



AcademiesHacks 2024

Theme: (will be revealed day of)

May 18, 2024 from 8:45 AM to 7:30 PM

May 19, 2024 from 12:00 PM to 5:00 PM

Academies of Loudoun

42075 Academy Drive, Leesburg, VA 20175

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Letter from the AcademiesHacks Team

Ahoy and Welcome Aboard Student Hacker!

Welcome to AcademiesHacks 2024! As always, the goal of this hackathon and CTF is to make friends, create something interesting, learn new technologies, and most importantly have fun! We hope you are as excited as we are to join us.

This document contains important information you should know before the hackathon. Please refer to the table of contents to find information about the schedule, workshops and activities, judging, and more.

Action Items:

- **If you have not already submitted the [Permission Click](#) form with your parent's email**, please do so now. You are not considered registered until the Permission Click form has been correctly completed.
- **Download Prerequisite Content.** Once the hackathon begins it may be difficult to download large files due to the amount of internet traffic and the time restrictions.
 - This does not mean that you can start working on your project beforehand!
- **Doors will open at 8:45 am.** The opening ceremony starts at 9:15 am, and we heavily recommend every participant attend the ceremony. This is where we'll set-up WiFi, answer questions, etc. If you have to leave early, you may do so, but you will not be permitted to return.
- **Please review the [Major League Hacking's \(MLH\) Code of Conduct](#).** All participants must abide by these rules and follow our safety protocols. Failure to do so will result in removal from the event.
- **Check academieshacks.com and the Remind regularly** for updates!
- **Join** the AcademiesHacks remind **@aclhacks24**
- Feel free to **reach out with any questions or concerns**. Email 855528@lcps.org or 851800@lcps.org. Both this document and the website will be continually updated until the event.

Once again have a great time and look forward to meeting you all!

Jocelyn Chang and Kiersten Engen

AcademiesHacks Student Director, Computer Science Honor Society President

Hackathon Basics

What is a hackathon? A hackathon is best described as an “invention marathon.” A hackathon is an opportunity to learn, build, and share their creations in a relaxed and welcoming atmosphere. At AcademiesHacks, you’ll create in teams of 1-3 over two days. You’ll have the opportunity to learn from workshops and mentors, and use your knowledge to win prizes!

I already have a project in mind: If you already have a project idea, awesome! We encourage everyone to start thinking about what they want to build. However, we ask that participants *don’t write any code before the event*; we want to keep it fair for everyone. If you don’t have an idea, no worries! We have mentors and tons of workshops to help you brainstorm at the hackathon.

I don’t have coding experience: No programming experience is necessary for AcademiesHacks. In addition to mentors, we have plenty of beginner, intermediate, and advanced workshops to help you get started.

What should I bring? TL;DR: Packed food if you’d like, a laptop and a charger, any other equipment you want for your project, and medical equipment.

- **Will food be provided?** Food and drinks will be provided free of charge. In order to accommodate a majority of students, pizza will be provided for both lunch and dinner on Day 1 (pepperoni and cheese). Snacks will be provided on both days as well. If you have specific dietary restrictions, we ask that you bring your own food. You can also bring extra snacks and drinks for yourself!
- **Do I need to bring my own laptop?** *We strongly encourage all participants to bring their own laptops and **CHARGERS** (phone and laptop!).* We have laptops and chromebooks available for those who cannot bring their own device, but we have a limited amount. Additionally, we recommend that you bring a laptop that is NOT a chromebook so you have access to different software. Nonetheless, a chromebook can suffice.
- **Can I bring other equipment I want to use for my project?** Yes! We recommend this. We only have a limited number of finches and drones.

- **I need an inhaler or Epi-Pen:** We want to ensure everyone is safe at AcademiesHacks. If you use an inhaler or an Epi-Pen or have any other special medical needs, please come prepared!

Can my parents come? Parents are welcome to come in during registration and attend the awards ceremony on Day 2. However, **unless they are registered as a volunteer or mentor, your parents can't stay around.**

We also encourage participants to ensure that they have a ride to and from the event. **We have limited parking spaces and most will go to volunteers.** Check the website for times.

Important Safety Information:

1. Participants cannot go in and out of the building.
 - a. Participants can only leave and come back WITH their parents.
2. You cannot wander around the school.

Communication and Help

Please join the Remind! Text @aclhacks24 to 81010. We will be using Remind to send important announcements about project deadlines, schedule changes, upcoming activities and workshops, etc. throughout the day. Participants can also ask questions and request help through the Remind.

Help Desk: If you need help with your project, we'll have people available to help at the start of the event. You can visit the help desk to talk to a mentor.

Capture the Flag (CTF)

Our FlagFest! CTF (Capture The Flag) contest is a skills competition that challenges contestants to solve a variety of cybersecurity puzzles. Our FlagFest! challenges have been created in a Jeopardy-style scavenger hunt format consisting of basic programming exercises and hacking your way into an operating system to find hidden information. This will be the second year of the Academies of Loudoun “FlagFest” CTF contest and workshop.

For the CTF Competition: Teams composed of 4 LCPS high school students will compete in a series of cyber-related challenges. All CTF competitors must also submit an individual registration (w/ parental permission click) form prior to the start of the contest. The competition will begin at 10:00 am and end at 5:00 pm on May 18th. Over \$400 in prizes will be awarded to the teams with the most points. Students who compete in the CTF contest will be unable to participate in the AcademiesHacks Hackathon challenge.

CTF Workshop: There will be a separate CTF workshop, where students who are not participating in the competition will be able to learn and solve CTF challenges with the help of student mentors/volunteers. All students registered for the AcademiesHacks event are free to participate in the CTF workshop (Saturday from 10 a.m. - 5 p.m.), which is open to students of all ages and abilities.

Schedule: Day 1

We will update this document with a list of the workshops you have signed up for on Friday.

DAY 1 - Saturday, May 18, 2024					
8:45 am - 9:15 am	Student check-in				
9:15 am - 9:45 am	Opening ceremony				
9:45 am - 10:45 am	MIT App Inventor (1301)	Intro to CISCO & Wireless Routers (1308)	Intro to Deep Learning (1309)	Intro to CTF (1307) (10am - 5pm)	CTF Event (Auditorium) (10am - 5pm)
	Finch Bots (1305)	UI Design (1306)			
11:00 am - 12:00 pm	Intro to Python (1301)	Micro:bits (1305)	Intro to ML (1306)	APIs (1309)	ROM Hacking & Modding (1309)
	Mario Kart (1306)	Trivia (1307)	Wii Games (1308)	Intro to CTF (1307) (10am - 5pm)	CTF Event (Auditorium) (10am - 5pm)
12:00 pm - 1:00 pm	Lunch				
1:15 pm - 2:15 pm	Intro to Java (1301)	Intro to Godot (1306)	Web Design (1305)	3D Graphics w/ Java (1308) (1:15pm - 3:30pm)	Intro to CTF (1307) (10am - 5pm)
	Cup Stacking (Cafeteria)	Jackbox Games (Blue Commons)	Geoguessr (In front of auditorium)	Big Jenga (Cafeteria)	CTF Event (Auditorium) (10am - 5pm)
2:30 pm - 3:30 pm	Blender (1305)	React Mobile App Dev (1313)	Competitive Programming (2312)	3D Graphics w/ Java (1308) (1:15pm - 3:30pm)	Intro to CTF (1307) (10am - 5pm)
3:45 pm - 5:45 pm	Mafia (Front)	Tetris (In front of auditorium)	Wii Sports (Blue Commons)	Code Golf (Orange Commons)	CTF (Auditorium) (10am - 5pm)
6:00 pm - 7:00 pm	Dinner				
7:00 pm - 7:30 pm	Doors close				

Schedule: Day 2

DAY 2 - Sunday, May 19, 2024					
12:00 - 12:30 pm	Student check-in				
12:30 - 2:00 pm	Deadline to finish coding and submit projects				
2:00 - 2:30 pm	Snack				
2:30 - 4:00 pm	Tetris	Mario Kart	TypeRacer	Cup Stacking	Coloring
4:00 - 5:00 pm	Closing ceremony and awards				

The schedule for both days can also be found at academieshacks.com! It will be updated continually through the day of the event, and any changes to the schedule during the hackathon will be announced on the Remind.

Workshops

Workshop Capacity: With the in-person hackathon this year, we have a 20-30 person capacity for each workshop. A [workshop sign-up form](#) was sent out to attendees and parents, and we encourage participants to fill it out ASAP. Once a certain workshop has reached capacity, it will be removed from the form.

Prizes

Award	Prize
Best Overall Hack	1st: Xbox Series S 2nd: Drone 3rd: AirPods 2nd Gen
Best Middle School Hack	Wireless Charger
Best Theme Hack	Echo Pop
Best UI/UX	Rocket Book
Most Innovative/Impact	Airtag
Best Hardware	Arduino Uno
Best Game	Gaming keyboard and mouse
Workshop Attendance	Flash drive

- **Best Middle School Hack:** Teams are only eligible for these awards if every member of the team is a middle schooler or a beginner.
- **Workshop Attendance:** After every workshop you attend, you will be given a raffle ticket. Towards the end of the first day, we will be calling tickets to receive a prize.

All projects must be submitted on DevPost to be considered for a prize:

<https://aclhacks24.devpost.com/>

Also see project submission information here:

<https://docs.google.com/document/d/10QPdDPHd8Fa6CAkYtXx6HdXgVQnGM4BOwYzj4Kbnqvg/edit?usp=sharing>

Prizes will be distributed at the awards ceremony at the end of Day 2. You must attend the ceremony to win a prize (so attend!). If you can't be present due to some extenuating circumstance, contact nathanial.cool@lcps.org.

Project Examples

You can create anything you want to! You don't need to create a super serious project. Here are some interesting example projects:

Silly Projects Examples

[Robot Shoots Water On You -> Winner of HackKU, Hack TJ 8.0](#)

[Tarun Ravi's \(ACLHacks 2021 president\) YouTube channel with silly robots](#)

[Annoying People with Pi -> Subscribe on Youtube](#)

Machine Learning Projects Examples

[PoseCheck -> Winner of Hack TJ 8.0](#)

[Image Classifying Pokédex -> Winner of New Year New Hacks](#)

Web/App Dev Projects Examples

[Crash Central -> Winner of HackTJ 8.0](#)

[Power Contest -> Winner of HooHacks 2020](#)

Hardware Projects Examples

[Ar\(m\)duino -> Winner of New Year New Hacks](#)

[Generating Electricity By Walking -> Winner of HarmonyHacks](#)

Beginner Projects Examples

[Factoring Calculator -> HarmonyHacks](#)

[Breadboard Simulator -> Silicon Valley Hacks](#)

[FlappyGalaga -> Winner of Hack BI IV](#)

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