

ITM 295R/CIT 295 Practicum Project Plan and Progress

Before the Semester

1. Study the "ITM 295R/CIT 295 Project Proposal and Course Work Requirements" document
2. Find a service project
3. Meet with your project sponsor and conduct the requirements' analysis study such that you can complete Item 5 below
4. Fill out every item in **blue**
5. Create a weekly plan by filling out the "**This week's goal**" field for **all 13 weeks**
6. Fill out **Tasks** for Week 1 (should not be the "initial meeting" as you already had one)
7. Email this document to the instructor for approval

At the End of Each Week during the Semester

8. Fill out every item in **green** for that week ("Week *n* Journal")
9. Fill out **Tasks** for the coming week ("Week *n+1* Plan")
10. Insert photos / screen captures as appropriate in Section 7. "Photos, Screen Captures, etc."

At the end of the Semester

11. Fill out Section 6. "Project Evaluation"

1. About You

Name	Benjamin Ekstrand
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2. About Your Project Sponsor, Client or Supervisor (you must have one)

Organization	Mojave River Academy
What they do	Independent Study School K-12
Name	Thom Musslewhite
Contact Info	
How you know the sponsor	I was previously employed at the school as a tutor.
The initial meeting date	08/10/22

3. Your Service Project

Type ¹	Computer Literacy and Coding Club
Describe what you will do in details, including the	I plan to teach children grades 6-8 basic computer skills such as navigation, app manipulation, and leading up to some early-stage coding with the programs such as scratch.mit.edu and code academy.org to improve literacy and engage students in a curiosity of computer systems. This is a

¹ Type may be WDD, software development, automation, DB, networking, security, system administration, systems analysis and design, project management, testing, teaching, LAB development, technical support, consulting, or others (name your own) that best describe what you will do.

overview, scope, features, components, deliverables, etc.	primarily a low-income school and these students have not been afforded the opportunity to engage in meaningful computer use most of their lives, even when expressing interest. I intend to change that and hopefully catapult some of them into a lucrative field beyond their required schooling endeavors.
Resource needed / used	Computers (provided), internet access (provided), scratch.mit.edu (free), code.org (free).
How you found this opportunity	I reached out to my previous employer with to gauge interest since I had discussed the option when I was employed there previously, and it was well received.
How it will benefit others	The children will theoretically learn more than they had previously about the wonders of technology, and the opportunities that gaining knowledge of it can afford them if they choose to follow that path in the future.

4. Weekly Schedule (when you plan to do your project):

Where	Mojave River Academy
When (day & time of the week)	Tuesday and Thursday weekly at 3PM

5. Weekly Plan and Journal

Week 1 Plan	This week's goal ● Introduction to Computers and Hardware. Tasks ● Introductions of students and club goals. ● Overview of weekly classes. ● Computer hardware demonstration. ● Q&A session and next week briefing.
Week 1 Journal	Hours Worked This Week: 4 Total Running Hours: 4 What you did this week (your accomplishments): ● This week was focused on getting to know the students, their familiarity with technology, what they hoped to learn and just a "feeler" for what we could reasonably accomplish with the time we are given, and the students present. ● I mostly focused on getting the students excited about the material to be covered and, hopefully, that would motivate them to spread the word about the club and bring their friends for the following session (there were only 8 students on session 1). ● After we had introduced ourselves, I asked the students if they could name hardware parts of a computer that I pointed out on a Window's based desktop machine.

	● After we had a correct answer, I would then explain the functionality of that part of the computer and how it helped us do daily tasks. ● As time ran quickly, we did not get as much done as I would have liked, and we had to end the class before finishing everything that was planned. There is always next week, though. Reflection (your thoughts and feelings): ● I think this week's session went well for an introduction, most of the students seemed engaged and interested in the content, and I had about 70-80% participation in the group activity. ● Some of the shyer students may need some more coaxing to get comfortable with the group dynamic and given some extra encouragement to shine. I noticed a few of the shy types seemed more knowledgeable than they let on, but were intimidated by the group setting. That is something that may change once we are working on a project on individual computers, but together. ● I think this has potential to be a huge success with these students, and they seemed especially excited about the project at the end of the course. I hope they all continue to show up and participate with the same level of gusto that they showed this week.
Week 2 Plan	This week's goal ● Introduction to Operating Systems. Tasks ● Review last week's material (briefly for new people and as a refresher) ● Tie in the hardware pieces to the software that directs the hardware. ● Show some of the fundamentals of Operating Systems.
Week 2 Journal	Hours Worked This Week: 4 Total Running Hours: 8 What you did this week (your accomplishments): ● Reviewed hardware and how it processes operating systems and applications. ● Introduced Start Menu navigation with Submenus. ● Introduced basic File Explorer navigation and folders. ● Introduced File Types and how to identify them. ● Introduced Programs as the desktop version of Apps that they are familiar with. Reflection (your thoughts and feelings): ● This week was a bit more challenging due to many of the students not being familiar with Windows as they are with mobile operating systems. Things began to "click" when I associated "Apps" with "Programs". ● Students were intrigued with the idea of having more freedom to manipulate and interact with files more freely than on a mobile device.

	- Students were shocked with the amount to “free” or “open-source” options available to do tasks on Windows vs. mobile. - Students seemed to grasp the concept of navigation faster than many other concepts. - Next week will need a refresher before we dive deeper into Operating Systems. - I had slightly higher attendance this week vs last week at 14 students vs last week's 8 students, which is promising for the growth of the group and hopefully that means that the word being generated in a positive light about the program.
Week 3 Plan	This week's goal - Intermediate Operating Systems. Tasks - Review previous week's material. - Introduce installation and uninstallation of programs. - Introduce maintenance tasks of Windows. - Introduce startup tasks and task manager. - Introduce “run” commands. - Introduce Backup and Restore. - Introduce Windows updates.
Week 3 Journal	Hours Worked This Week: 8 Total Running Hours: 16 What you did this week (your accomplishments): - Briefly reviewed the basics of computer navigation - Briefly reviewed file systems and file hierarchy. - Introduced Installation of software, including best practices for installation locations. - Introduced disk cleanup management and defragmentation, including discussing the pros and cons with newer operating systems. - Introduced startup and task manager, including usage for hanging applications and reducing startup time by disabling startup items. - Introduced Windows updates and how to detail update contents for optional updates. Reflection (your thoughts and feelings): - This week was much more involved and challenging for some students, we were in uncharted territories for all but 1 or 2 students. - Attendance was up this week from about 14 to 16 students, which is promising for the future of the class. - Students were interested in maximizing their performance of the computer, due to many of them being gamers and wanting their computer to run at peak performance.

	● I imagine most of them will take some of the information home with them and use it in their personal lives. ● Most students had never truly given any thought to where they were installing their software, and many of them eagerly wanted to check if they were installing and playing games on the optimal hardware they had installed. ● It was a good week, and the excitement seems to be building as the group grows, and they are obtaining tools they want to use for their own devices.
Week 4 Plan	This week's goal ● Networking Fundamentals. Tasks ● Review previous week's material. ● Introduce "run" commands. ● Introduce Backup and Restore. ● Introduce network hardware types. ● Introduce network types. ● Introduce the difference between networks and "the internet". ● Introduce IP addressing.
Week 4 Journal	Hours Worked This Week: 6 Total Running Hours: 22 What you did this week (your accomplishments): ● Review previous week's materials (startup programs, disk cleanup, Windows updates). ● Introduced system backup with restore points. ● Introduced system restore with options. ● Introduced wired and wireless networking with pros and cons. ● Introduced networks vs "the internet". ● Briefly touched on what an "IP address" is. Reflection (your thoughts and feelings): ● This week was challenging for some of the students, and they seemed to need more time with the concepts, with quite a bit of repetition on the steps involved. ● In conjunction with needing more time, they were asking more detailed questions, which was encouraging. It seemed like they had done some of their own, independent study outside the time allotted together. ● I feel that the idea of a network, without the internet did not make much sense to this younger generation (I know that sounds like an old man yelling at the clouds), but they did not seem to grasp that computers could communicate together without using "the internet" until I used the walkie-talkie metaphor. It clicked after that.

	The class size is holding for now at about 15 students, which is good considering the typical turnout for other club-based activities in this student demographic.
Week 5 Plan	This week's goal - Network Troubleshooting. Tasks - Review last week's topics. - Finish discussing IP Addressing. - Discuss repair tools for networking (Windows basic). - Discuss repair tools for networking (Mac basic). - Discuss hardware troubleshooting for network hardware.
Week 5 Journal	Hours Worked This Week: 6 Total Running Hours: 28 What you did this week (your accomplishments): - Reviewed networking. - Reviewed IP addressing - Finished IP addressing explanation. - Discussed built-in repair tools for networking with windows. - Discussed built-in tools for network repair within Mac environment. - Discussed network card components and router components and troubleshooting. Reflection (your thoughts and feelings): - This week was an intense week of knowledge, and most likely will need extensive review next week. - Students seem to be interested in this, but most likely will want to move on to something different, so the weekly plan may have to shift away from this topic if engagement wains. - Time involved to prepare for these classes is ramping up along with real life school/work responsibilities. Possible need to condense classes together or purge "less critical" classes. - Class size was 14 this week, nearly identical to last week, which is still good considering the "hype" is dying down.
Week 6 Plan	This week's goal - Internet Safety and Security. Tasks - Review of last week's material. - Network overview. - Phishing pitfalls. - Password security overview.

	- Identifying scam emails. - Identifying legitimate links vs. potentially harmful links.
Week 6 Journal	Hours Worked This Week: 6 Total Running Hours: 34 What you did this week (your accomplishments): - Briefly reviewed last week's material on Networking. - Reviewed the relationship between computers, networks, and the internet. - Introduced password security history and importance. - Explained password complexity relevance. - Introduced and explained 2FA. - Introduced phishing scams and how to spot them. - Explained common illegitimate email and phone scams. - Showed examples of legitimate and illegitimate links and how to identify and protect themselves. Reflection (your thoughts and feelings): - This week was a whirlwind of material, but I feel that many of the students really related with the topics that were presented. - Many students had known or have personally been a victim of being "hacked" or having their information stolen at some point already in their life. - The tools and steps that I provided seemed to enlighten them on simple ways to make it less likely of becoming prey to forms of scamming or malicious software. - Many students were already wanting to implement 2FA on their accounts for the apps that they used the most, which is encouraging. - The class size is holding strong at about 12-16 students, which seems to be a sweet spot for getting much done without feeling like students are falling behind or through the cracks. - Next week should be another challenging week, but hopefully they all like it.
Week 7 Plan	This week's goal - Computer Maintenance and Troubleshooting. Tasks - Teach cleanup and restore in detail. - Teach command line restore and MBR. - Explore "safe-mode" on Windows. - Teach booting into removable Linux install to recover files. - Teach driver update, install, and uninstall for hardware. - Teach BIOS features overview.

Week 7 Journal	Hours Worked This Week: 6 Total Running Hours: 40 What you did this week (your accomplishments): • Taught cleanup and restore in detail. • Explored command line restore and MBR. • Introduced “safe-mode” on Windows. • Briefly showed booting into removable Linux install to recover files. • Explored update, install, and uninstall for hardware. Reflection (your thoughts and feelings): • This week covered some advanced topics and taxed the students mentally to keep up. • Cleanup and restored seemed especially intriguing to students due to previous frustrations with computer crashes and slowdowns. • Safe mode was largely and unknown to students and they seemed to not grasp what the usefulness was until I explained the troubleshooting aspects. • Linux was a complete mind explosion for the students considering it is a very advanced concept to them. I didn’t explain all the minutia of how to install an OS to a bootable flash drive, but the concept of dual boot OS seemed like magic to them. I became the computer wizard that day. • Hardware updates and drivers was mostly familiar to the students, especially the ones who had PC gaming experience. They enjoyed the concepts, and it was a nice break from some of the heavier topics.
Week 8 Plan	This week’s goal • Introduction to Coding. Tasks • What is coding? • How does software communicate with hardware? • Binary introduction. • History of coding. • Example coding introduction.
Week 8 Journal	Hours Worked This Week: 3 Total Running Hours: 43 What you did this week (your accomplishments): • Prepared review material based on previous week. • Prepared Task material for this week. Reflection (your thoughts and feelings):

	• This week the club was canceled due to administrative conference which left me with no school-side oversight of the club. • This was a last-minute decision by administration and left me with material that was generated but unable to teach it. • This left me a bit frustrated due to the inconvenience to the students and my time spent preparing. I really wish I had been informed sooner so that I could have allocated my time to other school related task. • I hope that this doesn't derail the momentum of the class due to students missing an entire week of consistency and lead to the club shriveling in size. • Next week is another week and now at least I am prepared already and will only have to review before the club date.
Week 9 Plan	This week's goal • Code.org Basics. • Introduction to Coding. Tasks • What is coding? • How does software communicate with hardware? • Binary introduction. • History of coding. • Example coding introduction.
Week 9 Journal	Hours Worked This Week: 4 Total Running Hours: 47 What you did this week (your accomplishments): • Introduced what coding is. • Explained hardware language and software languages. • Detailed brief history of coding. • Demonstrated a quick example of code running. Reflection (your thoughts and feelings): • This week was a catch-up week due to last week being unable to meet with students. • I attempted to keep the technicalities of coding simple due to the risk of overwhelming students with the depth at which code can be explained. • Students seemed curious about how coding was invented, which lead us to deep-dive a bit more than was expected into that subject. It was good though, they really felt charged up after that to explore. • Showing a small portion of live coding in HTML and how it can affect a webpage was akin to making a child believe in magic or Santa Clause again, it was exciting and motivating for them and me. • This week's attendance was a little lower than previous weeks, which was to be expected. • 10 students attended this week.

Week 10 Plan	This week's goal • https://scratch.mit.edu Coding Introduction. Tasks • Introduce https://scratch.mit.edu coding and what types of projects people have produced. • Setup student accounts and generate a form for all that information (in case a student forgets information). • Let students explore basic navigation of the scratch interface. • Let students explore existing projects to brainstorm ideas for their personal projects. • Assign a simple coding problem for next week.
Week 10 Journal	Hours Worked This Week: 6 Total Running Hours: 53 What you did this week (your accomplishments): • Introduce https://scratch.mit.edu coding and what types of projects people have produced. • Setup student accounts and generate a form for all that information (in case a student forgets information). • Let students explore basic navigation of the scratch interface. • Let students explore existing projects to brainstorm ideas for their personal projects. • Assign a simple coding problem for next week Reflection (your thoughts and feelings): • This week was the first week students had some hands-on time with coding and got to look under the hood of projects that other people had created using the scratch.mit interface. • The students seemed highly engaged with the website and were talking at great length amongst each other at the projects they could find that people had created, sharing them and brainstorming ideas. • This week was a decent amount of hands-off time for me, allowing the students to ask questions and tinker amongst themselves. • It was refreshing to not be the one talking at the students this week and allowing them to work together to strategize what their plans were for the weeks ahead and see the fruition of what seeds of knowledge I had planted in previous weeks. • Attendance was up this week from 10 to 13 this week which is a good week for it to happen. That is a strong indicator that we will have a good push for the coming projects.

Week 11 Plan	This week's goal - Scratch Game Project Beginning. Tasks - Assign groups of 2-3 for projects. - Sit down with groups to discuss projects scope. - Discuss methods and scope efficacy. - Monitor and assist in groups project efforts. - Motivate and assist project direction.
Week 11 Journal	Hours Worked This Week: 2 Total Running Hours: 55 What you did this week (your accomplishments): - Work on personal assignments. - Prepare for coming weeks and adjusting scheduling. Reflection (your thoughts and feelings): - Well, I somehow forgot that this week was Thanksgiving week, and the kids were not going to be able to meet with me for a class due to their instructors not being available to supervise. - That is kind of a bummer for my timeframe and momentum, but I am not going to let it get me down. - I am going to work on my actual classes this week due to major assignments due, so this is convenient timing. - I should have a bit of spare time to brush up the schedule and make cuts/adjustments to the closing out of this program.
Week 12 Plan	This week's goal - Scratch Game Project Continued. Tasks - Assign groups of 2-3 for projects. - Sit down with groups to discuss projects scope. - Discuss methods and scope efficacy. - Monitor and assist in groups project efforts. - Motivate and assist project direction.
Week 12 Journal	Hours Worked This Week: 6 Total Running Hours: 61 What you did this week (your accomplishments): I assigned groups of students with different skill levels but similar interests into groups for projects using scratch to create a game.

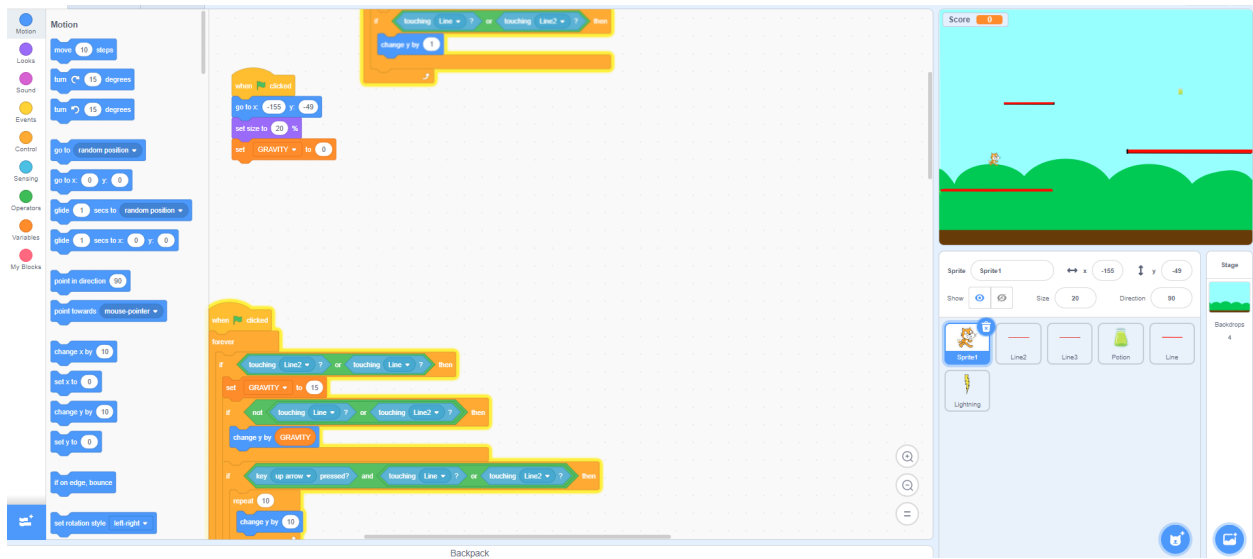
	• The game is to build a puzzle game using a player character, at least 2 item collections, varying path options, an ending area, and a level transition to a new level with a different landscape. • Groups were tasked this week with brainstorming ideas for a project and submitting a rough idea before end of session and a way to communicate and work on the project with groupmates throughout the week. • I would assist in stimulating brainstorming without a great deal of handholding. Reflection (your thoughts and feelings): • This week was nice to see the students be more in control of the class and really see them flourish when allowed to exercise their creativity. • Students seemed to mostly work autonomously when paired with others, mostly only needing me as a referee when it came to disputes over project ideas and efficacy of a project given the shortened timeframe. • All groups seemed to have a solid plan in place and highly motivated to get to work by the end of the class time. • I am very intrigued by what they may come up with in the coming week and hope they will continue the project beyond the time they have with me. • We had a above average amount of students this week with 17 students and hopefully that means they will have adequate help for the impending project workload.
Week 13 Plan	This week's goal • Scratch Game Project Conclusion. Tasks • Last minute review and troubleshooting stubborn code. • Group project reviews and presentation. • Group collaboration of proposed changes and inter-group work to push projects to finality. • Saying goodbye and motivating to continue striving toward goals and technology curiosity.
Week 13 Journal	Hours Worked This Week: 4 Total Running Hours: 65 What you did this week (your accomplishments): • Helped students with last minute code fixes or changes. • Assigned students that had finalized code as "helpers" to groups struggling to completion. • Organized and presented completed code. • Reviewed, critiqued, and celebrated completion of projects. • Left students with parting words of encouragement.

	Reflection (your thoughts and feelings): • This week was a frantic mix of chaotically helping students troubleshoot, organize students into groups and wrangle students into order to present their work. • It was a great and fulfilling end to the project and I believe I have stoked the embers of curiosity and wonder in several students to, I hope, pursue this interest into a greater passion in their lives. • The presentations went well with the students having a laugh being impressed with others' ideas, and generally being supportive and encouraging to their fellow students in an environment that they all shared hard work and struggles. • This felt great to motivate and inspire them, and I felt that at the end the students will remember this class and look back at it fondly because I know I will.
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6. Project Evaluation

Links to your project (web, video, photos, presentation, etc.)	Presentation for week 1 of computer club Presentation of project to peers
How was your presentation experience?	My presentation was very fulfilling to share with my peers about my experiences and reflect on all that I have accomplished and worked for over the semester. It felt great to see others with such a variety of projects and experiences and seeing us close to the finish line of the goals we all set out to achieve.
What did you learn?	I learned that even the most well intentioned and laid out plans will not work out as hard as you try, and you must be able to pivot at any given moment and adjust your expectations. I also learned that students, regardless of background, can surprise you and flourish given an environment to do so.
What was most exciting?	The most exciting part of the project was the final few sessions and the individual projects, seeing the students brainstorm and take the lead in the classroom, reaping the fruits of my labors. The presentations at the end with students excited about their work made it all worth it.
What was most difficult?	The most difficult thing was probably the lack of autonomy with timelines and coordinating with not only students, but available instructors from the school to make the classes happen.
Advice to future students	Future students, find something you are passionate about for this project and it will not feel like work. It is pivotal to making the time fly by and the effort you put it rewarding.

7. Photos, Screen Captures, etc. with Caption:



Student Scratch Project

Computer Literacy and Coding Club

Stream Classwork People Grades

Meet

Join

Visible to students

Class code

kqz5ncf

Upcoming

No work due soon

View all

Announce something to your class

Benjamin Ekstrand posted a new assignment: Week 13 - Scratch Game Project Conclusion
Nov 30

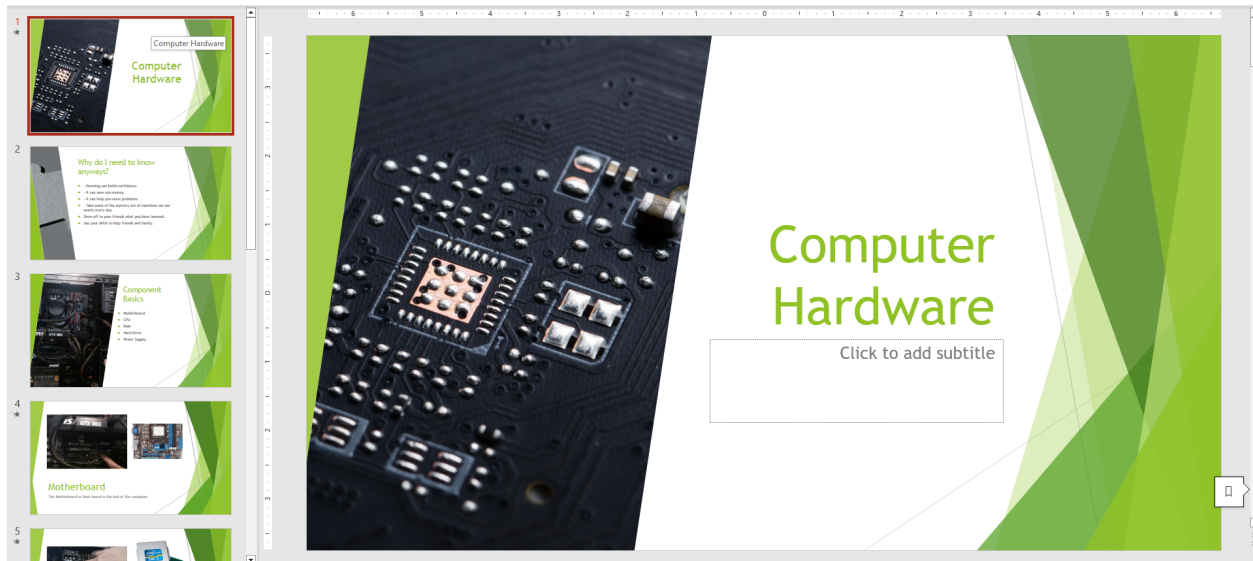
Benjamin Ekstrand posted a new assignment: Week 12 - Scratch Game Project Continued.
Nov 30

Benjamin Ekstrand posted a new assignment: Week 11 - Scratch Game Project Beginning.
Nov 30

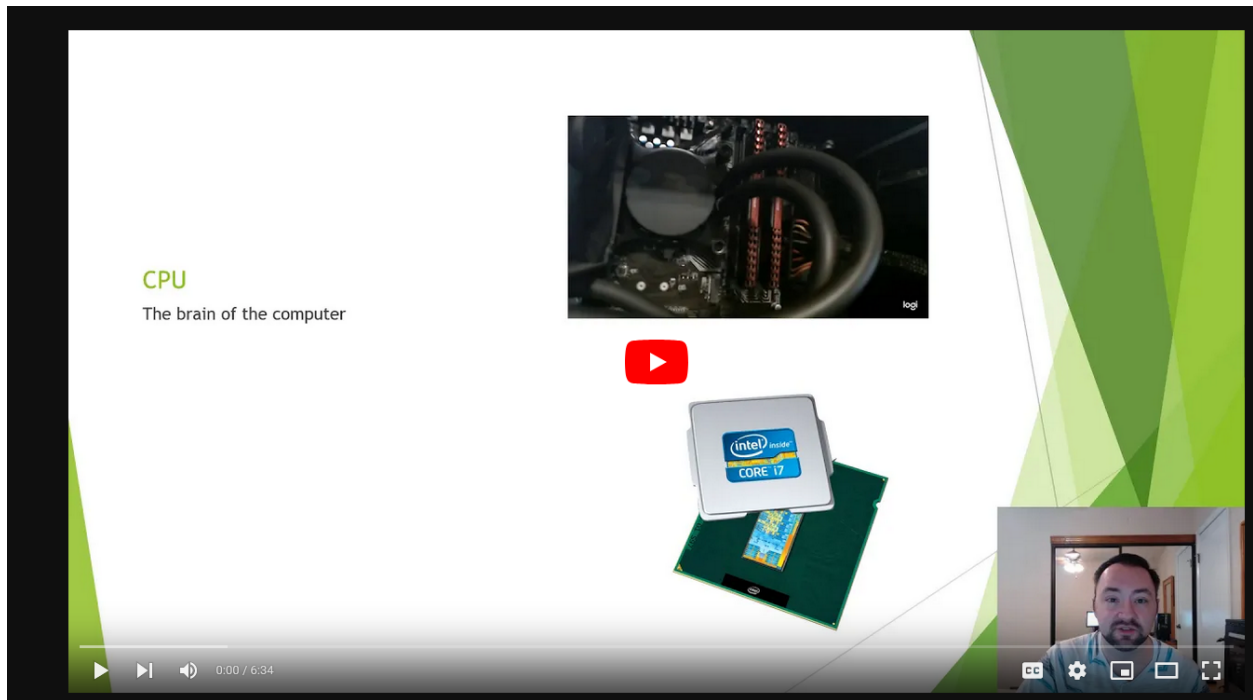
Benjamin Ekstrand posted a new assignment: Week 10 - https://scratch.mit.edu Coding Intro...
Nov 30

Benjamin Ekstrand posted a new assignment: Week 9 - Introduction to Coding.
Nov 30

Computer Club Classroom Page



Computer Club Weekly PowerPoint



Presentation Video for Students.