

CS 472 Survey Responses from Students

Announcements

- Lab assignments
 - A few of you had challenges in the testing lab (python)
 - Last semester I had 70 students and all managed to do the labs
 - If you have failed to find time to do the labs, the project is likely going to be worse and this will be problem for your teammates.
- CI lab is due 10/03/2023
- Design Portfolio I is due 10/10/2023
- Weekly group meetings
 - <https://docs.google.com/document/d/1bq32N9LfLpy4ogQ7UOonJxeK8di6-GyuSPCGBUecLoE/edit>

“People-related factors tend to be the greatest challenges—not technology.”

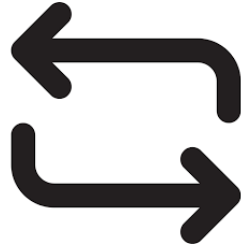
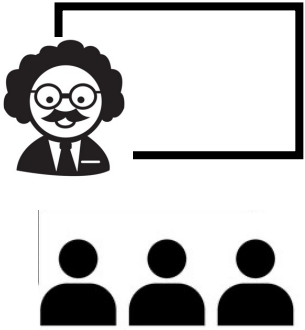
George Spafford,
Senior Director Analyst
at Gartner

- Teaming is a core component in practically all professional software engineering careers
- It's best to be taught this skill before you get into the field.
- Freeriders usually bring stress and more work to the hardworking teammates
- Team success depends on many factors:
 - Good-faith participation
 - Effective communication
 - Equitable contributions

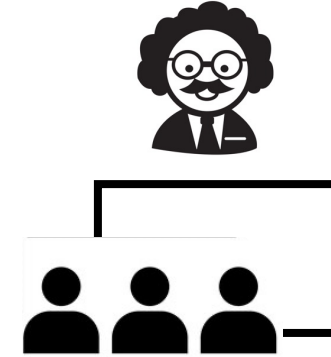
Survey motivation

1. Learn from my mistakes

During the semester



After the semester



2. Identify students teamwork challenges



SDD prject teams



teamwork interaction
complaints

Survey preparation



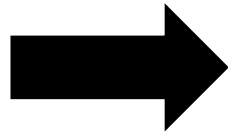
Software Development
Project groups



Survey

- A total of 15 open and closed ended optional questions
- Survey was anticipated to last between 20 – 30 minutes
- Respondents were asked to keep anonymous
- Survey was open for one month

Survey responses



19 of 70 students
27% response rate



7/7 project teams
represented

Three survey sections

1. Background information
2. What makes teams successful
3. Learning new technologies

Survey Analysis

- 4/15 question were multiple choice closed and
- 11/15 questions were open-ended questions.

card-sorting: from text to themes

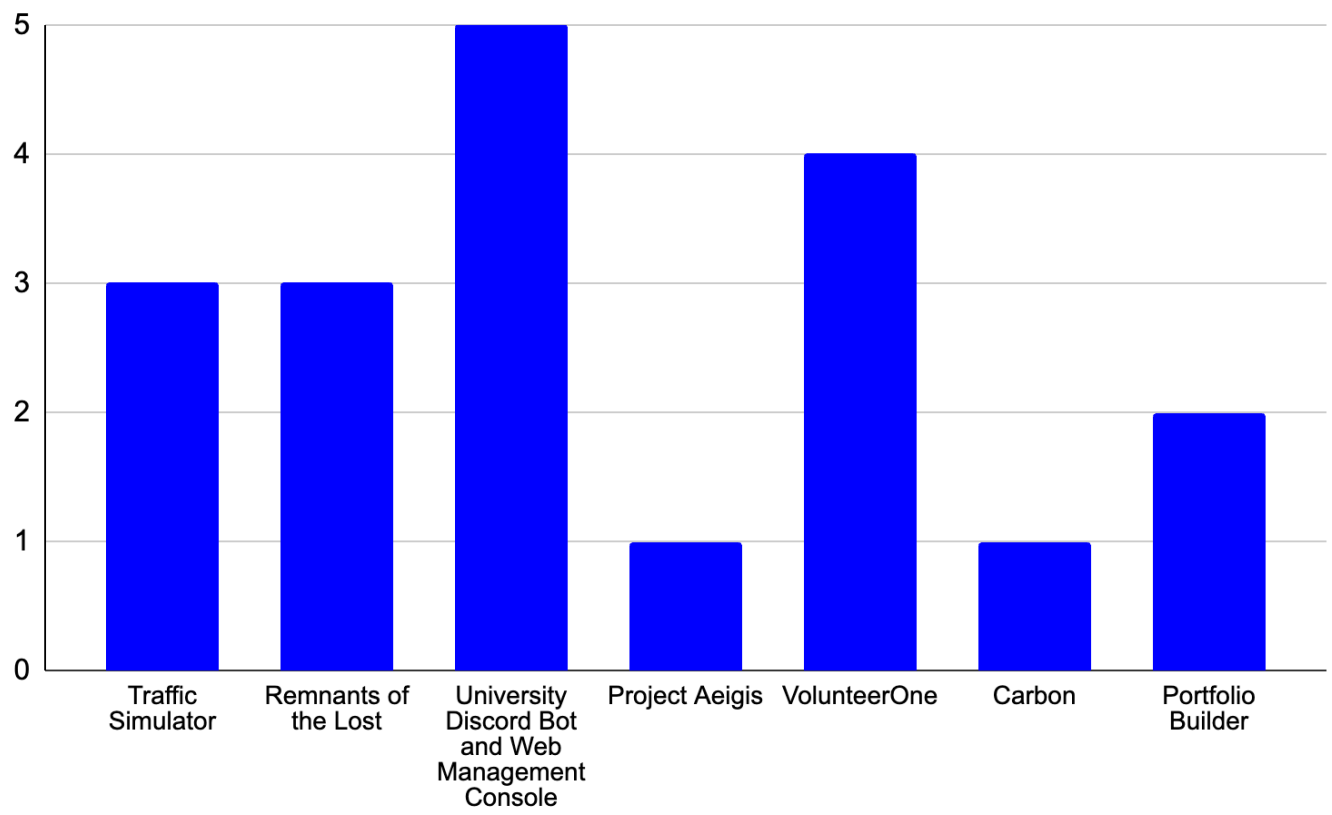


open-ended questions



Survey Results - Background

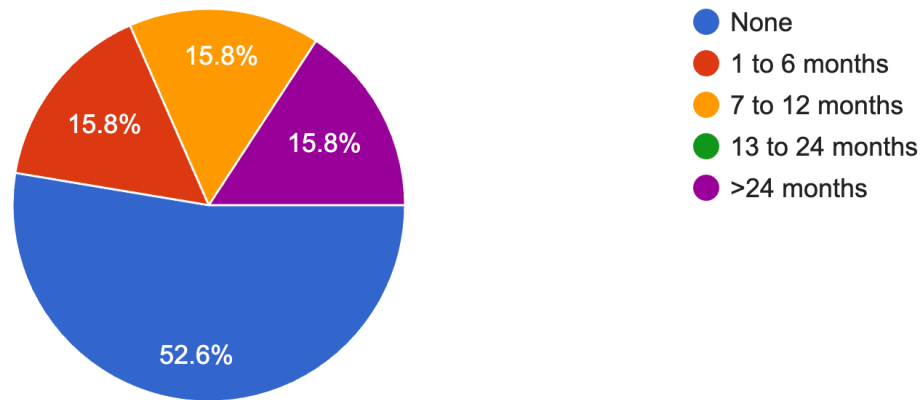
Qn.1: Kindly select the of your team project name.



Survey Results - Background

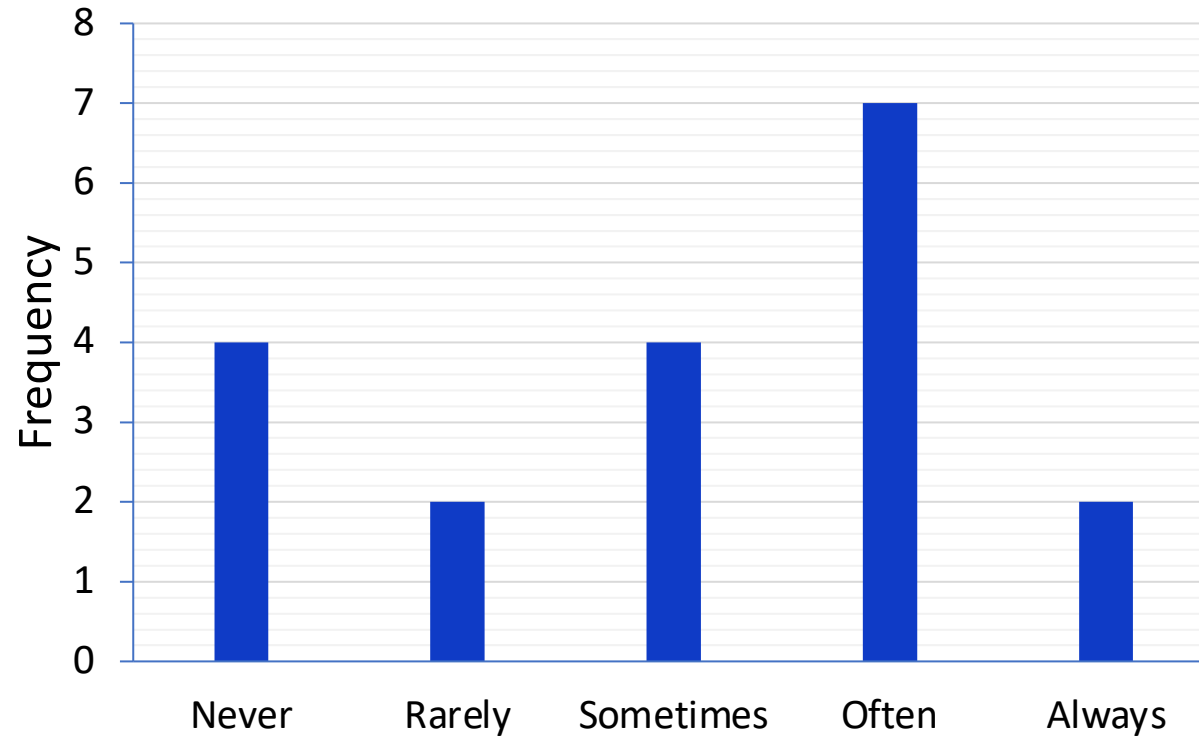
Qn.2: How many months of industry software development experience did you have before the beginning the class 472:

19 responses



Survey Results – Team management

Qn3. How often were you involved in leadership roles?



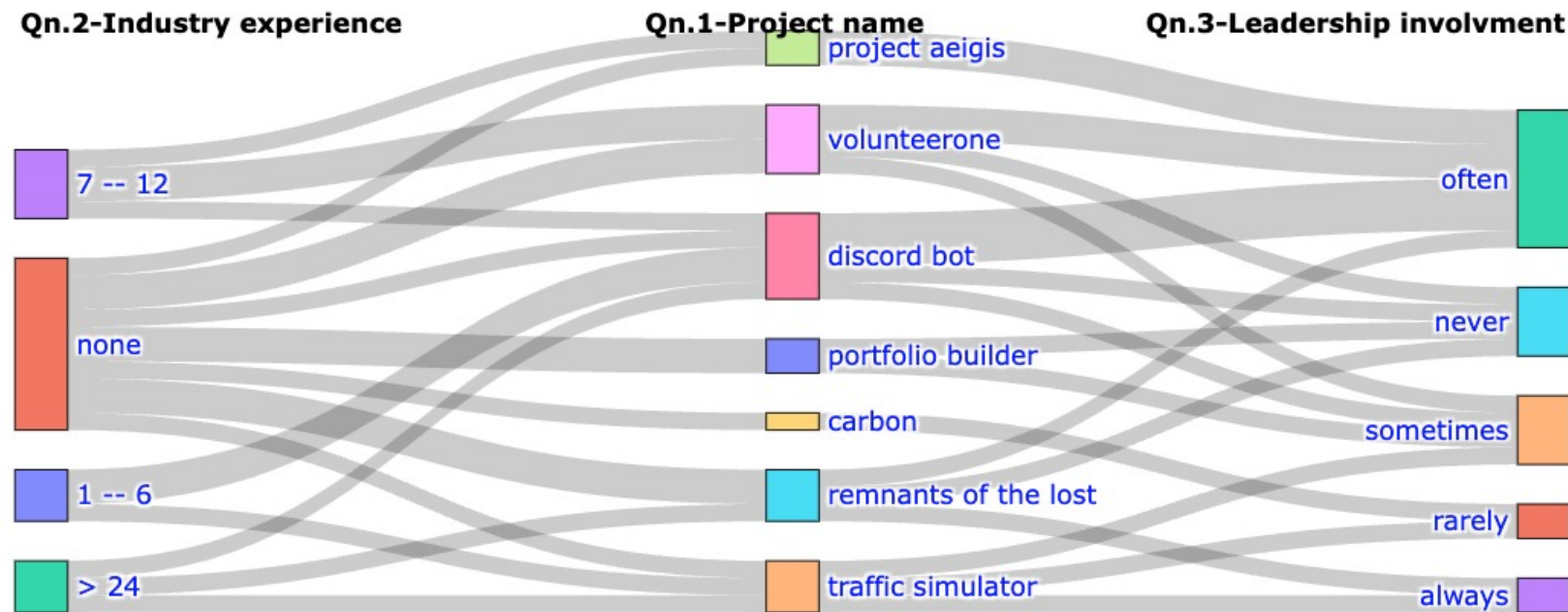
Survey Results – Team management

Multiple choice questions

Qn.1: Kindly select your team project name.

Qn.2: How many months of industry software development experience did you have?

Qn.3: How often were you involved in leadership roles during the project?

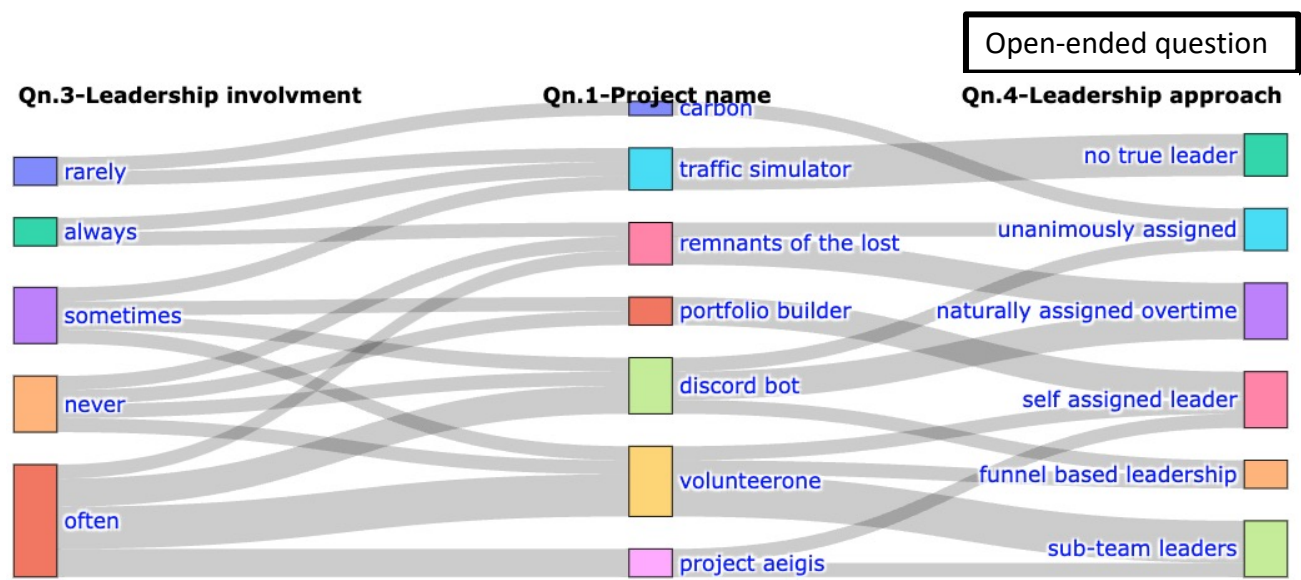


Survey Results – Team management

Qn.1: Kindly select the of your team project name.

Qn.3. How often were you involved in leadership roles during the project?

Qn.4 Could you describe your team’s leadership approach?



Theme	Description
No true leader	everyone did their own portion of work
Naturally assigned overtime	The leader was naturally assigned over time
Unanimously assigned	The person with the most experience was chosen to lead the group
Sub-team leaders	
Self assigned leader	The leader was self assigned at the beginning of the project
Funnel based leadership	The members priorities were focused at the level of vision, output goals, and criteria.

Survey Results – Team management

[R16]. **Sub-team leaders.** Our team split into two groups, a backend and frontend. each with a group leader who managed that portion of the project.



[R11]. **Unanimously assigned.** [...] was unanimously assigned to [...] because he was the only one with the work experience to software industry. With his knowledge, he was able to guide us through the usual process of how software development goes. He was able to help us set up the planning stage and the tech stack. Decisions were usually made through unanimous voting but sometimes, we try to choose whatever's the best interest for the group.



[R2]. **Naturally assigned overtime.** We attempted to allow anyone to step up and take on any task. We had no centralized leadership, but some people didn't step up to any tasks so a centralized leadership formed naturally from a lack of participation by few.



[R1]. **No true leader.** Equality - everyone does their own portion of work. There would be times of leadership, but after people would collaborate without a true leader.



Open-ended question

Qn.4-Leadership approach

no true leader

unanimously assigned

naturally assigned overtime

self assigned leader

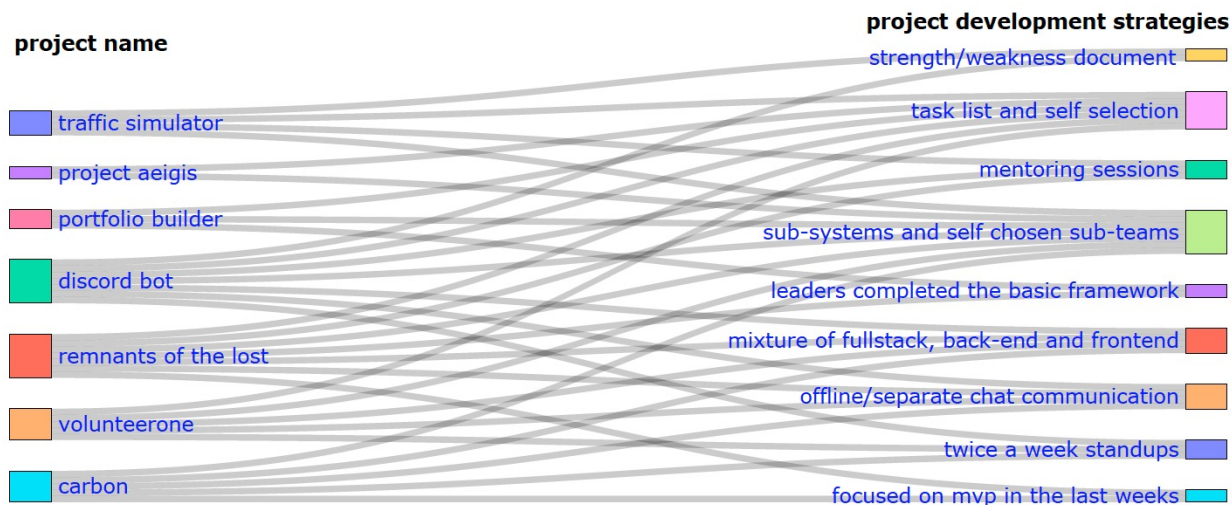
funnel based leadership

sub-team leaders

Survey Results – Team management

Qn.1: Kindly select the of your team project name.

Qn.5: Briefly describe the strategies your group employed to manage the contributions to the project.



Theme	Description
Sub-systems and self chosen sub-teams	We divided the project into sections and allowed each member to self select the sub-project
Task list and self selection	We created tasks and team members self selected what they wanted to work on
Strength/weakness document	We had a document that stated our interests and our strengths/weaknesses regarding our experience with development.
Twice a week stand-ups	Sub-system meeting one day and all members meeting another day to claim tasks
Mixture of full stack, back-end and frontend	Majority of the group members contributed both in the backend and front end to learn more.
Mentoring sessions	Experienced team members mentored other mates on new technologies
Leaders completed the basic framework	Our team is led by the leader to complete the basic framework, and then the members complete each component.
Offline/separate chat communication	Members working on related tasks had a lot of offline communication.
Focused on MVP in the last weeks	In the last weeks we created a spreadsheet with our remaining tasks to get to a Minimum Viable Product and assigned ourselves those.

Survey Results – Team management

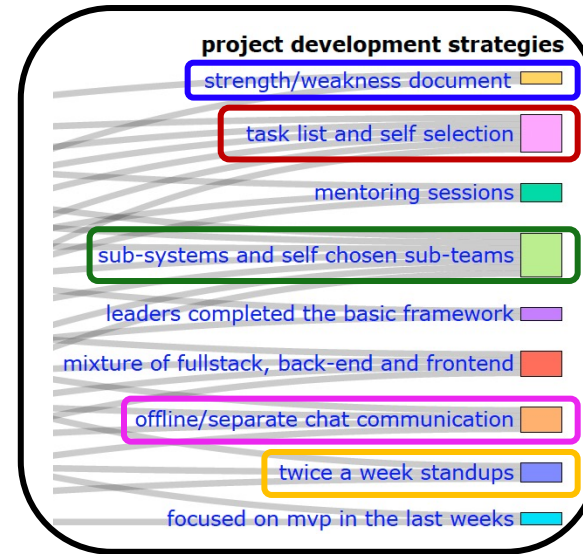
[R5]. **Strengths/weaknesses.** We had a document that stated our interests and our strengths/weaknesses regarding our experience with development. Many of us wanted to have experience with certain things we had never used before. We then spent time creating tasks on a Notion page and people claimed what tasks they were interested in. [...]



[R9]. **Task list and self selection.** For the backend, i created a list of tasks to complete on github issues. Then delegated tasks based on what my members wanted to do. During each meeting we check the progress and delegate more tasks.



[R5]. **Twice a week stand-ups.** We would have weekly stand ups twice a week to get an idea of peoples blockers and what tasks are still needed to be done. This time we would claim tasks or allocate tasks. [...] It seemed that our interests were split in half and we all worked together to allocate tasks according to need based status. [...]



[R1]. **Sub-systems and self chosen sub-teams.** We divided our group into self-chosen sub groups. We divided the project into sections and allowed each member to choose where they wanted to go. Thankfully, experienced members knew that they should target the most complex sections while also incorporating less experienced members [...]



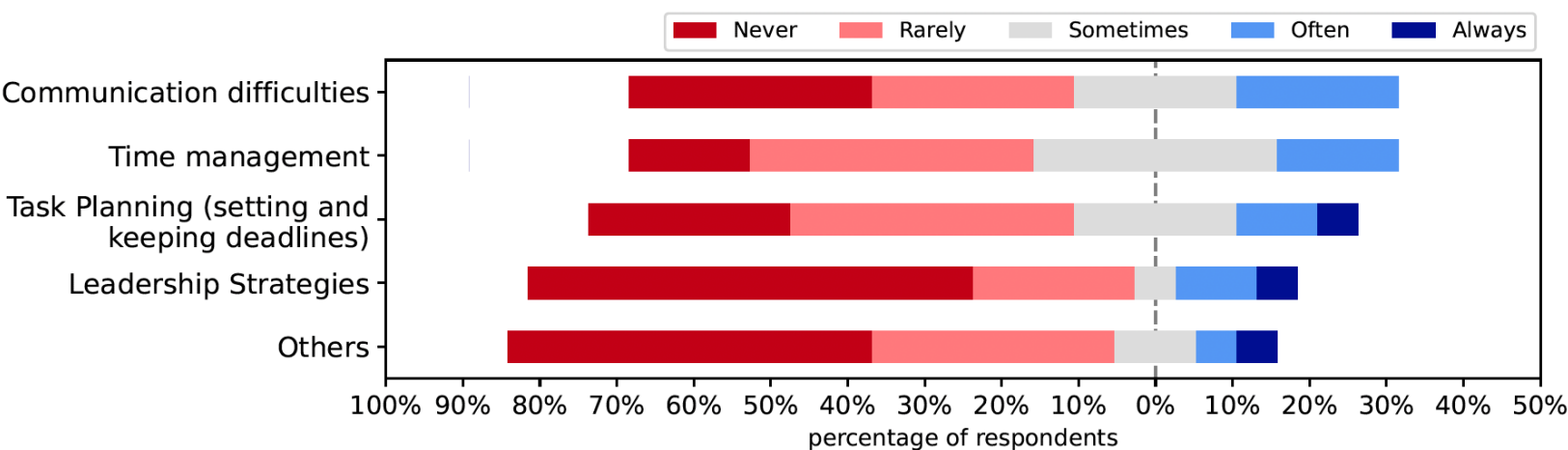
[R16]. **Offline/separate chat communication.**[...] Aside from this, we also had a lot of offline communication regarding the tasks we were working on. During the sub-team meetings, we discussed how to split up tasks and figure out what to work on, then we spent the full meetings discussing larger project deadlines, frontend/backend integration, and current progress of the project. [...]



Survey Results – Team management

Qn.6: Please rank the following challenges that could have impeded effective teamwork.

Qn.7: If your ranking for "Others" in Qn.7 above was 4 or 5, kindly provide us what it represents.



[R2]. **Others** -- People simply not doing work. We only had about half of our group contribute anything meaningful to the project. The half of the group that were participating had not authority to make the students participate and continue to remain difficult to work with for the even when they were **mentioned by the professor in our group chat**.



[R14]. **Others** -- frontend and backend teams should have collaborated more. Maybe instead of separating the frontend and backend completely, some members should have been in both to better understand the needs of each group that the other group could provide.




[R16]. **Time management** -- Sometimes some team members cannot join the meeting because they do not have time, So I think time management will be a challenge than other reasons.




Survey Results – Team management


Qn.8: Briefly describe how you would plan to avoid the challenges if you were to do the project again. This information will help the teams doing the project in future classes.




[R6]. One suggestion would be to all be on top of things and start as soon as you can to get to know your group members and their strengths and weaknesses so that we can all help each other. My team and I made very sure that we did that.




[R3]. I would recommend in person meetings/ hybrid more than 100% online meetings.



[R16]. [...] to avoid challenges faced, it is important to just plan out everything you need from the beginning and work on a minimum viable product (the bare bones to make what you want work). Our team tried to do this in our separate teams, but we waited very long to do the integration. It would have gone much smoother if we had deployed our server from the beginning and set up the actions pipeline to publish our code from the repo. [...]



[R2]. We would have established a much, much better way of holding people accountable for work from the first week we began the group. We tried to be lenient with people at the start because learning a new development platform [...] can be difficult; however, the level that the lack of participation reached in the last months was insurmountable. For DP1, we should have kept a much stricter log of the work that people were and weren't doing.



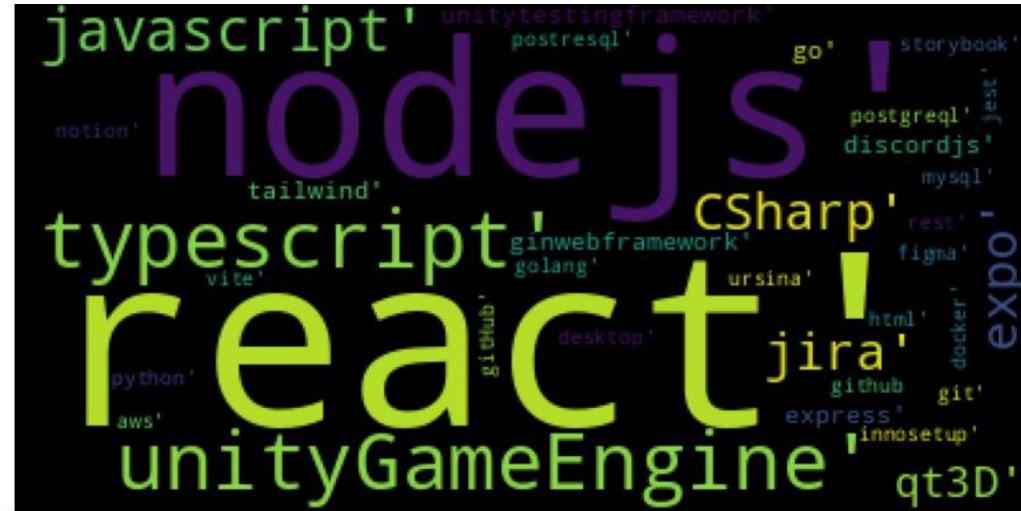
[R19]. We would have worked on unit testing much earlier as we didn't realize how time consuming it would've been

Survey Results – Learning New Technology

Qn.9: Please list the new technologies your team used to implement the project.

Qn.10: Please pick one or more technologies and briefly describe how the technology was used in your team project.

[R12]. **React** was our main language in the frontend and we used it to make the webapp and it was super simple to set up and do; especially since we have had some people on our team with previous experience who could guide people stuck.



[R16]. **Docker** as a container made it quite easy to set up the project for multiple machines. Everything was put together, so whichever person was running it on their own machine would have the exact same results as someone else running it on theirs.



[R12]. **Go** was used for programming the backend API. It was the interface that digested http requests from the frontend mobile client and made necessary calls to the database.



[R5]. **Unity** packages used to ensure a reduction in repeated work. For example, I had initially found a Unity package which virtually created a Main Menu for us. This would allow us to focus on more core/backend components of game development. (In this instance, possibly due to a lack of communication, the UI team went and spent time creating their own modified Main Menu).

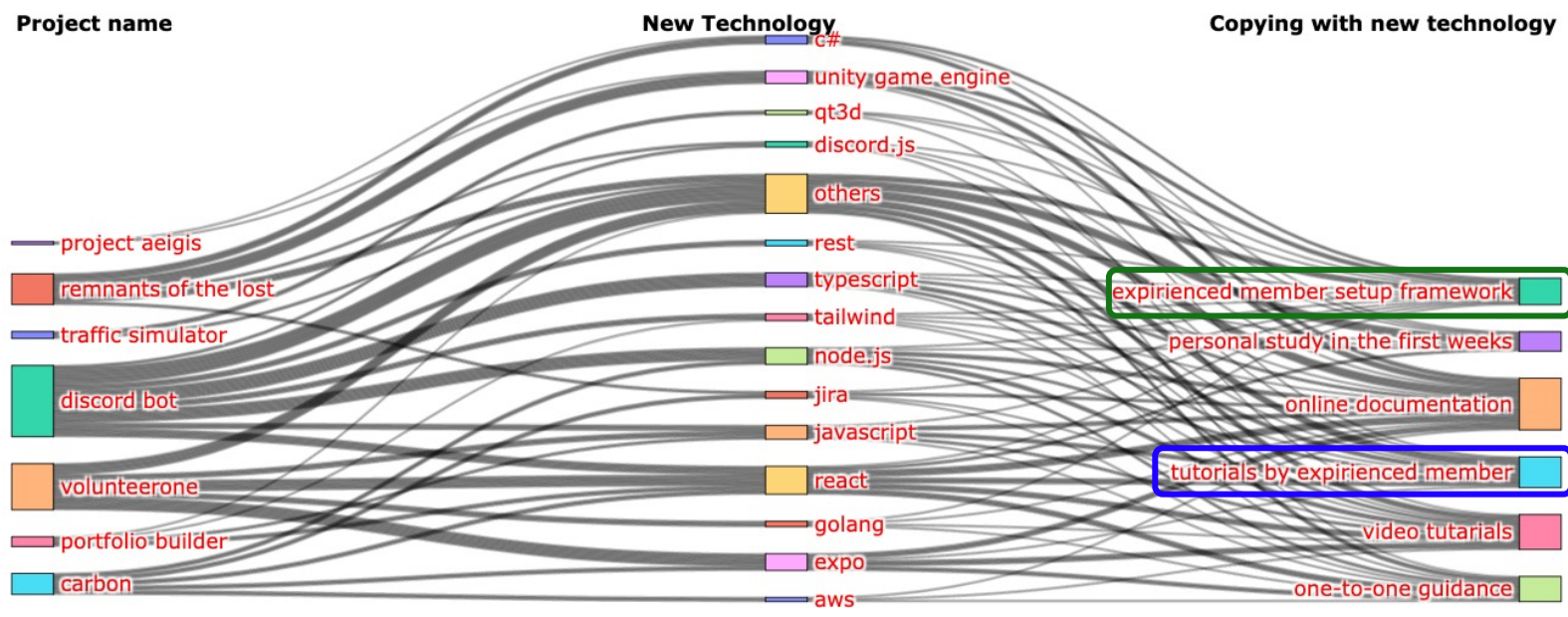


[R13]. **Typescript** was used for the entirety of the project. [...]. This technology was used to create both the front end portion and back end portion of the project. This language enabled everything we needed, including the usage of a database and discord.js, to complete the project to where we did.



Survey Results – Learning New Technology

Qn.11: As a follow-up of Qn.9, describe how your team and you individually planned and learned to use the technologies.



[R5]. **Experienced member setup the framework.** I looked up and implemented most if not all of these plugins and packages. Once setup, the team was able to select a button to determine if they wanted to generate code coverage during their testing or not. Certain team members did display some initiative and found useful tools and shortcuts when creating Unity tests however.



[R7]. **Tutorials by experienced member.** An experienced member of our team recorded tutorials for team members to use to get started with unity. Additional tutorials online were shared to help everyone get up to speed. Individually, I followed the tutorials provided to learn the basics of unity to get used to using the engine before we started work on the group project.



Weekly Servey

Weekly tasks questions, answered with checkboxes in response to This week I have:

Q1: ☐ Designed a usecase (or a portion of one) ☐ Fixed a bug in the system

☐ Implemented a usecase (or a portion of one) ☐ Written black-box tests

☐ Written automated tests ☐ Other: _____

Q2: ☐ Completed all my assigned tasks ☐ Completed some of my assigned tasks ☐ Asked a teammate for help completing my tasks ☐ Helped a teammate complete a portion of their tasks

Q3: ☐ Met live with my team ☐ Participated in checkins with my team

☐ Opened a pull request and asked my team for feedback on my code ☐ Asked my team for feedback on my non-code work ☐ Reviewed technical artifacts for my teammates

Planning questions, answered with a five-point Likert scale: ☐ **Much less** ☐ **Less**

☐ **About as much as** ☐ **More** ☐ **Much more**

Q4: This week, I have gotten done ___ than I think I should have

Q5: This week, my team overall has gotten done ___ than I think we should have

Q6: Next week, I intend to get done ___ than I did this week

Collaboration satisfaction questions, answered with a five-point Likert scale:

☐ **Strongly disagree** ☐ **Disagree** ☐ **Neither agree nor disagree** ☐ **Agree**

☐ **Strongly agree**

Q7: This week, I knew what I needed to get done

Q8: Overall, I think that everyone has been contributing adequately to the success of the project

Q9: In our team we relied on each other to get the job done

Q10: Team members kept information to themselves that should be shared with others

Q11: I am satisfied with the performance of my team

Q12: We have completed the tasks this week in a way we all agreed upon

Miscellaneous questions:

Q13: My progress this week has been impeded by:

☐ Difficulties with technologies or course materials ☐ Demands of other classes

☐ Other personal responsibilities or distractions ☐ Teammates who didn't complete their responsibilities ☐ Communication difficulties with my teammates

☐ Difficulty scheduling tasks so that I wasn't waiting for my team to complete their work ☐ Other: _____ ☐ None

Q14: How do you feel about your team's collaboration process in this project?