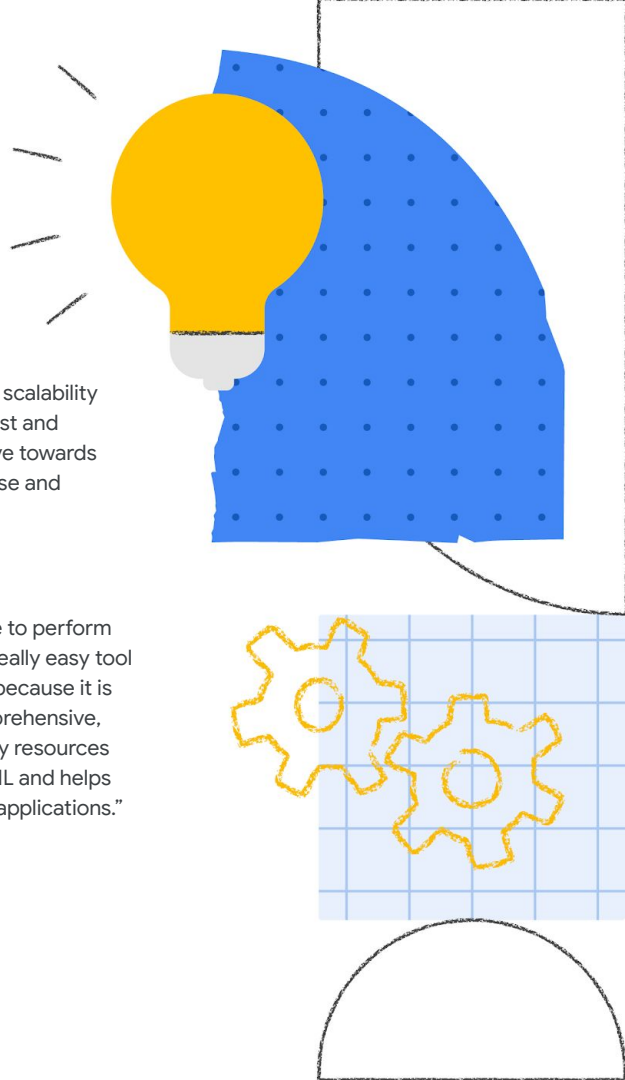
“GCP allows the apps to be 100% deployable on the cloud. With that vast features available and readily available integration of machine learning online, GCP allows us to be ready for every stage of deployment, ultimately worldwide deployment at multiple regions in multiple countries.”

Firebase

“I loved Firebase more because of its easiness and scalability and the approaches that we can do. It's smooth, fast and amazing. It made me say goodbye to SQL and move towards the NOSQL database as it's more robust, easy to use and powerful.”

TensorFlow

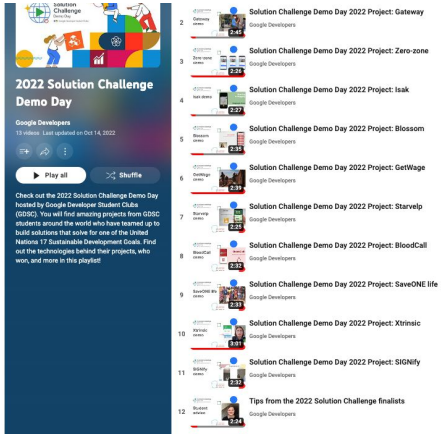
“TensorFlow is one of the open source tools we use to perform supervised learning for detection. TensorFlow is a really easy tool to use to get started. We chose to use TensorFlow because it is easy to build neural networks using it. It has a comprehensive, flexible ecosystem of tools, libraries and community resources that lets researchers push the state-of-the-art in ML and helps developers to easily build and deploy ML powered applications.”



2022 Solution Challenge Demo Day

The 2022 Solution Challenge Demo Day hosted live on YouTube on July 28, 2022 showcased the top 10 winners and their solutions. Google product experts and viewers asked the teams questions to learn more about their projects. Watch to get inspired!

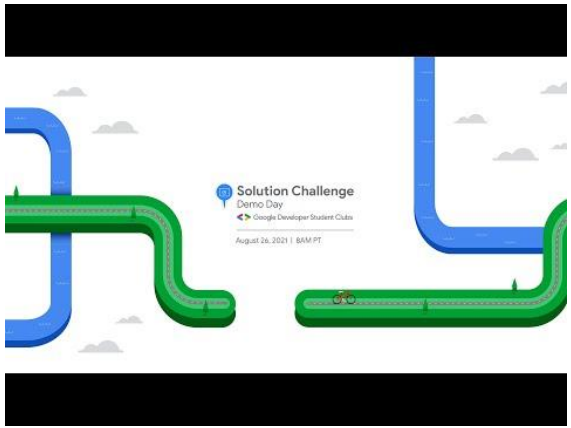
[2022 Demo Day]



[2022 Demo Day Playlist]

2021 Solution Challenge Demo Day

The 2021 Solution Challenge Demo Day hosted live on YouTube on August 26, 2021 showcased the top 10 winners and their solutions. Google product experts and viewers asked the teams questions to learn more about their projects. Watch to get inspired!



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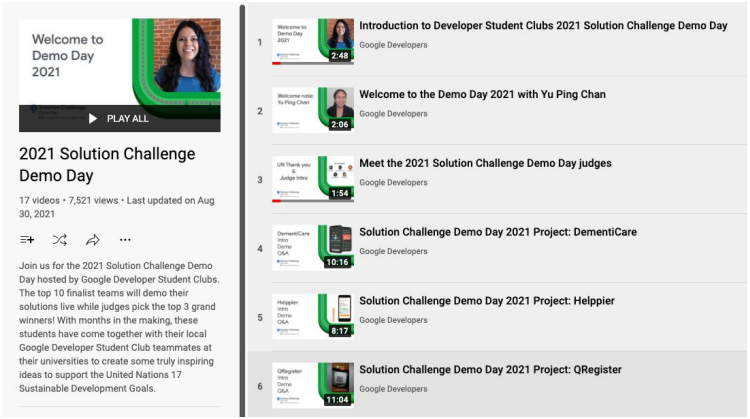

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Solution Challenge

Google Developer Student Clubs

We can’t wait to see what you build!

goo.gle/solutionchallenge-infosession