**Group 1: Metric #2 Data Collected**

Write a discussion post that covers an overview of the topics, lessons learned, and new experiences you found helpful during your time in this course.  Be sure to discuss also your greatest challenges and how you were able to overcome or deal with them. The initial post should include no less than 300 words. Then provide an additional comment on at least 2 classmates posts.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Dennon Wilson

[**Dennon Wilson**](https://murraystate.instructure.com/courses/1439571/users/5301673)

Nov 2, 2023Nov 2, 2023 at 2:50pm

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

Learning about multi-threading and abstract classes was cool. My biggest take away from this class will definitely be the experience of working in a group to complete sprints and epics to get a final product produced. The experience from using GitHub has also been good. Working with JFrame to make GUIs in java has been really fun. I think my greatest challenges in this class have been trying not to think about every little thing I want my project to have and just work on it one step at a time. At the start of making something like a library management system it is easy to get bogged down by every little thing I wanted in the GUI or every little thing I wanted to implement in the program. All this being before groups were created. Getting the framework done for a program and then working on the next until its done and then doing it again for the next step is something so obvious, but its getting that first step started that can be so hard. I have come to realize that first step is the one I struggle with the most. I feel quite confident in my capabilities of adding to and fixing code. Getting a brainstorm into the base code is something I know that if I work on I can become much better at. In a group setting it becomes much easier for me to get work done, I feel like I can hold my own in the group by adding to and helping fix other sections. Having worked in a scrum team during this class has made me truly realize this is what I want to do. Being a part of a development team has been fun and I feel like it has really helped improve my coding skills. This has definitely been one of my favorite classes by far for all of these reasons. That not mentioning how cool it has been working with a database for this final project. I hope everyone else has had as good of a time as I have had in this class.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Jonah Hampton

[**Jonah Hampton**](https://murraystate.instructure.com/courses/1439571/users/5301691)

Nov 3, 2023Nov 3, 2023 at 4:11am

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I love a lot of these ideas, especially the part about realizing that developing is what I want to do as well thanks to this class. It's been an absolute blast having some agency and creative liberty in our work, getting to lead and work how we want. It's my hope that we all can continue to flourish into good developers.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Aayush Agasti

[**Aayush Agasti**](https://murraystate.instructure.com/courses/1439571/users/5316302)

Nov 4, 2023Nov 4, 2023 at 9:56pm

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

I completely resonate with your experience, especially the initial struggle of taking that first step in project development; working in a group has indeed made the process more manageable and enjoyable

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Michael Toon

[**Michael Toon**](https://murraystate.instructure.com/courses/1439571/users/3510703)

Nov 5, 2023Nov 5, 2023 at 9:06pm

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

Yea man I fully agree, the fact that we were able to replicate what actually takes place in the real world when it comes to being on a dev team was huge! Everything that we learned I am actually making use of right now at my internship with the stand ups/sprints/etc. I also talked about the importance of this class exposing us to GItHub in my comment as well, because honestly I had never used it before. I had heard of it, but never knew exactly how a dev could leverage it and exactly what a powerful tool it was!

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[**Jonah Hampton**](https://murraystate.instructure.com/courses/1439571/users/5301691)

Nov 3, 2023Nov 3, 2023 at 4:14am

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

The places this class has gone has been invaluable to me. Of course, we'd gone over the main important ideas covering abstraction, interfaces, inheritance, graphics, APIs and databases galore, but those really weren't the most important to me. The most important thing to me was hands down having the opportunity to work on what's really a real world project. This library management system, both the current one we are working on in smaller groups and the previous one, has been a great new experience for me during my tenure here in 325. It has taught us so many things.  
  
Through these projects, we've learned more concrete skills such as using GitHub, how to program for a bigger project, among other things. But some of the bigger ideas that arose are also very helpful. We learned how to organize, how to work with our fellow developers, how to set goals, and how to direct our project together. Of course, there were some problems, like when nobody would take the leap to assign everyone to different stories that first day. Or the total confusion of jumping around from workstation to workstation for more information. It just takes one person to start, and from there, I learned that the name of the game is communication.  
  
One of the biggest problems I encountered was almost a little silly. We were trying to figure out how we could lay out some abstraction in our database class for the LMS. It took some time, research, and recall to remember the fact that we could pass generics to these methods and solve the problem outright. The satisfaction it gave Isaac, Michael and I could not be understated. We all commented about how much cleaner the code felt, and how much more confident we felt about it. Those types of "small" problems will continue to propagate. I love encountering them (when they're not a confusing headache) and, even when they are a headache, I've decided I want more.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Sameer Singh Thapa

[**Sameer Singh Thapa**](https://murraystate.instructure.com/courses/1439571/users/5309744)

Nov 3, 2023Nov 3, 2023 at 11:04am

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

Jonah, I agree that working on real projects in class is the best part. Solving problems can be tricky, but it's a chance to learn. Your story about solving an abstraction problem is cool. It shows how little solutions can make a big difference. Keep up the good work!

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Aayush Agasti

[**Aayush Agasti**](https://murraystate.instructure.com/courses/1439571/users/5316302)

Nov 4, 2023Nov 4, 2023 at 10:01pm

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

I completely agree with you! Working on real-world projects like the library management system has been invaluable. Overcoming challenges, whether big or small and finding solutions together with our team has not only taught us technical skills but also the importance of effective communication and problem-solving. It's these hands-on experiences that truly make a difference in our learning journey.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Travis Tan

[**Travis Tan**](https://murraystate.instructure.com/courses/1439571/users/5296368)

Nov 5, 2023Nov 5, 2023 at 6:46pm

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When he said "I learned that the name of the game is communication" I felt that.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Maria Dodson

[**Maria Dodson**](https://murraystate.instructure.com/courses/1439571/users/5308979)

Nov 5, 2023Nov 5, 2023 at 8:10pm

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

I definitely agree that the most important thing this class has taught is what it's like to work in the real world. I feel much more prepared for the future with the understanding of how it works outside of academia.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Ally Robinson

[**Ally Robinson**](https://murraystate.instructure.com/courses/1439571/users/5279911)

Nov 5, 2023Nov 5, 2023 at 9:15pm

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I love that satisfying feeling when a problem gets fixed!

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[**Dennon Wilson**](https://murraystate.instructure.com/courses/1439571/users/5301673)

Nov 5, 2023Nov 5, 2023 at 10:06pm

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

It is so real when you are going over something and researching, thinking, and planning and when it final clicks everything falls into place. That feeling is so refreshing, relieving, and the reason why it’s possible to sit there coding for hours and hours at a time. I’m glad you were able to figure out those generics.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Isaac Gunderson

[**Isaac Gunderson**](https://murraystate.instructure.com/courses/1439571/users/5299757)

Nov 3, 2023Nov 3, 2023 at 9:11am

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

I have really enjoyed this class. It has been the first computer science course I’ve taken in college that I actually look forward to and feel like I really learn from. The first day that we did the group exercise and had to switch between groups was when I knew that this would be my favorite class. I think that collaborating with other programmers is probably the best thing we could’ve done to improve our understanding of the material. Learning about the abstraction and inheritance was really helpful and kind of opened my eyes to why Object Oriented Programming is revolutionary. Also finally working with visual elements like GUI was nice as well. I also appreciate the material we covered and the debate we had on APIs because I learned a lot of useful information there as well. I think the most valuable thing I’ve taken from this class is the ability to work in a group and collaborate and communicate with one another. I’ve been toying around with game development since I was 12 years old, but this is the first time that I haven’t been working on something as a solo developer. It’s definitely changed the way I code in many different ways. For one, it’s taught me about the importance of commenting. When you’re working by yourself on a project, it can be tempting to get lazy with the comments because you’re the one writing everything, but when in a group, knowing that other people will have to read and understand your code, it definitely puts pressure on the efficiency of your comments. I’ve also learned about the importance of taking the time before you start coding to actually write all the pseudo-code out and figure out how you want to code things. This has been something I’ve learned that I will definitely take with me forever. GitHub was a really important and useful tool that we learned in this class, as well.

One of my greatest challenges was simply communicating with a group. It’s really tempting to just go in and code a fix for a bug that I’ve figured out as quickly as possible, but I’ve realized it’s not worth the confusion and I should simply communicate with my group about what I plan to do before I do it so everyone is on the same page. I also think that one of the greatest challenges is planning the sprints and time management. It can be difficult to predict how much time you’ll need on a certain task, but I’ve learned to overcome this by always dedicating more time than I think I will need.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Jonah Hampton

[**Jonah Hampton**](https://murraystate.instructure.com/courses/1439571/users/5301691)

Nov 3, 2023Nov 3, 2023 at 9:20am

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I also love game development! It is my passion and I greatly hope we can work on a project together someday.

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[**Sameer Singh Thapa**](https://murraystate.instructure.com/courses/1439571/users/5309744)

Nov 3, 2023Nov 3, 2023 at 11:05am

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

Isaac, I'm glad you're enjoying the class. Working together is a big deal, and it's good that you're learning how to communicate. Your advice about planning and commenting is smart – it helps keep things clear when working with a team. Good luck with your studies!

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Michael Toon

[**Michael Toon**](https://murraystate.instructure.com/courses/1439571/users/3510703)

Nov 5, 2023Nov 5, 2023 at 9:15pm

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

I'm right there with you Isaac, this class is the one that has prepared us the most for the real world of development so far! Simulating the Agile methodology in class was a huge thing because I'm using that right now at my internship. And I am kind of like you man struggling with the communication because I just want to dive deep on my own and go. But I got to say having you and Jonah as teammates has made it a lot easier, and I'm going to take what I've learned from working with ya'll and keep getting better at it!

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Dennon Wilson

[**Dennon Wilson**](https://murraystate.instructure.com/courses/1439571/users/5301673)

Nov 5, 2023Nov 5, 2023 at 10:08pm

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

I felt the exact same way when we first moved around in groups. This class has been the best way to start a week and it’s the one I look forward to the most in any given week. What we have done in this class has proven to me that this is what I want to spend my life doing.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Sameer Singh Thapa

[**Sameer Singh Thapa**](https://murraystate.instructure.com/courses/1439571/users/5309744)

Nov 3, 2023Nov 3, 2023 at 10:54am

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

In this class, I've learned a lot of important stuff. We covered things like abstraction, interfaces, inheritance, and worked with graphics, APIs, and databases.

The best part for me was working on a real-world project - a library management system. We learned practical skills like using GitHub, how to work on a big project, and more. But we also learned how to work well in a team, set goals, and communicate effectively. It wasn't always smooth sailing, like when we struggled to assign tasks or got confused while gathering information. But I realized that communication is key.

One challenge I encountered during this course was related to designing an efficient user authentication system for our library management project. We needed to ensure that user data was secure while allowing for user-specific interactions. Solving this challenge required careful consideration of encryption and access control methods. It took time and effort to research and implement a robust authentication mechanism, but once we succeeded, it not only enhanced our project's security but also boosted our confidence in handling complex security issues.

Even when we encountered problems, I found that solving them was a great learning experience. I've learned that embracing challenges, even when they're tough, is important for growth.

Overall, this course has expanded my technical skills and taught me valuable teamwork, communication, and problem-solving skills.

Edited by [Sameer Singh Thapa](https://murraystate.instructure.com/courses/1439571/users/5309744) on Nov 3, 2023 at 11:04am

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Isaac Gunderson

[**Isaac Gunderson**](https://murraystate.instructure.com/courses/1439571/users/5299757)

Nov 5, 2023Nov 5, 2023 at 9:34am

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

I totally agree with you Sameer, about learning practical skills and working on real-world problems. I think this class is really helping us all improve as programmers and just like you said, the challenges are what make us improve because we won't be able to overcome a problem unless the problem arises in the first place.

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[**Maria Dodson**](https://murraystate.instructure.com/courses/1439571/users/5308979)

Nov 5, 2023Nov 5, 2023 at 8:13pm

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Yeah, I definitely appreciate learning more about how to use GitHub. I didn't realize how important it was to know until I took this class! And I also appreciate getting to learn how to problem-solve and work through challenges on our own.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Aayush Agasti

[**Aayush Agasti**](https://murraystate.instructure.com/courses/1439571/users/5316302)

Nov 4, 2023Nov 4, 2023 at 9:52pm

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

During my time in this course, I learned various fundamental topics like abstraction, inheritance, and practical applications like working with GUI. One of the most valuable aspects of this course was the opportunity to apply these concepts in real-world scenarios. We all engaged in collaborative coding exercises like creating a library management system. It was both exciting and educational to work together with classmates, honing our teamwork and communication skills. Through this process, I gained insights into the complexities of software development in a team environment, realizing the importance of effective communication and goal-setting.

Navigating through this course, I learned that collaboration and adaptability are the keys to overcoming challenges. Moreover, the exposure to GitHub and real-world coding practices empowered me with tools and knowledge applicable to professional software development environments. It was undeniably one of the most exciting and enjoyable learning experiences I've had. The dynamic nature of the class, coupled with the opportunity to engage in practical, real-world coding activities, made every session genuinely amazing.

Notably, the challenge I encountered during this course was adapting to collaborative coding and Github. The concepts of branching, commits, and merging were a bit confusing. To tackle this challenge, I decided to invest time in understanding the fundamental concepts of GitHub. I started with online tutorials and documentation, learning about branches, commits, pull requests, and merge strategies. I practiced these concepts in a controlled environment before applying them to our group projects.

Learning this course was an amazing experience that broadened my knowledge and skills in computer science, especially through hands-on projects and collaborative learning with classmates. I genuinely relished the opportunity to dive into the world of programming, and this class provided the perfect platform for me to do so.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Travis Tan

[**Travis Tan**](https://murraystate.instructure.com/courses/1439571/users/5296368)

Nov 5, 2023Nov 5, 2023 at 6:52pm

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I also agree with you Aayush that by doing these hands-on projects, it taught us a lot more than a lecture will.

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[**Drew Rakers**](https://murraystate.instructure.com/courses/1439571/users/5326581)

Nov 5, 2023Nov 5, 2023 at 9:34pm

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It is much more enjoyable working hands on as well. While we still lectured, a lot of time in class is reserved to working in your group.

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[**Travis Tan**](https://murraystate.instructure.com/courses/1439571/users/5296368)

Nov 5, 2023Nov 5, 2023 at 6:34pm

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This class really cemented my decision to be a front-end developer or a full-stack developer, because I had a glimpse of what the real world developing process would look like, like sprints, scrums, and epics and I had fun doing it. I had my own project where I built my portfolio website for my photography by just using HTML and CSS. I also found that working in a group is not bad as I thought it would, having someone to brainstorm for ideas, and design makes not only you a better developer but everyone in the group. I have also finally understand the principles of OOP through this class, as I have only heard about it before but not truly grasping the concept. I also appreciated that we also get to look at code as to why things are happening because this helped me a lot in understanding the topics and concepts that we covered in this class. GitHub was also another thing that I've touched on but haven't really understand how to use it, but now I do. I've prioritized this class than my other classes because doing actual coding and building something that works is so much fun and rewarding. I've also done things that I thought I was not capable, like creating our own database for our current project and putting it in AWS then connecting that database to our application. I really think that I learn a lot more in building these projects.

I would say my greatest challenge is being nitpicky on how certain things I think should do or look like I'm just tempted to add or move or change just one line of code to make it, what I think would be, more efficient or more logical. But I overcome this just by communicating with my group that this should be moved or changed and give them a reasonable explanation as to why I think it should be like that.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Maria Dodson

[**Maria Dodson**](https://murraystate.instructure.com/courses/1439571/users/5308979)

Nov 5, 2023Nov 5, 2023 at 8:07pm

[Manage Discussion Entry](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)

In this class, I feel that I have learned a lot about what a programming environment would look like in the actual workforce. I found it really helpful to get a better idea of what is expected in academia versus what to expect in the real world. I enjoyed learning the different elements of a scrum environment, from learning the roles like scrum master, to learning about how communication is handled (i.e. scrum meetings), to the paperwork required to keep the work flowing properly (i.e. the sprint backlog).

I also feel that I learned a lot of new coding concepts, such as how to make a GUI, how to interact with a SQL database, and multithreading. I was most interested in multithreading, as I can see a lot of benefits to being able to run multiple lines of code at once.

I feel as though one of my greatest challenges in the class was learning how to learn, in a sense. I found it difficult at times to get over the initial panicking phase of not understanding something, but once I pushed through it and was able to formulate specific questions, more often than not I would discover I understood more than I realized. I believe the more laid back atmosphere of the class helped me feel confident enough to ask questions when I didn't understand something.

I also struggled with wrapping my head around GUI design, and I am still struggling to some extent. However, I feel as though I understand enough to Google questions about it, and typically, reaching a level of understanding where you can ask Google for help is enough of an understanding to get by. I have found it most helpful to Google Java GUI tutorials and to play around with working GUIs to see what changes when I make alterations to the code.

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[**Ally Robinson**](https://murraystate.instructure.com/courses/1439571/users/5279911)

Nov 5, 2023Nov 5, 2023 at 9:14pm

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I agree with all of this, but I especially like how you mentioned learned how to learn. Getting through that initial panic is very difficult and I completely understand this.

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[**Drew Rakers**](https://murraystate.instructure.com/courses/1439571/users/5326581)

Nov 5, 2023Nov 5, 2023 at 9:33pm

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I think this course helped a few of us with confidence. Before this class, I had no idea what to expect when I graduated, which isn't too far! Now that we have an idea of what the real world might be like, we are more comfortable taking on different challenges. Working in groups has helped on that part because if you couldn't get your part done, there was someone that could and also explain how to do it.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Michael Toon

[**Michael Toon**](https://murraystate.instructure.com/courses/1439571/users/3510703)

Nov 5, 2023Nov 5, 2023 at 9:01pm

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I would probably go as far to say that so far in my computer science degree this class has taught me the most. Not only from a subject matter stand point but also about coding in the real world.

I’ll start with the content first, learning about abstract classes and interfaces was huge. It totally changed how I think about planning my classes, and in another class we are learning about the S.O.L.I.D principles these are a huge part of that. My next favorite part of the subject material was learning about writing GUI’s and using API’s. With this being only my second semester being exposed to any kind of coding whatsoever, the GUI was always the thing I thought would be cool to make. Like if I ever made one of those I could call myself a developer and not feel like an imposter. One of my goals is to make an app to help my sister with her business one day and learning about the syntax and actually coding one in class has helped me get a step closer to that goal.

Also recently learning about API’s and how to incorporate them into our own code was pretty cool as well. Learning about how that works and knowing there’s a whole toy box of powerful tools you can incorporate into your own creations is enough to make your imagination run wild.

Lastly, the real world experience from this class I have gained has been invaluable. This semester I was lucky enough to land an internship and to anybody reading my comment, what we simulated in class is basically what we do on a weekly basis at my job. We are in the middle of converting from the waterfall methodology to the agile methodology, and coming into that job having experience with the workflow has helped me settle in much easier. I am also glad that during our discussion of this Dr. Owen stressed the importance of communication and proper preparation because besides actually having the skills to write the code they are the next most important in my opinion. This is also the first class that exposed me to GItHub and honestly I think every coding class should incorporate it in some way because it is such a useful tool and an important one to have in your repertoire.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Kris Luck

[**Kris Luck**](https://murraystate.instructure.com/courses/1439571/users/5272550)

Nov 5, 2023Nov 5, 2023 at 11:10pm

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That's awesome you got an internship! Great timing with how this class has started to prepare you for that work environment.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Ally Robinson

[**Ally Robinson**](https://murraystate.instructure.com/courses/1439571/users/5279911)

Nov 5, 2023Nov 5, 2023 at 9:09pm

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I’ve really enjoyed taking this course and all the lessons that were taught during it. I really enjoyed learning about GUI’s as I had never worked with GUI’s in the way that we learned about them in class. I know that learning how to create GUI’s will be very useful in the future and I’m very glad that I got to learn how to work with them. I also really liked that we took the time to take a brief glance at other coding languages as I have only seen bits and pieces of C++, but never really took the time to check out what all of it meant. I also really enjoyed learning about what it is like to work on a team project and learning how to split up the different processes that it takes to complete a project. I know that it will be important in the future to be able to work with a team, so I am very glad that I got that experience. Working on the projects has helped me figure out how different parts of code can work together and create something that is not just something that pops up in the terminal. I really enjoyed working on a real-world project. I found it difficult to sometimes understand what it was that I was supposed to be working on, but I know that once you’ve figured out and understand what it is that you’re working on, it makes it easier to start writing the actual code. I found it difficult to figure out what should be included in the project and what I would be best suited to work on, especially with the lack of experience with such a big project. Overall, I believe that all forms of this project, the larger and smaller groups, have been highly beneficial for us.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Drew Rakers

[**Drew Rakers**](https://murraystate.instructure.com/courses/1439571/users/5326581)

Nov 5, 2023Nov 5, 2023 at 9:29pm

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I have had a very good experience this semester while taking Advanced Object Oriented Programming. I have learned so much this semester and I believe that almost all of it will be useful to me in the professional world. This class has done a great job trying to simulate the real world and what we might see once we graduate. Almost every topic we talked about was new to me. Abstract classes have become extremely useful and it has changed how I create and design classes. Making reusable code is very core to becoming a good developer. Interfaces also fall under that same category. While they also help with code reusability, interfaces are more adaptable while also keeping similar structure. The library application assignments have bee a struggle, but also very helpful. Writing custom methods that iterate through a list of objects was a big struggle for me in 145. Manually trying to create the algorithms helped me find out the structure of them and noticing patterns. I also looked at performance so each operation did not take too long. When creating the assignment, my knowledge of creating GUI's was also expanded. I was on the front end of the library sort system, so I was working on nothing but GUI's for about a week and a half.  I have used that knowledge for my own project and trying to make a design that would be suitable for a real customer. API's and learning how to connect to them has also been an important part of this class. Other professors have also mentioned that a lot of real life development has to do with working with API's, and I believe knowing how to connect to them will be invaluable. The most important thing we have learned in this class is how the real world works. My first year here at Murray really had be struggling and almost scared of what a day in the life of a engineer might be. This class has helped me feel comfortable in a professional environment and I feel like I can perform in that environment.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Ashen White

[**Ashen White (*He/Him*)**](https://murraystate.instructure.com/courses/1439571/users/5275299)

Nov 8, 2023Nov 8, 2023 at 3am

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I totally agree, my first coding class was such a struggle because organizing the big projects we had to do was not something I knew how to do. I questioned if I was in the right major until this class. Doing group work helped me feel like a valuable member of the team.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Kris Luck

[**Kris Luck**](https://murraystate.instructure.com/courses/1439571/users/5272550)

Nov 5, 2023Nov 5, 2023 at 10:49pm

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Java provided me with a valuable new perspective that extends beyond the confines of my Physics studies. Gaining proficiency in the basics of Object-Oriented Programming, which encompasses abstraction, interfaces, and inheritance, was enlightening. While these concepts may not appear immediately relevant to Physics, they have opened doors to better understanding the intricacies of data analysis and simulation. In the realm of physics research and experimentation, where precise data processing and modeling are fundamental, this newfound knowledge is proving to be invaluable.

The course's exploration of GUIs offered some neat insights into user-friendly design. While GUI creation might not be a standard domain for physicists, the ability to craft intuitive interfaces is pertinent when developing data visualization tools or experimental equipment interfaces. Even if I never create a GUI for academic purposes, the knowledge gained has sparked my interest in expanding my skills for potential recreational programs.

The collaborative group projects is (as many others in this course agree) a standout feature of this course, replicate real-world settings to a significant degree. This experience is a unique opportunity, not commonly found in other classes, and it reinforces the importance of teamwork and effective communication, skills that are highly transferable and applicable in both academic and professional contexts.

Mainly programming in Python and C++ prior to this course, I was initially intimidated by the syntax of Java (still am in some cases). Java compiles so much quicker, especially when compared to Python. When working on Polymer research with a faulty in the Physics department, our simulation (written in Python) to generate our roughly 60,000 structures to analyze take 10 -12 hours to fully run. I have a feeling that knowing Java will definitely come in handy when wanting faster, more efficient code.

In summary, despite the initial mismatch between Java, OOP, and my field of Physics, this course has provided me with a valuable toolbox of technical skills and a deeper understanding of programming concepts. Furthermore, it has cultivated my ability to work effectively in teams, broadening my horizons and strengthening my skill set, which will undoubtedly prove beneficial in various aspects of my academic and professional life.

Edited by [Kris Luck](https://murraystate.instructure.com/courses/1439571/users/5272550) on Nov 5, 2023 at 10:50pm

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Caleb Julian

[**Caleb Julian**](https://murraystate.instructure.com/courses/1439571/users/5304214)

Nov 5, 2023Nov 5, 2023 at 11:58pm

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The biggest challenge in this class for me has been trying to figure out the best way to write code when working in a group. At first I assumed that the code I wrote would be easily understandable, and that I would be able to quickly understand the contents and structure of others code. However, I've learned that it's much more difficult than I imagined, and it takes good documentation and communication with the entire team for code to be written efficiently and in a way that the whole group understands.

I most enjoyed learning about creating graphical user interfaces and working with Swing. I still need to work a bit on creating a more organized and neat layout though. The graphical user interfaces that I've created at the moment aren't the most user friendly, but hopefully I'll be able to improve on that over time. Learning about interfaces and abstract classes was very helpful as well. The concept of those along with a few other object oriented programming principles were a little difficult for me to grasp at first for some reason. After working with it for a bit, though, it seems a lot simpler to me now. Working on the book sorting tool was especially helpful for learning how to use and integrate those features into what I was used to writing. It helped me to figure out better ways to structure my code and add better and more understandable documentation so that others can easily read the code and modify it. The project also helped with learning how to communicate and work with potential employers. Also, getting to work with Java more and learning more about what makes it unique has allowed me to see more of the benefits of Java, along with the downsides compared to other programming languages.

Edited by [Caleb Julian](https://murraystate.instructure.com/courses/1439571/users/5304214) on Nov 6, 2023 at 12:17pm

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Ashen White

[**Ashen White (*He/Him*)**](https://murraystate.instructure.com/courses/1439571/users/5275299)

Nov 8, 2023Nov 8, 2023 at 3:02am

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That's a good point, I always forgot to add comments and would always do it last step before this class, when I finally got why commenting is so necessary. It's something I do alongside coding now.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Jaxon Elwell

[**Jaxon Elwell**](https://murraystate.instructure.com/courses/1439571/users/5253580)

Nov 6, 2023Nov 6, 2023 at 4:41pm

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     After a year's absence from computer science I have found this course to be a welcome refresher to many cs principles. During this course I have learned and gotten refreshers on important concepts such as abstraction, APIs, GUIs, multithreading, and databases. This course has been my first introduction to agile development, and in general, group projects within CSC. From my limited experience with agile development, I think it is an interesting approach to development compared to waterfall, which is what I am used to.   
     I have found the use of agile development techniques in this course to be very helpful as it has taught me how much I need to improve my communication skills within a team. I can write documentation and comments all day, but discussing ideas and dividing up work within a team setting is a completely different beast. Some of the most valuable things I have learned in this course have come from collaboration. Other students have shared resources that I have not heard of used before, such as Notion or Figma, and explained concepts that I did not originally understand.  
      After a year break from an academic setting I have found my greatest challenges to be time management and staying organized. I constantly forget to write down due dates in my calendar or realize I left myself almost no time to begin working on something. By working in a group setting I have found that I am forced to get back on top of things, which has been a tremendous help—but I still have a bit to go before I’m completely back on top of things.  
     This course has also helped me get more experience with GitHub. I had previous experience with GitHub from CSC 415, but all we learned was how to clone a repository and that was about it. For our current project we have been using GitHub to help with version control and it has taught me a lot about how to use and apply GitHub.

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[Collapse Subdiscussion](https://murraystate.instructure.com/courses/1439571/discussion_topics/4485317)Ashen White

[**Ashen White (*He/Him*)**](https://murraystate.instructure.com/courses/1439571/users/5275299)

Nov 8, 2023Nov 8, 2023 at 2:50am

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Overall, the most valuable part of this class has been gaining confidence in coding. I learned many techniques, but what I really learned was that I know more than I thought I did, and the difficulty in coding comes from its application.

Coding seemed complex, but many techniques made it simpler. At first I didn't understand why abstract classes and interfaces would be useful. How can more classes make the overall code simpler? But through practice, I realized that these can provide structure to code that otherwise spirals into complexity. Parts of coding such as graphics always intimidated me, and though I'm not sure I would do well on a quiz of these topics at the moment, I think I learned the power of using resources to help with things that are outside of my comfort zone.

Much of my confidence came from the parts of class that weren't based on learning new techniques for code. Working on teams helped me realize that many of the problems I face when coding go away when I have other people helping me, such as problem solving how to make something happen or unfamiliarity with a section of a project. When new problems I didn't anticipate arose, such as organizing the split up of code or communicating solutions between teams, rather than making me feel less confident, my ability to help solve them boosted my confidence that I could be a valuable team member. Things like parallel programming were scary to me at first, because I doubted my ability to code well or help others, but in hindsight it was the first of many activities that showed me that I am capable of these things. The debates also helped me, as talking about things like encapsulation and inheritance or api development can feel daunting until I listen to others share their thoughts, and help fill in gaps.

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