

# Participant 9

## SUMMARY KEYWORDS

project, developers, quality, team, improved, issues, work, client, software, team members, users, behaviour, agree, notebook, understand, machine learning, guiding, code, phase, mistakes

## SPEAKERS

Researcher

Participant 9

**Researcher 00:17**

Good morning. Good morning, Participant 9. How are you?

**Participant 9 00:21**

Good. Start turning, turning up cameras just fine.

**Researcher 00:26**

Yeah, I it was, it was closed, I close it when I'm not using it. Good morning again to you or good afternoon, I think it's afternoon. And it's Sunday, I'd like to thank you for the opportunity to do the interview, and especially in a Sunday, I really appreciate Thank you. So I'd like to start and go ahead with the interview. And perhaps we could start with a brief introduction. Can you introduce yourself manually your education, your experience, just briefly, so we get to know who you are?

**Participant 9 01:08**

Yeah, sure. So I have a Bachelor's of Engineering and Computer Engineering, from a public University, in India. And like, by the end of my education, I was like, mostly interested into machine learning. So machine learning is like a very huge domain. And like most famous products use it and in demand as of now. And my interest was to enter machine learning, I started with an implementation of a research paper. So it's like a path that no one chooses, but I actually had an idea in mind to implement and then found out like, it was being in research as of now. So I started with it, and then joined the company, [deleted to preserve the researcher/participant anonymity]. So my journey started as a machine learning engineer, but I have been into software development as well and as well as full stack development. Because, say, most of the applications nowadays that you do have a machine learning core, FUD gate, some of the recommendation engine, yeah, obviously machine learning core for that. But still, you only have API to access it or you need to have a web UI to access it and you need to have a back end business logic system. So, as like my professional journey started, I found out like the machine learning is not critically important, but it is it is like I can say it is not the complete part of the whole project. It is still 50% of the project and 50% of the 50% is thrashed by business, full stack and other things like unit provide a user interface and business logic in the project. So this time, I also got involved into software engineering. And like around a year or two, I think I have one year like I got promoted to a senior software engineer. And currently I'm reading projects here. So the next promotion

came around a few months back. And currently I am a Technical Lead at my workplace. But this is how the wage journey went through. And my main tech stack is Python. But I have been like in two different tech stacks as well, depending on the project requirements. Okay, fantastic.

**Researcher** 03:09

Well done. That's a big achievement in such a short period. We will talk a little bit about your team now, which will be the topic of our discussion. Are you using Agile or some sort of Agile, Scrum?

**Participant 9** 03:28

We are using the scrum mechanism in Agile specifically, so we are using the JIRA, to sprint planning and all those kind of things. But there is an issue, we will discuss the history, I think, right. But currently, we are following the scrum mechanism. And the team size is roughly around 10 people in a single project. So I'm currently working on four different projects. The second one is mostly into development phase, and within development, and the first one is where I'm leading a project.

**Researcher** 03:58

Great. You said the team is around 10 people and how long they have been working together?

**Participant 9** 04:08

As of since the past six months. Okay.

**Researcher** 04:11

Both. Sorry, because you're leading two teams. So both teams have been working together for six months.

**Participant 9** 04:19

Now, the second project that occurred, right, it has been like since one and a half years, but I have been recently shifted. So basically, it's like, I have been leading the second project for only two months. The previous template wasn't like, it's like github.com. It is the company didn't find it feasible, because it was like the project was around the delivery phase. And there were still around 10 to 12 different issues in the code this and that was logically not saying that. So that is the reason.

**Researcher** 04:51

Okay, so what type of software you developed and you said machine learning.

**Participant 9** 04:57

So yeah, the two projects at least what before sweat is currently based on cryptocurrency and is an algorithmic trading platform. So, basically we are we are providing a service where users can use algorithms to trading cryptocurrencies. And that is what we are building it from scratch. So the everything that the wallets and order books and everything is being built from scratch. And the second one is like a client project that is not an in house one. The second project is about energy market entity. So it's like a stock market, but energy market is something where electricity is being returned or power is being traded. So, we have developed a machine learning system which could predict right what

should we talk to our prize for executing trades of the next so that is like are based on machine learning, but yeah, it is and consistently also the front end back end.

**Researcher 05:49**

These are exciting project you must have fun.

**Participant 9 05:56**

Like I learn a lot from these project, because taught very different domains. Getting it from scratch is not easy thing. So we get to learn a lot from this. Very fun.

**Researcher 06:04**

Okay, we'll be talking about quality and, and, and the rest of the interview. And I like to define it because the definition can varies from a team to another. And even in some instances, it can be controversial. So let's work with a definition and see how we go. We use ISO standard definition. So I'll read it to you. And I'll give you an opportunity to comment on it okay. So, the definition says software quality is the degree to which the system satisfies the stated and implied needs of its various stakeholders and as provide value. The ISO standard also proposed some non functional characteristics that the software should adhere to some of them are performance, compatibility, usability, reliability, security, maintainability and portability. So this is how we define it. First, do you agree with it or disagree with it, then would you like to comment on it?

**Participant 9 07:19**

Obviously, I would agree. So ties are almost like it covers all the aspects of software quality, right, from the perspective of maintainability to the perspective of usability. So when you're envelopment phase, it comes to maintainability and when we are releasing the project, it comes to usability. So while all the parts of the all the aspects of the software of the software are being called in the ISO standards, and I think like when we when it comes to quality read, what I have found, for current companies like what they do is they focus only on the core maintainability and usability, other things like security and privacy concerns and reliability and performance benefits, those are things are not being focused on by the companies. And the main reason, which I have found, and I'll read is also I think of the product owner, that is the client, he is not much interested into this stuff, what he wants is a working product. And that is that is for ease of use for his users is not focusing on security and reliability and performance benefits.

**Researcher 08:27**

It is a common problem in Agile teams, because the customer and the product owner doesn't see these non functional quality, so it doesn't fit within his objective or he or she thinks that are not important and I agree with you. Yeah, that's a problem. Yeah.

**Participant 9 08:45**

That is like the most comforting I have found, because it's like saying we are following a child, but what happens is that a product on our site or our client, he is not actually known to what Agile is and how it actually works, he is also not on to what are the aspects that should be taken in mind when developing a software system he just has an idea and he went to implement it and there are there are times when he is his budget might not be in the range or also like he wants it as fast as possible to be delivered. And I have also made a LinkedIn post on it like this was like very like template into me a few days back that what actually happened like in the fast paced working environment like nowadays all the companies like we are a fast paced working we have a fast paced environment, what happens is they are cutting off some things and focusing only one part of the things right. And this is never an easy thing or it is not a feasible thing to do. Because what happens if you are not taking security seriously and after the software is released, there might be security bugs and issues and there might be vulnerabilities which actually happened in in one of our clients that we work with. So it was a Bitcoin Casino. So you might understand like What gamblers do there? And that? And what? The hacker found a vulnerability, but we were trying to trap the person and get that old fifth reason. But these are these are the issues that everyone needs to keep in mind. But the client should be interested in those things as well.

**Researcher 10:18**

Yeah, I agree. That's a problem or remained in Scrum and Agile for a while. But that's problem existed for a long time, even before Agile. Yeah. Yeah. So thanks for that. How do you do to assure quality? What processes do you have in place to assure quality?

**Participant 9 10:39**

So the first thing is when we are currently in the development phase, right? Planning is something that we're sort of like planning is something where we want to document the work. So we do not consider things like what should be done, it is something that this course should be matter. So coming to the development phase of SDLC, the first and foremost to what we answer is, if you're following a particular technology, then all the coding standards of the technology are being followed. Now, how does this help us, you might have heard of the term technical debt. So this ensures that there is no technical debt remaining and, and hence, the code is extensible as far as maintainable. And the second thing is, we follow the solid design principles, you might have heard of them solid design principles. So it is something that one must follow in order to create an extensible software, which is easy to manage later, right. So it's like if you want to add a new feature in the project, it shouldn't be too much time consuming, because you have already for a solid design principles. This is something which comes to the development phase, and our QA team check that all these things are followed right as a team that it is my duty to review the PRs and stuff. So it is my duty to ensure that coding, data standards and design principles are being followed. And when it comes to deploying the things that we want, we have a security test being conducted prior to API keys and such things around to be committed or pushed to version control systems and other things. We also ensure that the API calls are unavoidable. Basically, like most of the frameworks, medicalising, now Django rest framework and such things the answer such things don't care CSRF tokens and technical terms, but they ensure that the security concerns are being kept in mind when you are developing the software. And the third thing when it comes to developing user interface, the most focus on our tablet focuses user experience of the customer. So

that comes to usability part, the UI must be as simple as possible. So as I said, we are currently working on this cryptocurrency trading platform using algorithms. So we have we have tried to make it as simple as possible so that you can easily understand by looking at the UI, like what goes where, because there are too many things in crypto, and users might not be aware of all the things. So this is something that is like three different things that we've mostly focused on. Apart from that, the most important aspect that the senior is, including me and my seniors focus on is the performance of the system. So when we are developing such complex and use systems that we have a lot of data pipelines involved data is being streamed from one place and being used at other places and such and so forth. So it comes into mind about the scaling and fault tolerance issues that we might face with the system. So when we are using a particular technology, we have to decide like if this technology will be scalable and future or not, there might be too many alternatives available for a single task, right? So when choosing which alternative to use, we consider such aspects in mind that we'll discover and feature or not. And if it is scalable, then how much that is a question. So these are like all sorts of things that we keep in mind when certain software is an architecture.

**Researcher 13:56**

Okay, great, fantastic, very thorough approach to quality. I forgot to ask something about the team. You mentioned that you have a QA team, is it part of the scrum team, the development team? Or are you cross functional or only developers? Are you self-managed?

**Participant 9 14:16**

No, we are cross functional QA team is part of the team. So basically, in JIRA two, like there might be a single project to go right. But what we have to follow is we have two projects work for the same project. The first one is for development. The second one is for QA. Because what happens is like the ticket is more from in progress to QA internal developers more superior might take the ticket from there. But still, we need to track the performance of QA developers as well, like how many tickets they're sold, what are they suspected or found and all this kind of thing? So we maintain two different boards when especially for terminals for developers. We are self managed to great extent. We make our development and architectural decisions and the client choose the directions of their products.

**Researcher 14:51**

Okay, thank you. We will move to the core aspect of the interview which the questions basically I've sent you in the email Thanks for providing the answers. I will share with you my assessment of your team. I know you're working on two teams, so the answer you provide that wish one, the new team or the old team based on the old team or the new team.

**Participant 9 15:19**

So, like, it depends on the project. So basically, when I answered the questions I kept in mind one project. My current project not the second one.

**Researcher 15:37**

Okay, great. That's, that's good to know, will keep working with this project in your answers. So when I look at the answer, my assessment is your work environment is relatively in a safe work environments. And I will, I will explain what do we mean by a safe work environment, we don't mean a physical safety, but we mean by safety is a work environment that provide a sense of security from repercussions. So what does it mean is that individuals in the team feel that it's okay to admit mistakes, they feel that it's okay to propose initiative and discuss problems. So within the team, there is a sense of confidence that the team will not embarrass or reject or punish someone for speaking up. So there is a mutual respect trust among the team member. So this is how we define safety. Do you agree with my assessment, that is your work environment is highly safe? Yeah,

**Participant 9 16:46**

I agree on that. And there are like two different examples, the first one is mine itself, like I was working like two years ago, and I was working on a project. The project was always monitoring system. Basically, the oil waves, right, and oil and gas was not only oil, why is the oil and gas mints for the client wanted, he had its IoT system setup. And he wanted us to find animals that are occurring in his system. So there might be things like the presser is certainly increasing or decreasing, depending on certain factors. Also temperature control things and assess things need to keep in mind, right. So this was like a whole project. And we had to use machine learning to find out if the anomaly is. So as you understood, like this project is mostly about experimentation and research, because no such thing has been developed yet. Like at that time, it has been held up now. So it was much less recent research. And we use a tool called notebooks in Python, to basically conduct the analysis research and experimentation phase. So I was working on that tool. And it's like, it's like a simply a diary that you mentioned, but using code. So I was working on the notebook, and it was like, we had a presentation of all the client, we also have, like, demo project showcase of the project progress. So we had to demo current like code was quite messy at that time, because we were experimenting. So, especially my senior, he was actually angry at me, like what is this right, the call actually went smoothly because I was able to explanation of the stuff at what I forgot to wash formatting of the notebook, because the notebook is okay for me, because I'm a technical person, but when we are presenting it to a non technical person, he will find it very hard to understand what has been done in our programme. So, we must have a specific table of contents part and then description of what we are doing summary and observations conclusion and such things, which was missing from the notebook. So, after the call, we actually always ever interrupt or for feedback on how the presentation and he was quite angry, but it was like not that he only got the benefit, we also said like, it was a little messy to call events would because the stakeholders are able to understand what the system was and how the progress has been made. And apart from that, he also gave me such as like, what should I have done, I should have presenting such and so like, also, I was open to feedback. And he also gave me genuine feedbacks on what should have been done. And that is like how we improve in the direct if we do not get feedbacks from the scenarios we never improve. So this is I think of last point. And yeah, it's also safe because it is like you make a mistake and you will be held responsible for everything that you have done. It isn't anything like that. We have a very friendly environment and that sense that he will be addressing or she will be guiding you and leading you giving you true and constructive feedbacks so I can learn.

**Researcher 19:52**

I'm just taking notes because I'd like to follow up in this good example. Thanks for sharing this example. Before I come to this example, I'd like to go back to my assessment regarding the level of safety and in the team. So to what extent do you agree that this is a highly safe work environment? Do you strongly agree? Do you agree? Neutral?

**Participant 9 20:00**

I agree.

**Researcher 20:02**

Fantastic. Yeah, let's go back to this example where you made the mistakes. So, the quality of the code was not up to the client standards or to the senior members than that, why in the first place, the quality of your component or your code was below the standard to start with?

**Participant 9 20:44**

Right. So, this is something that happens mostly when you are conducting research, because say, you can either focus on development or on research like you cannot focus on voting sentiments. So, what we mostly do and also about the feedback that I received the very same day after upon, he mentioned that though, you are having a messy notebook during the whole experiment and research phase, but after you are done with the experiment, what you should do is create a new notebook out of it with everything which is organised as needed, right. So this is something common when you are doing experiments there is like you will be having, you will be creating a mess. There is no other option because everything is like going through your mind. So it's not possible to organise the corpus. But once you are done, you must answer that. Yeah, you have presented it and organised it in, in the best way possible.

**Researcher 21:35**

Yeah, I agree with you. I developed code for many years. And when you experimenting or trying something's your focus is to get it done and working. It's not the quality. And you may feel in the trap of let's keep working this way. And you carry on the substandard quality. It does happen. Yeah. So you said that after the demo, the senior member was you use the word angry. But from your from your description. I didn't get it like he was angry. It was constructive. Is that the right word angry or disappointed?

**Participant 9 22:18**

I think disappointed.

**Researcher 22:21**

Yeah, but it was in a constructive way. This is how I understood it.

**Participant 9 22:24**

As I said the positive was highly feedback. Feedback was really positive. But it is like something that you cannot be smiling and saying things to your developers, right.



**Researcher** 22:36

Yeah. So yeah. So it was constructive and healthy way approach, right. Like, yeah, so. So you said he guided you to avoid this type of mistakes, how he did that?

**Participant 9** 22:54

So basically, he showed me one of his patches to work with as an example. So he showed me the example format on how it was written and how it should be done, and that is how we easily grasp things and learn. If we have an example or two, we can quickly grasp right? What mistakes we can avoid. It's like a self-evaluation, you simply have the examples. And then you have to evaluate yourself like what mistakes you made in your work and correct. So that is how he did it. And then guided me like what he has done and what I have done. Also, he asked me to reformat the notebook and we had a second call, or two days later, where I have shown him and pointed out the structuring and organizing of my notebook.

**Researcher** 23:42

Okay, great. So do you think learning from your senior past experiences has improved your way of developing notebooks? Yeah, how so you change your behaviour you adopted those learning.

**Participant 9** 24:01

So always I always agree that learning from the seniors is the best way to quickly grasp things you can learn but it will take time, right? Yeah, I learned and I'm currently following the way he is coding. And it has this is only like, you work in two phases. The first one is very focused on getting things done. And the second one is when you work on the refactoring part and organising part, well, you write it in a way that is easily presentable, understandable, understandable by the contract.

**Researcher** 24:39

Okay, great. Thank you. I will move to the next item on the email because the first one we already discussed about accepting mistakes so this the second one is about bringing up problems and issues. So it states member of your team can bring up problems and tough issues. So your answer yes, many times, this can be a result of many different things that I have noticed until date. And the most common one was improper training and lack of skills and knowledge. That can also be non technical issues or personnel issues. In other words, within the team with mainly arise because of one attitude or behaviour. Rarely, I have seen that developer also bring issues that are hard to solve, or this issue didn't even pop up in the PM mind at the time of the project planning. So can you elaborate a little bit in this answer? Because it has mixed.

**Participant 9** 25:45

I answered, like, question from three different aspects. The first one being technical, and the second one being behavioural. And the third one is like, when a developer does things which are unexpected. So this is like how I hire how I answer. So it is like coding three different aspects.

**Researcher** 26:03

Okay, can you take me through these three different aspects and explain them to me?



**Participant 9 26:08**

Yeah. So the first one being the improper training and the lack of skills are managed by attract, I hope face this is quite nice, because as we already things we already have to caliber, we have to understand the caliber developer, and this has been happening with me with one or two developers in them, it's like, say, every human being is isn't the same, there might be some different level of working in some different elements. So that was one guy, like he is in that interview. So on part one, it is like he's working on the team. And I have found like, his level of thinking was quite different than the other team members. And that was actually affecting the project's base, the project was getting delayed. And the main issue was like, his background, or was different. He wasn't from a computer background. And still, he was pursuing software development. So that was like the core issue, because he was like, in the core understanding that is required for a computer engineer. And say, we have such developers on the team. But it's not about getting, it's not about like, ignoring them, but for them, it's about training them so that they work out and grow as much as possible. So this is what we did. So basically, what I found was like, whenever I reviewed his PR, his code has certain issues like, it's like, when you when you put a barrier or logic or business logic in the code, you have to think of certain edge cases, which needs to be handled. And that was the part which he was missing, like a core task that was asked him was done. But he was missing the edge cases, because missing those scenarios can cause bugs. So apart from this, there was also declining in code quality, his quality wasn't up to the point. So quality isn't something that improved in just a few days, as I said, I already but the logical thing in Python that always need standard, he needs to get experienced enough to think of such things. So this was like the main issue that I found, like it's only a single example. But I have such few examples in a different project as well. So this is what happens, like when you have a person, right? Who doesn't have enough background knowledge, which is required to work on a project, it happens, it might be missing certain cases, and which in turn creates issues and bugs in the code base. So, what we do in this project and previous project is we coach and give constructive feedback a lot of feedback.

**Researcher 28:51**

So how did you deal with this lack of knowledge that caused a decline in code quality?

**Participant 9 28:58**

So the very first thing that the template does, and my responsibility is set during a meeting with him and and communicating with him right, what kind of things needs to be worked on from his Android engineers to improving and there were, there were such few things. Apart from that when I sat there was also different, like communication skills and confidence level and was highly lacking his confidence level. So it's like, he is given a task he will get it done, but he won't be confident enough that he has done it correctly. It happens and the second thing was communication which is obviously like it might be just because they are like from different culture in India, but that can be worked on right. So I organised a meeting with him and I didn't write what should be done. I also pass these things to my senior like senior management. I informed them like what is happening with this guy, and they asked me to give him a warning of like, if he cannot improve and he will be taken off from this project and put into some Another one. So we obviously have different projects that so it's like they will match a project which matches his caliber, you will be taken out from this one and put in a different one which matches his caliber. So this is what I briefly explained him over the meeting, what should be done, right, which data points that you should be working on. And I also given the time frame of one month, so it's like I'll

be, I'll be evaluating him after a month. And if we see a progress of positive growth, then it's fine. But if you're not so positive, then you will be taken to a different team and a different project. So this is how we worked on and to be really honest, like I just had a call with him two days before. And he has significantly improved a lot in communication in confidence as well as logical thinking. So three aspects, and I think now fine to go with. The software quality is already like, improved it within like five or 10 days by studying all the standards and taking in consideration my feedback. So he's like, progressing, progress is bit slow. But yeah, he's improving.

**Researcher 31:04**

Okay, that's a good example that I'd like to pick on two things is you use the word warning. is what's really a warning? How did you communicate it? Was it in a constructive way? Was it really a warning?

**Participant 9 31:19**

So we always communicate in a constructive way. So I used the word warning, right? But I actually call the intro like, rigor in the call in the meeting, right. And I started with ensuring safety. I always say, it's ok, we all learning. His example is always code like what he has done and what should have been done. And then it's like not such to be speaking, we also give them the chance to speak because it's like, you understand what wrong things a person has done, but you not understand the reason behind it. Right? So you have to listen to him that what? Why is a code quality, so low? Or why is he lacking confidence in such things. So I heard him and he mentioned the essential things like, the confidence level is something that the project is quite complex, to his understanding. So he's lacking confidence. So it's like he will be he will be getting the work done. But it's like, he will get someone has helped to review his work, and let him know yada, yada, it is distant. So this is something that I also listened to him like, why he is making such mistakes. And so it wasn't like an demonstration kind of thing. But it went smoother. Like I said, my observation is he gave the feedback, he said his observations, right. And at the end, towards the end of the meeting, I simply noted down a few points, that is something that he needs to improve on and pick four or five points, and then ask him that, we will be evaluating you after a month. And if the relation results in a positive manner, then you will become part of this project. And if the relation comes in a negative output, then you will be shifted to a different project. This is how it went like it wasn't something like no stress. Like we planned it in a way that the developer doesn't stress or get depressed or it like you understand that? Yeah.

**Researcher 33:03**

I understand it was a healthy conversation. Yes. Yes, I understand. Yeah. Even though you use the word warning, but it was a healthy conversation. I understand. So you in your answer, you discuss another aspect, which is non technical. Can you elaborate a little bit on that?

**Participant 9 33:21**

So attitude levels? Yeah, I can surely. So at times, when we are our team, right? Team members should suit the same like everyone is equally important. It shouldn't be a case like someone is giving someone is gaining more importance or interest as compared to the other divers. That shouldn't be a case. But sometimes, as I said, like we have people from different cultural backgrounds in India. So it might be possible, like there'll be heavier of a person might be different from another area of the continent. And I found that once. Just a simple case, in my experience, but I found it when the third

person was more or less like he was giving orders to the developers. Actually, he wasn't willing to but he stone of saying things sounded like he was giving orders. So this was one case, which I found, I didn't receive any complaints from other team members. But it is obvious like if, if someone sounds like giving you orders without the authority of giving you orders, then you might have a negative perspective of that person. So I still didn't receive any complaints from others. But this is something that I observed and I had to work on it. So as I said, like we planned a meeting, I called him and made him understood like how he should be saying things that using words like can you please you can sort of do that and do this. So it's simply like improving on the communication part. Right. That is, that is one example.

**Researcher** 34:50

Yeah. So when you talk to him, his way of approaching and talking to the developer has changed.

**Participant 9** 35:00

So I think quite a bit, but it's like very strong. Yes, he's trying to improve, but as it stands, like when you are when you are like dislike has been around 23 years, right? So when you have been following a specific tone for this long period, it is hard to change the tone, like instance are very quick. So he's trying to improve, I can say like a chant and Oh, but it's very slow.

**Researcher** 35:27

Yes, human don't change overnight, it takes time to change, but his behaviour is changing in the positive way. Do you think?

**Participant 9** 35:37

Yes, it's changing and positive, slightly slow, but positive.

**Researcher** 35:41

Do you think his, his working now in this safety mindset of the team, so he's getting the culture of the team that it is if we need to have a healthy conversation? The tone of the voice is not appropriate, etc?

**Participant 9** 36:01

Yes, yes. And even he is handling client calls as well. So if this was a persistent issue, right, we wouldn't be allowing him to have part in client calls, because that will actually sometimes say client not understand behavioural things want to understand this task. So if you talk in a manner that seems attitude to him, he would give negative feedback, obviously, for the company. So we are we are allowing him to handle client relations. And he is like around having three twice a week. So he's improving. I can say.

**Researcher** 36:34

Yeah, okay, fantastic. I will I'd like another follow up questions, which is why it is important to you in a team to have this, this healthy conversation, the right the right tone of voice, why it is important to you, if it wasn't important, you wouldn't talk to him in the first place. But it seems that it is important to you why it is important to you in a team in this team.

**Participant 9 37:04**

So we actually in India, and India is like a very diverse country in a sense. So even me myself, like I get trapped in my own cultural prejudices, it's like say, we have 24 hours a day, and we are spending eight hours a day at our workplace, which is like most of the time of our day because we spend another eight hours sleeping. So it is very important to have a healthy, safe and friendly environment in our workplace. And it is like the most important thing for me and our management. It comes at in the second place after salary is actually if we don't have a friendly environment or a healthy safe environment, it would be like very stressful to go at work every morning. See, it's like take two examples if you if you enter the workplace and someone greets you with a smile, that would make up your day, right? And if you enter the workplace and someone is looking at you like see, okay. So it will actually impact in a negative manner. At the end everything that matters is your mind should remain healthy and feeling safe. And how does it happen? By practicing every day and communicating to the team this approach to our culture at work. We humans are social creatures, right? What we need is a feeling of comfort and safety at the end. So that is why this is like the most important thing for me.

**Researcher 38:26**

Okay, fantastic. Very interesting and enlightening to hear this attitude. Very well done. So, we will move to the next item so we can go through them for the remaining time of the interview. So the next one says people on your team sometime reject other for from being different. You said yes. Sometimes there may be a lot of differences within the people of the team. It's might be differences in opinions, sometimes religions, or behaviour or example there may be times when a curious developer join the teams and task two and ask too many questions and the team members. Now his attention is good, but people tend to neglect him because of his behaviour. This particular point may have many reason depending on what different differences we talk about. But in short, yes, it happens. I'm more interested to understand the rejection. It's not We didn't mean by rejection based on religion base. It might happen in in a multi faith societies like India or other Middle Eastern societies. It can happen unfortunately, yes. But I'm more interested in being rejected. Based on your technical opinion, so wishes the second part of your question. A new team member came in, he's very curious. So what I'm looking for, it's somebody who has been rejected because of the way he approached things technically is different than the others.

**Participant 9 40:23**

Right. So this actually happened with me myself once, and I can have supportive suggestions of other developers. But what happened like talking about this project that I'm working on the cryptocurrency project, so we had to come up with a data streaming solution, a streaming solution that was reliable, scalable, and fun. And the most important aspect was scalability, because every other tool that we found out is reliable and scalable, and reliable and fault tolerant. So the part that comes in was scalability. So we had differences of opinions, like me and my senior manager, and he was suggesting to go over. Rabbit MQ is like a tool for data streaming. Sorry, message queues, it's centrally used for messages will be a real treat for data streams, and messages and was using WebSockets. So these are like two different technologies. But my suggestion of using WebSockets were solely based on the reason that it is it is something that we can easily scale and Rabbit MQ might be hard to scale and might also be expensive to be scaled on also, we do not have any kind of authentication mechanisms in rabbit MQ. So if we are planning to extend the testing platforms to end users, that would have been

really hard because then the users will be open to writing industries instead of just reading from the trend. So there might be such issues as I said, like with Rabbit MQ queues, which can easily be solved with WebSockets and WebSockets is the future. If you see like, at the end, the most of the companies are using Kafka and Rabbit MQ. But when it comes to end user, they are providing the WebSockets as a stream, right. So my main preference was doing WebSockets. But it happened like a project manager was like, not open to my opinion. I tried to have a call with him like a few times, two to three times, but he wasn't open to my opinion, he was like, we will be opting for Rabbit as of now. He was like, very strict in his opinion. So yeah, currently, we're using Rabbit MQ. But currently Rabbit embraces it is meeting our needs, because we are not opening the streams for our users. This is this is something that we will be getting into phase three of the project that is, which are which we are in the first phases of now, the second phase and the third phase about providing the end user the access to all the data streams so that they can take and develop their own algorithms and software's out of it. So that might be an issue in the phase three of the project. But since it is like around post Vernier. So it I think it is actually fine for now. But there might be troubles and hurdles when we are getting into Phase three and opening the strings to end users. So this actually happened with me. So if you select rating out of five for open opinions, I would actually get it down to four. Because from my past experience, like most of the time, he was open for opinions.

**Researcher 43:24**

So he didn't take your recommendation. That's what happened. He didn't take you didn't he didn't consider your recommendations.

**Participant 9 43:35**

So it was okay if you didn't consider my recommendations by profit providing me a proper reasons. Because that would be like a positive feedback for me, I would be learning from it. But what actually happened was like he was not open to even knowing right, what I have researched, I actually spent my weekend way considering this right. What other companies are doing what slack is slack is a tool which is widely used over our professional life. So slack two has a data platform. So what they are doing, other companies are doing, I spent my weekend doing that, but he didn't even listen to it. So that was like a very bad experience for me. Yeah,

**Researcher 44:11**

Let me do a few follow up questions. This instance of this example in which team has happened, it's a team under your lead or it's a previous experience.

**Participant 9 44:23**

Now it has certain vision in which I'm letting the project or project manager. So I was still at university project manager. This is my very first job, not now.

**Researcher 44:34**

How it made you feel?

**Participant 9** 44:38

Obviously, it felt very bad. Because say there is a proper reason to get right. If he might have heard at least try it and give me proper feedback on where I'm getting wrong. For network. I would take it very positively. But it's like if someone calls you and like starts saying something. Do you simply do Never that I don't want to listen these things now before discussing actually later, not now. And they simply hang up the phone is actually a very bad experience. So might be some, some issues in in personal life or something he might be like, fed up with some other issues like he might be stressed or something. But it actually felt very bad.

**Researcher** 45:20

So your suggestion? Technically it was far superior than his. So what happened to the product or to the software or to the code you developed? After you said first phase, the third phase? Did you see any consequences?

**Participant 9** 45:39

So yeah, we already have some constituents where there is some sort of error rate timeout, which we aren't able to handle. Now, the main thing, or the main, main reason why we aren't kind of to handle this because rabbit MQ is a new technology stack for all the developers, right? I went to the dividend documentation, but it's like, I need to go through its code base in order to solve the error. So it's like a much required amount of knowledge is required in order to solve the issue. So we have already faced the consequence of it. And we will also face the consequences in the face traces. Because at that time, we are planning to open our developer open data steps to the end users. And when we are exposing the endpoints to the end users authentication and access control is a must for security concerns.

**Researcher** 46:28

That was not a positive experience. Do you have a positive experience where you took initiative? And the initiative was accepted and implemented? Especially if you have an example related to software quality?

**Participant 9** 46:48

Yeah. So it was it took us it's not an example of mine, it is about a core developer in the QA team. And it was like when we are dealing with IoT devices, the hardware itself and the framework, which is running the hardware needs to be tested, right. So sorry, I use the wrong thing, I guess not framework, it is fungus on a farm there needs to be tested, it is the driver that runs, which connects the software to the hardware. firmware is the parameter clusters. So we are doing all kinds of testing, right. But this firmware part, which is actually driving or conducting software, and hardware wasn't being tested at that point of time. So the developer found this issue, right, he actually found that this testimony must be tested because firmware to have upgrades. If just like you are you are having a WiFi router at your place that it's to my receiving updates from the vendor. So from that to get subnets. So he found that it would be feasible to have automated tests for the for the firmware itself, right. And he had this idea. Now, if we directly point is added to the client, it might be rejected. And obviously, because it would increase the amount of additional drag, and also his budget as well. So we cannot directly go to the client saying that this too, must be done, we should have a proper reason for it, right. And this is where the buyer came in, right? He actually teamed up with the former engineer, the QA engineer, teamed



with the firmware engineer, and then what took out like some time during the whole deal, one hour a day and sort of meant of things and developed a whole POC system, which actually showcases, you know, claim estimate at this is required, what kind of issues we might face in future if you don't know that things. So a lot of development we need to do and when we had to demo with a blind, he focused the whole presentation, that tissue must be done. And the client was actually very happy to see the positive feedback. And now he has his own team is working on from the testing. So it's like a very great achievement for me.

**Researcher 49:04**

Okay, fantastic. So this proactive and taking initiative has prevented potential defects. If you don't test the connection between the software and hardware that can break in many instances, right?

**Participant 9 49:24**

And it's like, say firmware upgrades are things that are directly pushed to devices. So if you are having a WiFi router, there won't be a single person coming to your home and upgrading you tried it would be over the air go to the ceiling. So testing them is very necessary. Because once it is delivered, and then you start facing these issues, right, it would be nearly impossible to go to everyone's home and fix this issue.

**Researcher 49:56**

Yeah, it has significant consequences and the user Yeah, I agree. Thanks a lot for those two examples that were very good. We had a question or guard taking initiative. But we talked about taking initiative before. And the example so I'm going to skip and move to a very important one, or at least my favourite, which is it is difficult to ask other members of your team to help. You said yes and no, I have experienced both of these, mostly our call our work culture is good, in a sense that we can ping anyone for help. But there were also times when the other team member were highly occupied. So I guess it is not difficult asking other member for help. However, atomics might be difficult founded somewhere for him. So what I guess from the what I get from this answer is yes, as long as you approach the person in a nice way, and the person has time, obviously, they would help, right.

**Participant 9 51:04**

And in the second case, let's see what happens when we are following a child, right? Everyone has their own list of tasks that needs to be done or delivered by the end of the sprint. So the work culture at our workplace is highly liquid, you can approach anyone anytime. But the thing that matters is like he must be available, he cannot be spoiling his work and guiding you throughout as an illiterate. So this is like what I have found many times like it when it happens with my team, as well, because I'm currently a part of two different projects, you know, as I already mentioned, and there might be times when the developers get stuck, they might have internal discussion. And then I get asked when no one is able to answer. So they will bring me by to developer who is assigned the actual task helping me and I will simply reply, I'm like, I'm highly opera. But as of now, I feel that when I'm free, this this is a typical batch that I send them when I'm actually working on a different project. And we also do a different project as well. So I have not been working on that. So he might have to wait around a few hours or maybe even a day. There'll be like rarely times when the developer had to wait for one particular day in order to get ready salt. So this is a typical issue when team members are or when your team member is working in



different projects are having a lot of tasks in his sprint as well. He wants to be available. So having a healthy work environment is something that we help. But also, however, let a point matters when you ask others.

**Researcher 52:40**

Okay, great. So do you have an example where helping each other has, has improved the skill of someone to achieve better quality or helping each other has improved the code of quality. So an example where this in this healthy work environment, you help each other and it helps also quality.

**Participant 9 53:04**

Right. So mostly, we use pair programming for this kind of things where two developers sit together and work on the same task. And especially when we have new journeys, that is like basically new developers on the team around the project to something that we try to follow. And one example of it was developing an authentication mechanism. And that too, was from scratch. We're not use mostly third party tools. So then, because we have interstices, but we had this authentication mechanism. And there are things like having an email based and SMS based authentication login system, sorry. So the OTP was sent to you via email and SMS, or SMS. And user had to enter this. So there are like many different features. The first one comes is registration, login, reset password, forgot password. Forgot Password, we'll need to save some cases, like why email and via phone number and such things. There are a lot of functionalities, around 10 to 12 different features installed. And this task was actually built on top and new joining on that, because authentication is something that every project has. So it is like a typical thing that everyone should. And hence it is easy, because you will find a lot of solutions online. But if you search, so this was comparatively easy, and hence we are centrist one usually wasn't. And after he did that asked that we found certain issues, especially in the code quality. So he was in it to be added on, which we actually did. I had a meeting. And there was also other developers and was assigned a different task, but had a similar issue of corporate. So we three had a meeting in the gallery that I sold in the actual shape of how to use whatever when you can actually obviously saw all the correct answers. We just helped demonstrate a few examples and then they have to work. I did the same and then what I asked him was to do verbal, organic. So basically, there were three together doing pair programming and it's like, I'll be finding your mistake, and you'll be finding my mistake. Or as I said, you are actually like, rivalrying each other in a healthy way to produce the best code. But yeah, it actually works efficiently when you have two different competitors doing the same thing, right. So sometimes what I asked is developers to help each other's. So that they set together and have found it that mistakes are like, our list of mistakes. And then I asked them to solve, it's like they're working together on the same table on the same computer to fix the same thing. And this is actually highly efficient, because they want to be getting guidance from each other's, compared if they would be working on by themselves, it's like having two brains working on the same thing. Because there might be some ideas which might not come into my mind, but not in for the other developers. So this is something what we refer to as pair programming most of the times.

**Researcher 55:48**

So it's a win win situation, the junior or the new member of the team, his understanding of the quality expectation comes up to standard and senior member or the old member of the team, also get a

feedback. It's a win win situation, right? So do you think in this example, the new team member his code quality has improved his behaviour and the way he code has changed after a lot?

**Participant 9** 56:19

Especially Yes. Because, see, when if we asked him to work with a lecture and review has to be done, right. And when I do the review, I will be obviously passing on the feedback that might be positive or negative, but you have to pass the checking and feedback. And the developers obviously work out for the implement part. So it has been rewarding experience. I see improvement.

**Researcher** 56:38

Okay, great, thank you. I will move to the next question, which is, no one on my team would deliberately act in a way that undermine my effort. And your answer was no, there is no such things happening in my workplace. There may be time rapidly when such things happen. And no Lily, but never does unintentionally steal the situation might differ in other organisations or companies for political or management reason. So in your team, it doesn't happen. That's what I understand. Yes. Yes. So do you have an example where your effort was appreciated? And specifically, an effort to make quality better?

**Participant 9** 57:34

Right, I think already gave the example of USC corpus from Chicago, talking about different one, which is like obviously mine, I was promoted to Team late, as I said, a few months back. So I had been leading teams since around past, I think, I guess, eight months. So it is like the management is constantly observing the skills and the knowledge the employee person said, and they are constantly working out for encouraging them to do better and better service life. Yeah.

**Researcher** 58:09

Yeah. Do you think because of the quality of your work, you've been acknowledged and rewarded?

**Participant 9** 58:17

Obviously, yes, like, if my work wasn't good enough, they won't be promoted. So obviously, see, it's not like just the quality even I think it is, my party will demand evaluation as members of the team. So we have a seat, like it is also created by me. So we have a set where we identify certain skills that was aside from water quality. And magical thinking,

**Researcher** 58:47

Yes, yeah, of course, is the combination of both you need to have some personal skill you have, you need to have some software engineering scale, but also the quality of your code was taking in consideration the quality of your work, right.

**Participant 9** 59:02

And that is also one other example. Like, it's not my it's one of the team members that I have here to watch new join your entire team. And, but it's like compared to other joint is he was working quite well, unexpected. His logical thinking abilities were quite poor, right. And also, his quality improved in a very short span of time, which is like we found rarely, because developers need time in order to improvise,

but but he was very quick. And I guess, I also personally connected with him right? Apart from professional communication. I also be very friendly to my team members. So it's like I might be calling them once a month and asking them what they are doing, how they're access things. And I found like he was also working on weakness in order to improve himself. Not on the project, but it's like you have to gain the knowledge and skills required. So it's not like you will be working on the project but To you will be finding what points you improve on. And we will be working on it in the records. And this is something, I think a very strong reason why he's progressing faster as compared to other developers. And his work has been really appreciated. Like, whenever a new joint, he joins the team, we give his example to others, like you shouldn't be focusing or editing your timeline. Obviously, it's not good to work on weekends. But if you are in a very early phase of your professional life, I think it's better to work out a few extra hours in order to improvise, in order to gain a better speed compared to others.

**Researcher** 1:00:34

So do you think he was rewarded? Because the quality of his work improved quickly?

**Participant 9** 1:00:41

Yes, and currently he is his guiding others. He is able to add authors on top designations are saying but you still able to add other terms. And I think management is also obviously doing this and we will be saving it some parks near future.

**Researcher** 1:00:58

Do you think other team members also to focus on the quality of their work? When they see somebody has been awarded?

**Participant 9** 1:01:07

I guess mostly Yes. And sometimes No, it actually depends on how your mind thinks that and every person thinks in a different manner. So some might think like, he's doing a very good job, and I must be following him or I must be working like him. Right. And some might even feel like he is doing sort of extra work for motorists and take it in a negative manner. So it actually depends on individual, right. But most of the time, I think people take it positively because when you create an environment where people strive to be better, and it is safe, it also encourages them to for, like, invest in their own improvement.

**Researcher** 1:01:45

Yes, I agree with you. It has to do with the individual and it has also to do with the environment, but the environment helps too. Yeah, that's a good assessment. Thank you very much. Can we come to an end? Thanks a lot for the good discussion. The good examples. I enjoyed my time with you. It very much. Thank you. Thank you will stay in touch. I wish you a good Sunday. Thanks for doing it in in a Sunday. Thank you. Have a good day. Bye.