

User Experience Research:

Interview Report for IBM Developer Website

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Executive Summary

This research report interprets and analyzes the key findings from the interviews our team conducted on developers' behaviours and habits. Using the contextual inquiry method, we first interviewed four developers to understand their behaviours and habits, with a focus on their activities related to community. After the interviews, we conducted interpretation sessions on our notes, categorizing the findings and summarizing three key insights.

From our analysis, we found that developers usually search for specific answers and rarely actively participate on sites by posting their own questions or answers, and that they generally navigate to their chosen developer sites through Web searches rather than navigating within said sites. Furthermore, developers generally only join communities or attend events directly related to their jobs.

Based on our findings, we will be proposing recommendations for how the IBM Developer site can better serve its users. Most significantly, because developers usually start from Web searches, we recommend improving search engine optimization on the Answers section in order to increase user activity.

Introduction

The IBM Developer Website is an online community for coders, providing resources, tools, and social events to bring them together and facilitate mutual support. Recently, a redesign of the Developer website was completed, featuring a new format for the instructional content and code. IBM is looking for feedback on the new website regarding features such as information architecture, technical content, and overall user experience.

Following the initial meeting with our clients, the UX designers at IBM, we got a better scope of the overall structure for the website and the project's problem statement. In order to gain a solid understanding of how developers interact with the system, our team initially created an interaction map of the site.

A comprehensive view of whether it is an effective design should not only be based on the IBM designers themselves and our team, but must also incorporate opinions from the target population, so that our team to focus on users' needs instead of relying on designers' personal opinions and to avoid designs that serve the designer instead of the end user. Our team conducted interviews with several developers from the tech industry in order to learn about the behaviors and habits of developers and the problems they face so that we can help IBM create a better website that will serve their needs. Some of the key questions we hoped to answer in these interviews were:

- Tell me about the last time you used a developer website.
 - What was your goal when using this website?
 - Did this website help you to accomplish your goal?
 - How did it (or not)? What was most helpful or unhelpful?
 - Which part of developer website did you use the most?
- Can you tell me about your last activity in this organization?
 - What was it? What was your goal?
 - How did you hear about it?
 - What do you dislike about this organization?

Methods

In order to determine the different developers' working habits and behaviors to provide more comprehensive suggestions to our client, our team employed a user-centered contextual inquiry method to collect information. We then carried out qualitative data analysis on our findings. Contextual inquiry is an interview method that involves asking interviewees a set of standard work-related questions within the context of their work environment. Qualitative data analysis is about creating data clusters by theme and organizing these clusters in a hierarchical way to identify the relationships between data points. From this hierarchy, we were able to create an upper-level summary of key insights into our interview data.

We scheduled 4 interviews with different developers from the industry. Each interview was conducted by two members from our team, with one member serving as an interviewer and one as a notetaker. Prior to interviewing, we developed an interview protocol containing standard questions to ask each developer. Our interviews mainly focused on the developers' behaviours and habits regarding the websites they use to solve problems. After finishing all of

the interviews, our group held an interpretation meeting to discuss and interchange the information we gathered from our notes, creating 'affinity notes' or pieces of data containing important quotes from the interviewees, similar sentiments they had all expressed, or other noteworthy pieces of information (including outliers).

We then grouped all of the affinity notes into lower-level categories based on the themes that we identified: Work Habits, Preferred Websites, and Community. We then wrote summative sentences for each group and repeated the process to create upper-level categories. This process provided us with a set of organized notes with a clear hierarchical structure. Finally, we brainstormed recommendations based on our findings.

Findings

While none of our interviewees had used the IBM Developer site, they all made frequent use (in many cases, several times a day) of other developer sites with similar functions. Stack Overflow was easily the most popular site overall, with three of our four interviewees mentioning it among their top preferred sites. Other sites that were mentioned include Red Hat (the favorite site of a developer who frequently worked with the Kubernetes platform), Oracle (preferred by the database administrator), Youtube (one developer described herself as more of a visual learner and found video tutorials more helpful when available), and Microsoft. Several interviewees cited the system for upvoting helpful comments as one of their favorite features of Stack Overflow. The developer who used Red Hat preferred to get answers directly from the developer (although still liked that the site allowed other users to comment on threads as well). Most of our interviewees also admitted that one of the main reasons they came to prefer certain sites, at least initially, was simply that they tended to be among the first results in Web searches.

Regarding their reasons for visiting their chosen developer sites, our interviewees all said that they only visited said sites when they had particular problems with their code they were having trouble solving. Our youngest developer (who worked with Kubernetes) was somewhat unique in that his first move on encountering a problem would be to look up the official documentation for the tool he was using, and would only look to other sources for help if he was unable to find what he was looking for there; the others would all go straight to the Web. He also stated that when he read through documentation or looked for answers online, his goal was to gain a better understanding of the whole system so that he could solve similar types of problems in the future without having to seek help; this differed from the others, who all said that their goals were always to find answers to the specific problems they were having at that moment. Belows are our interesting insights:

1. **The method most of our interviewees described using when accessing the developer sites of their preference.** All of our interviewees reported that when looking for information online, they would generally initially go to Google (or another Web search engine such as Bing) even if they had a particular site in mind that they were hoping to find answers on. The Stack Overflow search feature was said to be ineffective and hard to use, the Oracle site's interface was described as 'not user friendly', and the Red Hat site was bogged down by excessive marketing, making the developers prefer to search externally

(sometimes even including 'red hat' or another site name in their Web search). The content itself of these sites is not infallible either, with two developers mentioning that answers were sometimes written for older versions of the related software, or would lack enough detail to be helpful.

2. **Most of our interviewees maintained only a minimal level of participation in developer communities, whether physical or online.** Most of them reported that they did attend some official vender-run events such as conferences or training sessions, but only one would frequently attend less formal events such as local Meetup groups (and he admitted that part of his motivation for doing so was the free food). The events they did attend, they generally found passively (such by having emails forwarded to them) rather than by actively seeking them out. And while some of our interviewees did mention that they have accounts on online forums, they all stated that they rarely if ever post their own questions or answers, finding it sufficient to search for those posted by other users.

Recommendations

Based on our findings at this point in the research process, our main suggestion would be to focus on **1. improving the 'Answers' section of the IBM Developer site**, given that similarly formatted question-and-answer threads with voting systems seem to be the most popular functions on other developer sites. Currently, the Answers section is not easy to find (our team did not even notice it existed at first, until we searched Google to see if such a thing existed, and then were able to find the link at the very bottom of the IBM Developer homepage), so our simplest recommendation would be to add more emphasis to the link and move it closer to the top of the page. **2.** However, because all of our interviewees mentioned that they were much more likely to search for answers over the Web even if they had a specific site in mind, we also recommend **performing search engine optimization on the Answers site**. We understand that this would most likely be much more complex and costly to carry out, but based on the developer habits we have observed, we believe that it could make that feature of the Developer site much more useful.

Discussion

Due to our limitations of interviewee contacts, our research could be improved on by recruiting more developers from a wider variety of backgrounds and industries. While we aimed to diversify the four interviewees as much as possible, the developers we interviewed were all from Ann Arbor and affiliated with the University of Michigan. In this case, they all used similar tools and products, and we did not gain insights on other development fields such as gaming or finance. Also, three quarter of our interviewees were experienced developers, having worked in the industry for 15 years or more. Thus, we lack significant insights from younger developers. To be more specific, we noticed that the only younger developer we interviewed, who had only been working as a developer for one year, had several working habits and opinions about developer community that were different from those expressed by our other interviewees. Therefore, in order to understand young developers' behaviours and whether these opinions are

typical of younger developers or he was an outlier among the demographic, we would need to recruit more new developers.

Though our client aimed to get responses from external developers outside IBM, it would still be insightful if we could interview developers who use the IBM Developer website. None of our interviewees used it regularly (if ever), and some had not even heard about it. One possible explanation of this finding is that their jobs did not require any resources from IBM due to the tools they use. Another possibility is that they were simply not aware of the services provided by IBM. In either case, it is difficult for us to interpret the direct influence of the IBM Developer website on developers' daily work based on the research we have done thus far. To gain an in-depth understanding of the IBM Developer site's influence, it would be helpful to interview users of the site and analyze and compare their answers.

From our interviews, we found that few developers actively engage in any online or offline developer communities, and that they only view the website sections that are relevant to their specific questions. Thus, they usually don't spend any additional time using other parts of the sites. Users spending minimal time on their chosen websites could plausibly be the primary reason for low user activity; the alternate explanation would be that the current community features do not suit their needs. In order to better understand the reason for low user activity on the IBM Developer site, we need to further analyze what developers would need from the community.

Since none of our interviewees were users of the IBM Developer site, we do not gain any specific insights on the usability of the site in its current form. In order to improve the community features of it, further in-depth usability testing of the site would be needed. For our next step, in order to obtain insights from a wider range of target users, we will be sending out surveys to collect feedback on whether the site reflects developers' needs. Furthermore, since a majority of our interviewees were users of Oracle and Stack Overflow, a comparative analysis would be beneficial as well in order to understand the advantages and disadvantages of different developer-oriented products.

Conclusion

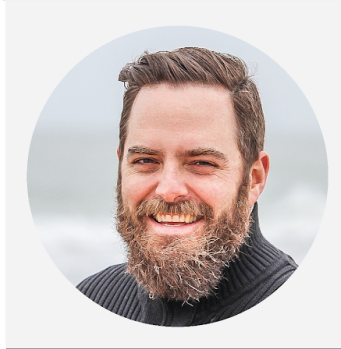
From our research, we discovered three main insights that will be crucial for future implementation of the IBM Developer site. First of all, users typically search for answers to specific questions, but they rarely contribute to any online communities by posting questions or answers. Secondly, users generally start with Web searches, even if they are looking for results on a specific developer website. Finally, developers tend to join online and offline communities and attend events very selectively, only when they are directly related to their jobs.

Based on our insights, we have proposed several initial recommendations to improve the current IBM Developer website, primarily to improve search engine optimization, since most developers start their journeys from Web searches.

[Appendices]

Personas --- Traditional Developer:

Mark



“I like my job because it fits my personality.”

Name: Mark

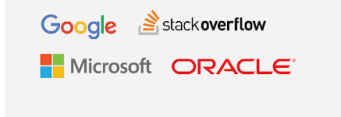
Age: 40

Status: Married with two children

Profession: Senior Software Developer

Location: Ann Arbor, MI

Favorite Tools



Background

Background

I have worked as a senior software developer within the IT department at the University of Michigan for about 15 years. My day starts with checking email and managing unfinished tasks from the previous day, and then figuring out the day's new tasks. I search about any problems I am dealing with to see if there are any updates that would help my task. In addition to actual coding, I often need to meet with my clients to get a better idea of what they want before I put a significant amount of time into a project. I like my job because it fits my personality. I do both software and database development depending on the needs and resources of a project.

Motivations

- Mark has limited time to learn new tools or technologies at work, but he has a good base set of skills that serve him well.
- Mark finds it most efficient to learn new things through problem solving.
- If Mark really wants to learn something new, he will start off with finding specific posts and tutorials to guide him through it and build it as a skill.

Skills

C++, Java, C#, Python

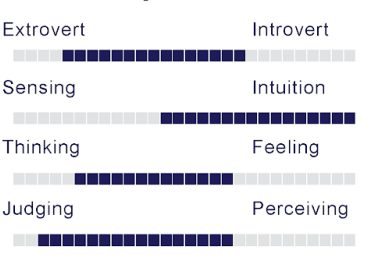
Goals

- Complete work tasks on time.
- Develop quality code that meets customers' needs.
- Be efficient and accurate.
- Become more proficient with the tools he uses.

Frustrations

- Clients often have unrealistic expectations.
- Searching for answers and resources takes time and impedes the working process.
- Keeping up with new technology and trends in a fast-paced and ever-changing environment.

Personality



Scenario 1:

It is Monday again. Mark gets to the office on time because there will be an important meeting later with his new clients today. He starts off after he arrives by checking email, and then checks his Google calendar again to double-check the meeting time. During the meeting, he listens very carefully to what the customers really want and writes down details as much as possible. He also asks many specific questions to aid him in the whole process of building this new

product. He tells his customers that he wishes to keep close contacts with them to make sure they avoid any misunderstandings.

After meeting, Mark and his team break the job down into different tasks and assign them. Mark starts to code after he receives his main task. When he encounters problems, he opens Google and inputs some search terms to look through. He finds some similar questions on Stack Overflow, looks through the answers, and finds that many of them are for an outdated version of the software. He goes to Oracle to see if he can find out some more current solutions, and finds that he needs to learn a new skill to complete this task. Although it is time to go home by now, Mark decides to start reading through the tutorials. Due to his base set of skills, Mark is able to finish them in an hour and then quickly solve the real issue on his task.

Personas --- Explorer Developer:

Carter



"Code is a part of my life!"

Name: Carter

Age: 28

Status: Single

Profession: DevOps Engineer

Location: Los Angeles, CA

Favorite Tools

Google  stackoverflow



Background

I work as a Java engineer at a startup and been writing code since I graduated. Writing and updating code and doing security scanning has always been a part of my life, so becoming a DevOps engineer seemed like a good fit. My day starts with checking my email and doing some quick reading on what's new in the development world to make sure I am always up to date. Except for meeting with my team and having lunch, I spend most of the day writing code. To me, code is just a part of life and I am always excited to see something I created working properly. When I encounter a problem, I prefer to get read official documentation before searching for help on the Internet.

Motivations

- Carter has limited time to learn new tools or technologies at work, but he is always on the lookout for new tools or technologies outside the office, and is willing to spend his spare time learning about it.
- Carter loves to learn and will code in his spare time for fun. He learns through the open source community and by attending training events.
- Carter strives to understand the whole system to find long-term solutions rather than simply find a one-time solution for one specific problem.

Skills

C++, Java, Python, C#, R, PHP, SQL, Javascript, HTML+CSS, APIs

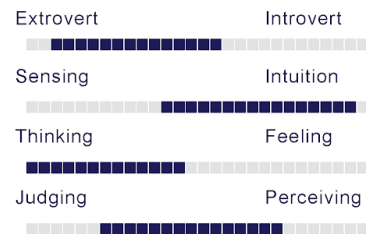
Goals

- Write quality code to meet customers' requirements.
- Keep learning while working.
- Understand the system as a whole rather than just find a one-time solution to a specific problem.
- Become more proficient with ever-expanding tools and technology.

Frustrations

- It can be hard to find out the right way to use APIs and complex systems, and it takes lots of time to debug errors.
- Sometimes, quality code may not be compatible with other tools.
- Keeping current with new technology and trends in a fast-paced and ever-changing environment.

Personality

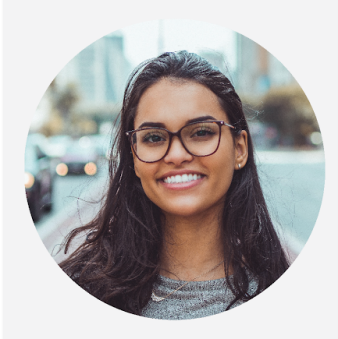


Scenario 2:

Carter is a positive young man and has a great passion for facing challenges. As usual, he goes to the office on time and starts off by checking email. After replying to his emails, he begins to do some quick reading on what's new in the technology and development world. He finds out that there is a new language that he has never learned before but that looks very helpful for his current task. He decides to learn it after he gets off work. A coworker comes into his office and tells him that it is time to have a meeting. Except for meetings and eating lunch, Carter stays in his office the whole day to write code. When he gets home, he prepares to study this new language immediately. First, he reads the documentation to see its functions and learn how the language works. Then, he searches Google to find some tutorials. He looks through the results and picks one specific tutorial. For the next five hours, he does stop to do other things and just focuses on learning this new language. Due to his strong motivation and base set of skills, he is able to learn the new language fairly quickly and is excited to try it out at work.

Personas --- Visual Developer:

Hailey



“I am a very visual person!”

Name: Hailey

Age: 31

Status: Married

Profession: Database Developer

Location: New York

Favorite Tools



Background

I have worked as a database developer and analyst at a technology company for about 7 years. My day starts off with checking email and having team meetings to discuss new tasks or report on my progress on the current tasks. I am a very visual person, and I prefer to learn through video tutorials or in-person training events rather than by reading documentation or online forum posts. I like working with databases because it fits my personality. The exact type of database development I do depends on the needs and resources of a project.

Motivations

- Hailey has limited time to learn new tools or technologies at work, and although she has a base set of skills, she still faces the challenge of using new technology.
- Hailey learns new skills as she needs to.
- If Hailey really wants to learn something new, she starts off with searching for video tutorials to guide her through skill building.

Skills

Python, PHP, SQL, Javascript

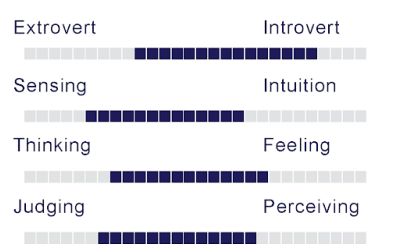
Goals

- Complete work tasks on time.
- Develop quality code that meets customers' needs.
- Be efficient and creative.
- Increase proficiency with her tools.

Frustrations

- Using new technology and undergoing virtual training will always take time and energy.
- Searching for answers and resources usually takes time and can be frustrating if answers are not helpful.
- Keeping up with new technology and trends in a fast-paced and ever-changing environment.

Personality



Scenario 3:

Hailey has been a database developer and analyst since she got her Master's degree 7 years ago. She is full of energy for her work. As usual, when she gets to the office, she opens her computer to check email and replies to them one by one. Then, she goes to the meeting room to participate in a team meeting and reports on her duties and lies about which part of the process she is on in the task. The senior developer points out that there are some issues with Hailey's work and hopes that she can figure them out by the end of the week. Hailey goes back to her office and thinks about how to solve these problems. Since she doesn't know what to do, she goes to Google and the Oracle forums to look up answers. She does find some useful information, but the way the documentation is written, it is hard to understand. She decides to search Youtube to see if there are any video tutorials on the topic. Luckily, she is able to find out a great video tutorial, and subscribes to the channel and learn more in spare time. Finally, she successfully figures out all the problems.

Interview Goal: Understand Developers' Behaviors and Habits

Introduction:

Hello! My name is _____, and this is my partner _____. We are students from the University of Michigan School of Information. Thank you for taking the time to talk with us today. The purpose of this interview is to learn about your experience working as a developer. We'll be asking you some questions about your role in your organization and your work habits.

We would like you to feel comfortable saying what you really think and how you really feel. There are no right or wrong or desirable or undesirable answers. If you feel uncomfortable at any point during the interview, just let me know and we can stop at any time, and you can decline to answer any question. If it's okay with you, we will be recording our conversation since it is hard to write down everything while simultaneously carrying an attentive conversation with you. What you say in this session will remain completely confidential, and anything we share with our class and our client will be anonymized.

Everything you say will remain confidential, meaning that only myself and my teammates will be aware of your identity for the purpose of that is only so we know whom to contact should we have further follow up questions after this interview. If there's anything you don't want shared, please let me know - we can anonymize this information or leave it out completely.

Stakeholder:

- What particular role(s) have you had in this website development process?
 - Did you provide any input for this website features?
 - What do you see as the most important function for this website?
- Who are the target user that this website designed for?
- What prior research have you performed?
 - What are the pain points you found?
- What do we know about our user's preferences around this product, and likewise, what are we not yet sure about?
- Can you walk us through the process of RSVPing for an event on this website?
- Are there any specific issues you are hoping to address?
- What is your preferred goal for our research?
 - Community research
 - Community from scratch
 - critique
- Can you put us in contact with a current user of the website?
- Is there anything else you'd like to let me know?

Users:

[Warm Up Questions]

- Can you tell us about your role in your organization?
 - What are your official job duties?
 - How much do your day-to-day tasks in practice differ from this?

[General Behaviors and Habits]

- What kind of developer challenges you usually encounter in your work?
 - How do you solve them?
 - What are the tools that you use to help achieving the challenge?
 - How did you find about this tool?
 - How much time did you spend learning this tool?
 - Is there an aspect that you think could be simpler to learn?
 - Is there any feature that you would want to add to the current tools?
 - What are your go-to sources for help when you're stuck on something?

[Habits and Behaviors]

We are trying to understand the behaviours and habits of developers, aiming to create a better developer website for developers. Below are the questions for us to understand your habits of using developer tools.

- Are you a frequent user of any developer websites?
 - How do you hear about these websites?
 - If you do, what's your goal /purpose for using these types of sites?
 - If not, why?
- Tell me about the last time you used a developer website.
 - What was your goal for using the website?
 - Did this website help you to accomplish your job?
 - How did it (or not)? What was most helpful or unhelpful?
 - Which part of developer website did you use mostly?
- How often would you say you visit these websites?
- What do you like about the website you most frequently use?
- Do you have any difficulties using that website?
 - Can you describe a particular time when you faced difficulties with the website?
- Is there anything else you would wish to see changed?
- What other similar websites do you use to achieve your goals?
 - What do you like/not like about them?
- Do you think you will continue using this website?
 - Have you ever tried any alternatives?
 - If not, are you likely to do so?

[Developers Community]

- Do you join any developers groups online/offline?
 - What is this community?
 - What's your goal joining this community
 - How do you hear about this community

- How long have you been a member of this organization
 - What is your role in this community?
- Can you tell me about your last activity in this organization?
 - What do you dislike about this organization?
 - Any improvement you wish to change?
- How do you normally keep in touch with this community?
- Do you think joining a community assist your job as developer?

[Additional question]

- Is there anything else you'd like to let me know?

[Conclusion]

Thank you for all your answers to our questions. If there's something else you come up with later after we leave, please feel free to let us know by email at C2W2.Group@umich.edu. We may get in touch later to ask a few follow-up questions. Thanks for all information.

Interview #1

[Warm up Questions]

Q: Can you tell us about your role in your organization?

A: Database administrator

Q: What are your official job duties?

A: Installing software, patching it, troubleshooting, evaluating system, writing scripts to manage data, database. Monitor and security relative database system.

[General Behaviors and Habits]

Q: What kind of developer challenges you usually encounter in your work?

A: Write script once a month, but never done enough to be a true expert.

Q: How do you solve them?

A: Walk through the script and search information on the web.

Q: What are the tools that you use to help to achieve the challenge?

A: Specific website: Google / Bing.

Q: How did you find about this tool?

A: Usually used. Find them quickly during programming

Q: Is there an aspect that you think could be simpler to learn?

A: No, I have no idea.

Q: Is there any feature that you would want to add to the current tools?

A: No. Google and Bing are great to use.

Q: Is there any other tools you will use during work.

A: I am looking for information in Oracle, but the Oracle is not very user-friendly, but it works. And I am also using Microsoft.

Q: What are the benefits of using Oracle and Microsoft?

A: Hand the same user interface. Some forums that have many references and let user report. Documentations is nice, and has specific support pages to address bugs.

[Habits and Behaviors]

Q: Are you a frequent user of any developer websites?

A: Not much, just web search. (Google/Yahoo)

Q: Tell me about the last time you used a developer website.

A: Yesterday.

Q: How often do you use them?

A: 5-10 times a week. Pretty often.

Q: Did this website help you to accomplish your job?

A: Oracle was hitting a bug which has been generating a very large trace file.

Q: How did it (or not)? What was most helpful or unhelpful?

A: Trace files have a particular pattern, so just repeat them again and again and also get some support side. It will usually get the right results.

Q: Do you have any difficulties using that website?

A: Oracle only has first 20 hits, so users have to click to load more and then users cannot sure how many more there might be and it's not even obvious.

Q: Is there any features you would wish to see changed?

A: I wish some features could be improved. Such as a complicated prompt desk. They provide difference references/resources for public users and registered users. The most apprehensive technical information is for registered in customers.

Q: Do you think you will continue using this website?

A: yes.

[Developers Community]

Q: Do you join any developers community online/offline?

A: Online forums-- for the server. (Name of the forum: social. msdn. microsoft.com)

Q: What's your goal joining this community.

A: Connecting to the database.

Q: How do you hear about this community?

A: Google search

Q: How long have you been a member of this forum

A: 7 years.

Q: What do you normally participate in the Form?

A: Search on Google and Bing to find answers and search in that forum to see if there are answers if not, will ask questions on the forum.

Q: How do you normally keep in touch with this community?

A: Not often.

Q: Is there any features that you wish to improve on the forum.

A: No, haven't been using it much.

Insights of interview #1.

1. He mainly uses google/bing search to find solutions.
2. He usually wouldn't post questions and reply answers on the forum.
3. He mainly uses Oracle and Microsoft websites and will continue using these two.
4. He says the Oracle site isn't very user-friendly
5. He likes Oracle and for its extensive resources and good documentation.
6. He uses Oracle and Microsoft forums, etc to find help for specific problems.
7. The community he joined is directly related to his official jobs.
8. He has accounts in online forums but isn't part of any real-world developer communities.

Interview #2

[Warm Up Questions]

Q: Can you tell us about your role in your organization?

A: Developer;System analyst

Q: What are your official job duties?

A: I worked at hospital, there is a digitalized reservation system. We have a infrastructure team, and our duty is creating patient data and setting up the server running.

[General Behaviors and Habits]

Q: What kind of developer challenges you usually encounter in your work?

A: Using new technology

Q: How do you solve them?

A: Like recently, I received a new assignment about machine learning. I checked if there is any training available onsite or virtual training.

Q: Who would offer this training?

A: University and Vendor would offer training, and I will attend some lectures on Oracle or O'Reilly.

Q: What are the tools that you use to help to achieve the challenge?

A: Youtube and Google. I am a very visual person, and I like things showing how to do it. Sometimes, I would also see written documentation.

[Habits and Behaviors]

Q: Are you a frequent user of any developer websites?

A: Almost every day.

Q: Tell me about the last time you used a developer website.

A: Stack Overflow: for the database

Q: What was your goal for using the website?

A: Find some solutions.

Q: Did this website help you to accomplish your job?

A: Yes. I will check forums as well. Usually able to tackle the problem

Q: Do you have any difficulties using that website

A: Yes, of course. Solutions not in exactly the same; Answers are wrong; Some answers are too old and too obsolete.

Q: Is there anything else you would wish to see changed?

A: Hard to say. Maybe forum style: hard to demand every respondent to provide detail

Q: Which forum?

A: It depends. For reports-crystal reports, Depends on projects

Q: Do you think you will continue using this website?

A: Yes

[Developers Community]

Q: Do you join any developers groups online/offline?

A: No, I just look through them.

Q: How do you normally keep in touch with this community?

A: Not often, just need-based.

Q: Do you think joining a community assist your job as a developer?

A: Yes. Usually just looking for answers

Insights of interview #2:

1. She doesn't join any forums or post her own questions or answers, only search for answers
2. As a visual person, she thinks watching youtube is helpful for her to learn a new language.
3. The use of websites is need-based.
4. She searches through Google or Youtube, not on the website itself.
5. She goes to in-person training events and lectures offered by the vendor.
6. Sometimes user-provided answers don't have enough detail or might be outdated (for older version of software).

Interview #3

[Warm Up Questions]

Q: What is your role in organization?

A: I'm a research support programmer, basically I just get random programming jobs from research labs at UM.

Q: What are your day to day tasks?

A: That's 90% of my job

[General Behaviors and Habits]

Q: What challenges do you usually encounter in your work?

A: Biggest would be getting good idea from customer what they want, figuring out specs for final product

Q: How you solve it?

A: Lots of meetings, try to get them something to look at, discuss it early in process even without fully functional product

Q: What tools do you use to solve those problems?

A: Usually face to face meetings

Q: Any specific software?

A: No

Q: How much time does it take?

A: Usually 30 min at a time but might end up being hours total

Q: Is there any simple way to solve this type of problem?

A: Don't think so

Q: Go-to sources for help when stuck?

A: Usually either ask peers in person or over slack, or Google it (Stack Overflow is best)

[Developer sites]

Q: Use developer websites?

A: I use Stack Overflow often

Q: How often?

A: Depends what I'm doing, may be up to 10 times a day but not every day

Q: How did you find out about it?

A: Initially through Google search, it's always one of the top hits and from his experience has the best results.

Q: What's your goal when using these sites?

A: Finding solutions other ppl found to similar problems, often with code examples

Q: Is that the only website?

A: That's the main one, also uses high-end blogs but that's the main one

Q: What's the last time you used it?

A: Yesterday

Q: What kind of question?

A: Don't remember, probably something with keychain data on iPhone in Swift

Q: Did it help you solve it in the end?

A: Yes

Q: It's generally helpful?

A: Yes

Q: In that site, which part do you mostly use?

A: The entire website is user submitted questions and answers. I don't post to it often in either regard, mostly just search for similar problems and helpful solutions. I read through top 5 or so

Q: What do you like about this website specifically?

A: The answers, realistic with real examples, often with example code rather than just descriptions or documentation

Q: Any difficulties using the website? Feel confused?

A: No, biggest problem is that answers might be outdated or might not be able to find similar question, could ask it himself but typically don't

Q: Anything you'd want changed regarding functionality?

A: No, no major issues with that

Q: Any other similar websites you use?

A: Closest would be a forum discussing his problem but that's always more specific, have to know to go to certain documentation depending on language

Q: Like it compared with Stack Overflow?

A: Prefer Stack Overflow

Q: Why?

A: It's bigger, greater quantity of previously answered questions. Other users comment on previous answers and rank them., usually can trust if one answer was voted highest. Will continue to use that website

Q: Ever tried other websites?

A: Yes, if no solution there then just Google it and see. Could end up with any random answer at that point.

[Developer communities and events]

Q: Do you join any online or IRL developer groups?

A: No

Q: Why not?

A: I wouldn't know what to join. Lots of them are focused on specific language or something, and his job is pretty varied. Single group about Java or something wouldn't be that useful

Q: If there are any events or activities for developers would you attend?

A: Yes, I've been to Apple developer conference before, probably will go to that or A2 Tech Trek this summer

Q: Describe these communities?

A: Apple dev con is big fancy Apple-run event, mostly them giving presentations about future products and software. A2 Tech trek, don't know much about it, had meeting with someone else who'd gone previously

Q: For Apple one, what's goal when you go?

A: Goal is to learn about what changes they're making to development environment, make sure he's all ready for it

Q: How you hear about it?

A: Maybe I'm part of one community, both read and post to Hacker News (~news.ycombinator.com or something), people recommend it there. Also gets emails directly from Apple about it

Q: Are you official member for that event?

A: You have to be registered paying Apple developer, already part of their service in order to be invited

Q: How long you been member?

A: I'd say on again, off again for 15 years

Q: What's your role in that community?

A: Certainly not much of a contributor, mostly just seeing what others are doing and what Apple is advertising as best practices

Q: Can you tell us about last time you went?

A: June last year. There were variety of topics, lot of it was about new software features that are now easy to develop, AR, machine learning, Apple Watch features

Q: Any aspect you disliked about the activity?

A: Didn't have any good Q+A periods

Q: Any way they could improve?

A: I'd say it'd benefit from group Q+A sessions. Mostly it's presentations with opportunity for 1-on-1 Q+A but can't ask presenter at end of presentation

Q: Any chance to interact with speakers after presentation?

A: No

Q: How do you normally keep in touch with Apple community?

A: I don't, just hear about events from Apple directly

Q: Does joining the community help you as a developer?

A: Yes, maybe networking at the event, learning about other companies

Q: Do you learn things at the events?

A: Yes

Insights:

1. He mainly uses Stack Overflow, Google search.
2. He doesn't actively post questions or reply answers.
3. He is not active in the community.
4. He aims to find solutions for specific problems.
5. He likes the voting system on the websites.
6. He likes Stack Overflow because it has the best answers because of the voting
7. He is part of the Apple developer community because he gets useful tips at the conference
8. He didn't join other groups because they were generally too specific (centered around one particular language, etc)
9. He doesn't know how to join a group.

Interview #4

[General Question]

Q: What is your role in organization?

A: Java Engineer , code, develop consumable create new application. Click a button and to run in the Internet.

Q: What are your day to day tasks?

Container technology, writing code, updated code. Security Scanning.

[General Behaviors and Habits]

Q: Challenge?

A: Apis for different systems. Library functions what they want to accomplish in the same goal. Finding new library or develop by myself. Find right APIs or library; debugging the error; trying to find out the complex system.

Q: How to solve?

A: Go to log (?) whiteboarding the architecture. White boarding the solution to that problem.

Q: Does the solution exist or we should create by our own?

A: Should we pay that solution.

Q: Tools?

A: White board. Virtual machine, Virtualbox, M, HITS, terminal, writing code, gitlab.

Q: Time?

A: still learning, can't say...years..., 14 hour training section to learn technology.

Q:Go-to sources?

A: Google. Slack. Web server. (...) channel.

[Behavior and Habits]

Q: Goal?

A: Yes. google the problem. Do the documentation to see how the system works. Get a better understand the system, why I get that problem, how the system work.

Q: Where to find?

A: Google result. Product's support pages. Read the documentation.

Q: Last time experience?

A: Google Kubemetes to find something... it has multiple container. I tried to research how it works. The documentation gave me the idea.

Q: How often?

A: Daily multiple times.

Q: What is your favorite tool?

A: Red-hat, because it has community question. Unlike the stackoverflow. Question-answer-discussion.

Q: Are there any difficulties?

A: Hard to navigate. So I relay on google. For the website itself, I don't navigate too much, because it let me update something

J-BOSS??? It has new version and old version. When I want to lookover the new version, it gave me the old version one to reference.

Q: Is there any changes that you wish to see in the future?

A: Log in, not to try to marketing, don't try to sell me the product. Subscript the email.

Q: Other similar website?

A: Documentation, red-hat, steak-overflow, chat channel, discuss with manager

Q: What do you like most?

A: Voting

Q: What you don't like?

A: None, because I don't really navigate the site beyond that.

[Community]

Q: Do you join any developers groups online/offline?

A: Open source community in UM. IT Developer locally.

Q: What is your main goal for joining in community?

A: Best practice. Compare how other people and me doing things.

Q: How do you find out?

A: Email list. Because of free food

Q: How long?

A: 1-1.5yr

Q: Last time experience?

A: Last friday, COP discussion. Ask questions. Difficulty they met, eat some food.

Q: Do you think joining a community assist your job as a developer?

A: It has positive affect on my work.

Insights:

1. Biggest challenge is working with container or finding right apis or libraries.
2. He mainly writes codes that are compatible with other tools.
3. He uses Google and Red-hat (for Kubernetes) most oftenly, because the website also has discussion part.
4. His goal is to understand the system as a whole rather than just find a one-time solution to a specific problem he's having.
5. He always goes to the official documentation first, then Googles it if he doesn't find the answer there
6. He likes Red Hat because he works with their software a lot and likes getting the official answer from the developer
7. He doesn't like the search functions on Stack Overflow or Red Hat and would just find the relevant threads on those sites through Google
8. He was annoyed that the Red Hat site had so much marketing even though he was on the highest-paying tier of account with UM
9. He liked going to Meetups in A2 area for networking and free food and to learn best practices
10. He also hangs out informally with programmer friends to 'talk shop'

11. He doesn't participate in online communities much
12. He finds it helpful to write ideas on a whiteboard.
13. Sometimes answers on Stack Overflow are out of date (for older version of software)