

# 2021 CGI I.T. Girl Challenge

## Challenge Guide



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## Program Overview

### A Brief History

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CGI I.T. Girl Challenge is a mobile app challenge for high school girls. Small teams partner with CGI mentors to develop a smart-phone app utilizing a mobile app building platform. Each team will present their mobile app to a panel of judges. The team with the most innovative, applicable and creative mobile app design will receive college scholarship funds.

The challenge originated at one of CGI's Innovation Centers in Pittsburgh. Thanks to CGI's Dream Connectors program, it has now become an annual event in Pittsburgh and has plans to expand across the U.S.

The CGI I.T. Girl Challenge is one of our mentorship programs of STEM@CGI, a nationwide K-12 program that aims to train and mentor young people for STEM careers. It strives to provide experiences that inspire students with the drive to learn for a bright future in the digital workforce.

### STEM@CGI

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STEM@CGI exists to introduce, inspire and mentor students to help increase diversity in the IT industry. The program focuses on groups underrepresented in STEM including students who are female, Black, Latino, Indigenous, have disabilities and/or are economically underserved.

### This Year's Challenge in Pittsburgh

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For the 2021 CGI I.T. Girl Challenge, we are approaching the virtual model head-on. The Challenge will be comprised of 20 CGI-led Mentor hours spread over an 11 week period. The division of these hours into separate mentor sessions is left to the discretion of the teams. These sessions will take place over Microsoft Teams, provided (and managed) by CGI mentors. The award for the winning team will be a \$20,000 scholarship split between members of the winning team.

### Key Dates

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The below dates are the most critical for participating in the CGI I.T. Girl Challenge:

- Team application due: **Monday, February 08, 2021 at 11:59:59 p.m. EST**
- Team assignments: **Tuesday, February 09, 2021**
- Kickoff week: **Monday, February 15, 2021**
- Photo Release Forms: **Monday, March 01, 2021 at 11:59:59 p.m. EST**
- Final submission: **Friday, April 30, 2021 at 11:59:59 p.m. EST**
- Day of Challenge: **Friday, May 21, 2021**

## The Teams

There are numerous components that go into the CGI I.T. Girl Challenge. We outline some of the, arguably, most significant portions below

### Gender-Identity Inclusivity Statement

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The CGI I.T. Girl Challenge does not discriminate based on identification assignment at birth. Our goal is to increase the number of girls and other underrepresented groups pursuing STEM career fields. In CGI's pursuit of a STEM-focused female learning environment, we proudly accept female-identifying, non-binary, and gender nonconforming participants.

### Structure

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Teams will consist of the following members

- 2-4 students
- 1 Team Sponsor
- 1+ CGI Mentor(s)
  - › Backgrounds of CGI Mentors will vary
  - › CGI Mentors may rotate across teams, such as those from Human Centered Design
- 1+ University Mentor

### Expectations

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The CGI I.T. Girl Challenge holds all members to the highest of expectations. Overall, we fully expect our Participants and Mentors to “lead by example” and be their best selves during mentor sessions. Overall, we expect:

- Each member is to **attend every Mentor Session**
- All Team Members to treat one another with respect and dignity
- Everyone to contribute to an inclusive, safe, and comfortable environment
  - › This includes the intentional, practiced use of preferred pronouns
- Participants to actively contribute to the *Final Submission*
  - › It is required that each Participant's contributions be evident in the *Final Submission*

## Topics of Mentoring Sessions

Mentors will leverage their industry experience and knowledge of best practices while guiding Participants to the **Day of Challenge**. The CGI I.T. Girl Challenge provides a set of topics with which a team should be able to produce a Final Submission. The Challenge does not impose an order in which topics should be covered.

### Story Boarding

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In the beginning, teams are going to be flooded with ideas. Mentors should aim to help students determine the essence of what they want to work on or a problem they want to solve. Focus on defining achievable targets considering the Final Submission.

### Building Software

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Teams are going to familiarize themselves with the complex act of developing software. Successful mastery of the topics therein are invaluable to success in STEM-environments. The process can be broken down over a series of steps, which, in general, define:

- Every feature of the software
- A design for the software
- The plan against which the software will be built and tested

### Features

A feature is the general name for “something software users can do”. As such, one can then define software as “a collection of features used to complete a specific task”. Mobile apps are nothing but a special type of software representing a modern way to solve modern problems.

After Teams agree upon the features they want to build, they will need to prioritize them. Through prioritization, Teams will then select the features without which their software cannot exist. The final set of features will define a team’s Minimum Viable Product, or MVP. Features excluded from this set are considered “Out of Scope”.

### Minimum Viable Product - MVP

Teams will attempt to hone the scope of their efforts and attempt to build the most basic interpretation of their objective. They will determine, for any feature they envision, just how necessary it will be for the Final Submission.

### Definition

All of the “Features” without which the goal of the software is not met and the Team’s problem(s) remains unsolved.

### Nice-To-Haves

Any feature that may not be absolutely essential for solving the problem(s) chosen by the Team.

### 3<sup>rd</sup> Party Features

Sometimes a feature will be dependent upon capabilities outside of a Team. For such times, “3<sup>rd</sup> Party Features” are often introduced. Should Teams decide to integrate “3<sup>rd</sup> Party Features”, such as Facebook Login or Google Maps, Mentors are required to open accounts and manage credentials. Credentials should be unique and **not personal accounts**.

It is reasonably acceptable to consider full-integration of “3<sup>rd</sup> Party Features” as “Out of Scope”. Consider mocking out such implementations.

### Design

Design tends to make or break the appeal of any software. Concepts that are poorly implemented or difficult to use tends to turn off users as well. Through thoughtful design, Teams will consider:

- Themes and Color Pallets
  - › Considering contrast and coordination
- User Interface and Experience
  - › Consistent look and feel
  - › Feature flows
  - › Usability

### Plan

Organizing and orchestrating the process of building software is a momentous task. No matter how meticulous one is, it is impossible to foresee or plan against every potential issue. Teams should start from an “ideal state” and define necessary steps they will take to get there from “current state”. It would be beneficial for Teams to break up tasks across Participants setting benchmarks to measure progress.

### Build

During active development, all Team Members will face new challenges and opportunities to grow STEM-based skills.

### Tools

The CGI I.T. Girl Challenge is platform-agnostic. Teams may submit any tool they choose to use, as long as the following features are available (at no cost):

- Drag-and-Drop interface with no coding requirements
  - › Participants are NOT required to author original source code outside of interactive web apps
- Able to run in the browser only
  - › No IDE or Desktop App component
  - › No Android Studio; No Xcode
- Companion app to run project on real devices
  - › Should NOT require connecting mobile device to computer via cables

[Thunkable](#) and [MIT App Inventor](#) are two excellent tools for Teams in the Challenge. Teams will need to denote the tool on their Submission File. As with all credential management, Mentors are expected to maintain full account access, especially with respects to MFA functionality.

### Development Management Techniques

Managing concurrent editing can be difficult. Teams will need to work through issues as they arise. The Challenge encourages responsibilities be divided across Participants such that each Participant is presented with an opportunity to contribute to all components of the Final Submission.

### Test

After a development team finishes a feature, they engage a particular set of peers tasked with meticulously verifying how well a feature was finished. This practice is called Quality Assurance and it is the procedure through which changes in

software are put under rigorous stress to identify and resolve issues. Changes that make it through QA are normally labeled “Done”. Teams will need to implement strategies through which the same goals can be attempted and achieved.

### **Determine Success with a Definition of “Done”**

It is imperative for a Team to agree when a feature is completed correctly. The definition of “Done” directly determines MVP eligibility. This, in turn, defines what goes into the Final Submission.

For example, a Team of 2 Participants can define “Done” as a feature built by 1 Participant and verified by the other, allowing them to sign off on each change.

### **How to Pitch**

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Ideas are only as effective as how they are expressed to peers. Teams will focus on skills with which they will sharpen the focus of their Final Submission. What is left out of a conversation is just as important as what is included.

### **Final Submission**

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The overall topic for Mentoring Sessions is the Final Submission. All efforts over the course of the CGI I.T. Girl Challenge are focused on creating the best Final Submission possible.

### **Scope**

Participants need to ensure they are including the required content in the Final Submission while balancing strong presence in all of the categories outlined in the Scoring Rubric.

### **Content Revision**

Teams must ensure the Final Submission is free of inappropriate content and meets the minimum requirements for judging. Reviews should be “public” in which critiques are turned into moments of expanded understanding.

## The Final Submission

The Final Submission is the culmination of all of the work completed over the CGI I.T. Girl Challenge. The expectation is for each team to deliver the outlined contents under CGI/University Partner mentorship and Team Sponsor supervision.

### Contents

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The Final Submission will consist of a **3-5 Minute Video, Questionnaire, and Submission File**. To support a flexible Final Submission there is no file format requirement. Mentors and Team Sponsors will coordinate around producing the final collection of files and submission through Microsoft Teams.

#### 3-5 Minute Video

Contents of the video must include (in any order):

- Names of
  - › The team
  - › The Participants
  - › The application
- Problem statement and proposed solution
  - › Describe exactly how the app solves the problem
  - › Explain the target audience
- Chronicle of the development experience
  - › Greatest obstacle
  - › Least/Most favorite parts
  - › Anything worth telling
- Application Demo
  - › Show and explain how the app works
  - › Explain tools used for development
- Clear and Identifiable contributions by each Participant
  - › Narration
  - › Demo walk through
  - › Although **strongly encouraged**, Participants do not need to be visible on camera
  - › Film Production (Directing, Editing, Filmography, Camera Operator, etc...)

#### Questionnaire

Written answers to the following questions must be provided

- What is the title of your app?
- What's the app's purpose? (one sentence)
- What was the app's inspiration? (short description)
- What is your app trying to accomplish? (short description)
- What technical/coding difficulty did you face in programming your app and how did you address the difficulty? (short description)

### Submission File

Provide a single PDF containing the following:

- Login credentials to tool(s) used to build application
- Team Registry (Participant names, team name, app name, Sponsor/School name, etc...)

### Judges

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Every Final Submission will be reviewed by a panel of judges. Judges in the CGI I.T. Girl Challenge are sourced from our Community Partners and CGI. They have a range of backgrounds and expertise, lending to a fair review of all submissions. To minimize bias, identifying details are anonymized as much as possible.

### Scoring

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Scores are broken up over 4 **Categories**, each of which is assigned a **Weight** and a **Tie-Breaker Rank**. Judges will provide a score of **1 (low) to 5 (high)** in each Category. The Team with the highest Final Score is declared the winner.

### Categories

Final Submission entries are to be judged across the following 4 categories

#### Goal

Judges will attempt to score how well a Final Submission meets its own goal. Metrics for this include:

- How well the problem is described
- Is the effect on target audience demonstrated
- Is the solution clear

#### Execution

Judges will attempt to score how well a Final Submission is executed. Metrics for this include:

- How well the problem is solved
  - › How complete is the solution
- Is the UI/UX intuitive? Easy-to-use?
  - › Which advanced features of the platform were utilized? To what extent?
- Is the demonstration that of an MVP?
  - › How much, if any, is left to do between the presented project and a “complete MVP”?

#### Innovation

Judges will attempt to score how innovative a Final Submission is. Metrics for this include:

- How unique of a solution is demonstrated
- How creative are the video and/or demonstrated app
- Is that which is presented something desirable to use

#### Presentation

Judges will score the overall presentation of a Final Submission. Metrics for this include:

- How well articulated is the mission [statement]
- Is it easy to verify contributions of all Participants are included
  - › Was this a team effort

### Weights

Each of the 4 **Categories** are assigned a **Weight** according to the table below.

Goal	Execution	Innovation	Presentation
35%	40%	15%	10%

### Tie-Breaker Ranks

In the case that two (or more) teams tie, we will use the following **Tie-Breaker Ranks** to determine the winner. Team **Category** scores will be compared by **Tie-Breaker Rank** with the highest score in the highest rank being the winner.

Innovation	Execution	Goal	Presentation
1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>

### Calculating the Final Score

The CGI I.T. Girl Challenge Leadership Team Co-Leads will be responsible for compiling Final Scores and determining the winning Team. Scores will be calculated in the following manner:

1. Scores from each judge will be combined by **Category**
2. Each **Category Total** will be multiplied by the associated **Weight**
3. The **Final Score** will be the *sum* of each **Weighted Category Total**

## Day of Challenge

The **Day of Challenge** is the closing ceremony of the CGI I.T. Girl Challenge and is scheduled for **Friday May 21, 2021**. Hosted by the CGI I.T. Girl Challenge Leadership Team over Microsoft Teams, the **Day of Challenge** is all about the Teams that make up the Challenge. We will share Final Submission components and information about our Participants and Mentors.

As with Mentor Sessions, attendance is required for participants. Mentors and Team Sponsors are strongly encouraged to attend as well. The CGI I.T. Girl Challenge Leadership Team welcomes friends, families and supporters alike to join one another (safely) and us for the event.

### The Prize

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Each team is competing for a one-time \$20,000.00 scholarship, provided by CGI and distributed by Steel City Codes. The prize will be divided evenly across all team members.

## Contact Information

Below are some key contacts across CGI and our community partners. It is strongly encouraged to direct any question to the [CGI I.T. Girl Challenge Leadership Team Co-Leads](#). For more specific questions, we provide a breakdown of key partners and points-of-contact.

### CGI IT Girl Challenge - Pittsburgh

For questions specific to the 2021 CGI I.T. Girl Challenge hosted by CGI Great Lakes Business Unit in Pittsburgh, please contact

- [Franco Colaizzi](#) | Co-Lead of CGI I.T. Girl Challenge - Pittsburgh
- [Staceylyn Machi](#) | Co-Lead of CGI I.T. Girl Challenge - Pittsburgh

### Community partners

For questions best answered by our community partners, please contact

#### Pittsburgh Public Schools

- [Franco Colaizzi](#) | CGI representative to Pittsburgh Public Schools

#### New Outlook Academy

- [Franco Colaizzi](#) | CGI representative to New Outlook Academy

#### Best of the Batch Foundation

- [Elizabeth Bujak](#) | CGI representative to Best of the Batch Foundation

#### University of Pittsburgh

- [Heather Fusko](#) | CGI I.T. Girl Challenge University Partner representative