



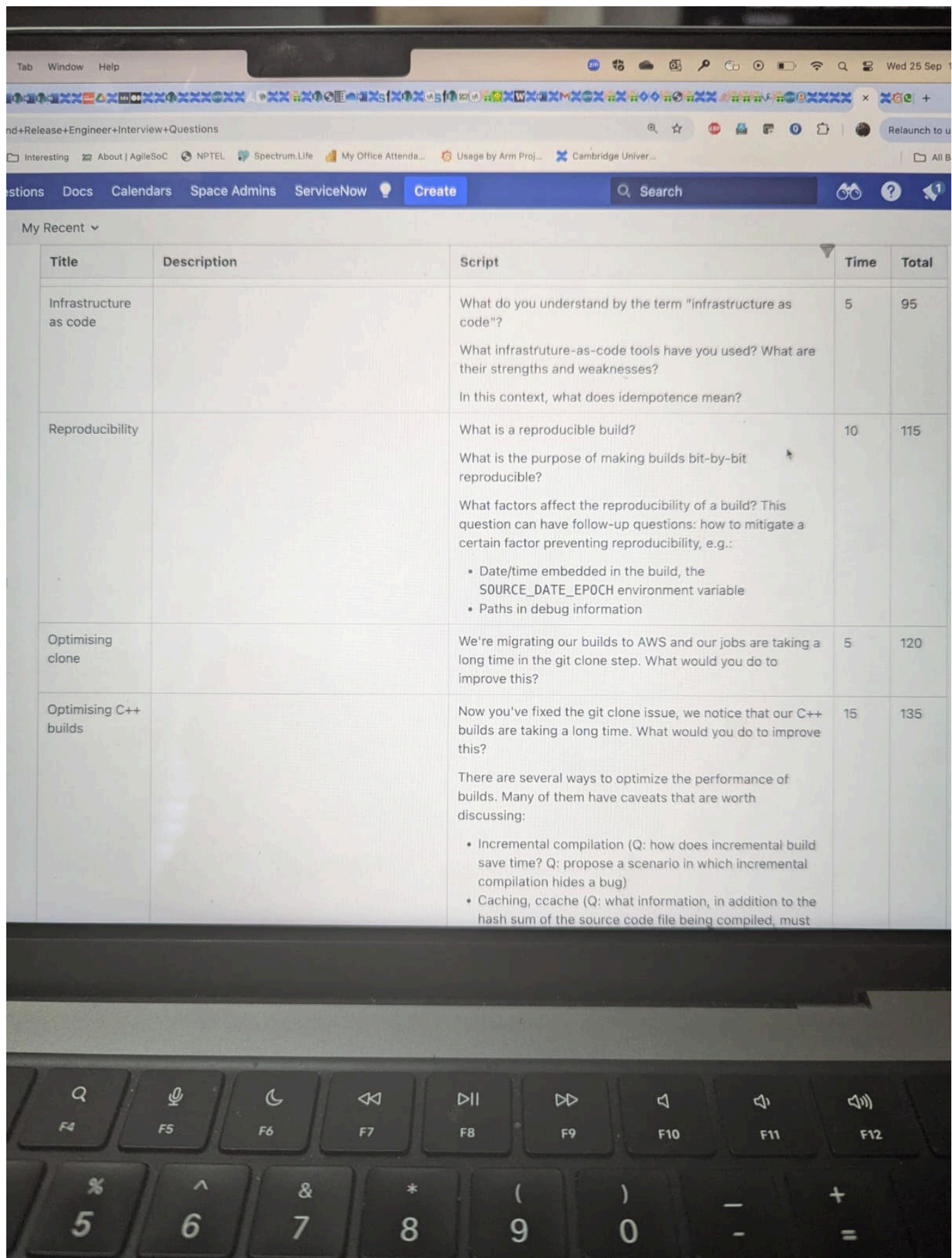
parul patel <galaxy.parul@gmail.com>

Part1

1 message

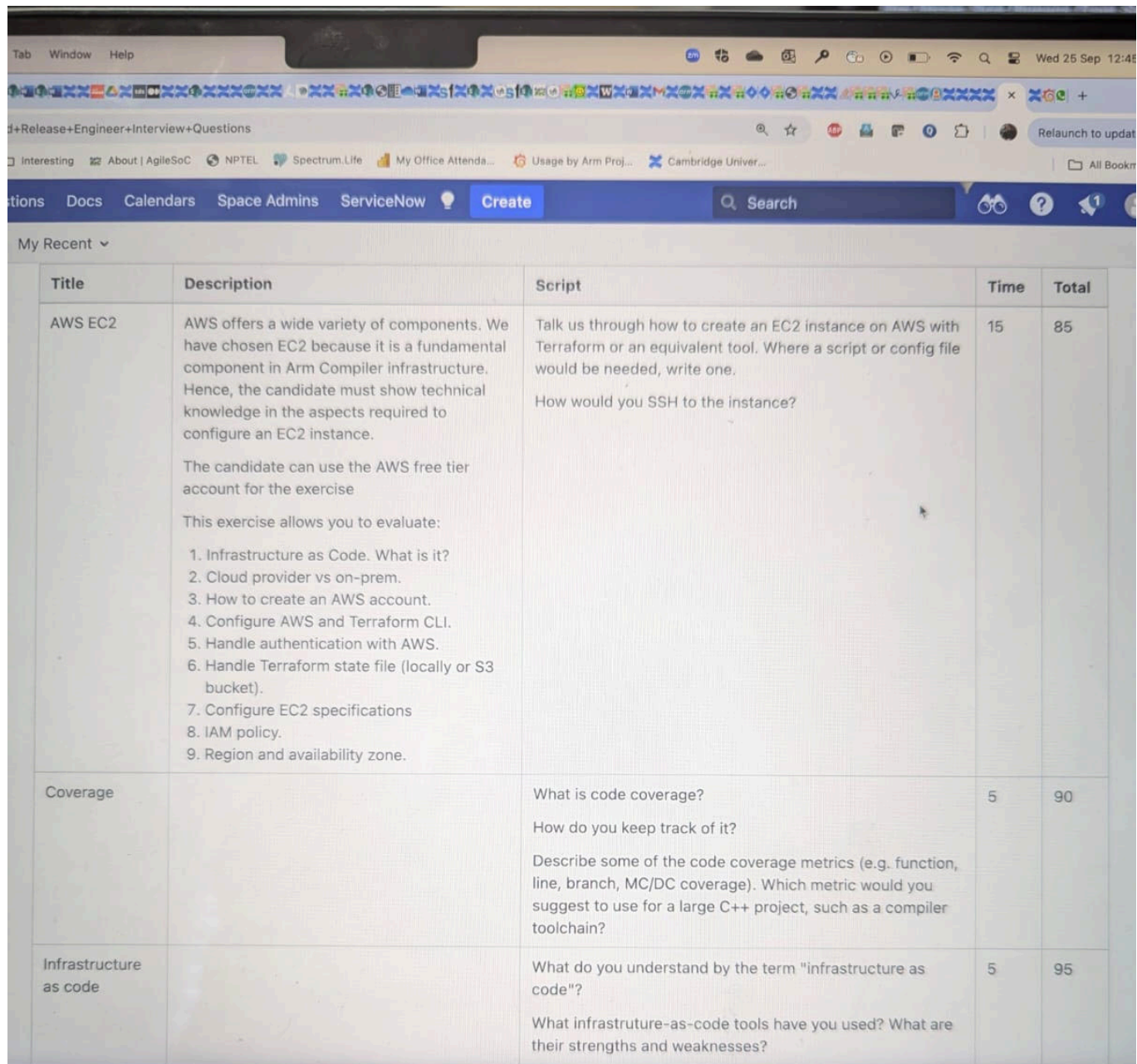
parul patel <galaxy.parul@gmail.com>
To: parul patel <galaxy.parul@gmail.com>

Wed, Sep 25, 2024 at 1:29 PM



The screenshot shows a web browser with multiple tabs. The active tab displays a table of interview questions. The browser's address bar shows a URL starting with "nd+Release+Engineer+Interview+Questions". The table has five columns: Title, Description, Script, Time, and Total. The questions are categorized under "My Recent".

Title	Description	Script	Time	Total
Infrastructure as code		<p>What do you understand by the term "infrastructure as code"?</p> <p>What infrastructure-as-code tools have you used? What are their strengths and weaknesses?</p> <p>In this context, what does idempotence mean?</p>	5	95
Reproducibility		<p>What is a reproducible build?</p> <p>What is the purpose of making builds bit-by-bit reproducible?</p> <p>What factors affect the reproducibility of a build? This question can have follow-up questions: how to mitigate a certain factor preventing reproducibility, e.g.:</p> <ul style="list-style-type: none">• Date/time embedded in the build, the SOURCE_DATE_EPOCH environment variable• Paths in debug information	10	115
Optimising clone		<p>We're migrating our builds to AWS and our jobs are taking a long time in the git clone step. What would you do to improve this?</p>	5	120
Optimising C++ builds		<p>Now you've fixed the git clone issue, we notice that our C++ builds are taking a long time. What would you do to improve this?</p> <p>There are several ways to optimize the performance of builds. Many of them have caveats that are worth discussing:</p> <ul style="list-style-type: none">• Incremental compilation (Q: how does incremental build save time? Q: propose a scenario in which incremental compilation hides a bug)• Caching, ccache (Q: what information, in addition to the hash sum of the source code file being compiled, must	15	135



Title	Description	Script	Time	Total
AWS EC2	<p>AWS offers a wide variety of components. We have chosen EC2 because it is a fundamental component in Arm Compiler infrastructure. Hence, the candidate must show technical knowledge in the aspects required to configure an EC2 instance.</p> <p>The candidate can use the AWS free tier account for the exercise</p> <p>This exercise allows you to evaluate:</p> <ol style="list-style-type: none">1. Infrastructure as Code. What is it?2. Cloud provider vs on-prem.3. How to create an AWS account.4. Configure AWS and Terraform CLI.5. Handle authentication with AWS.6. Handle Terraform state file (locally or S3 bucket).7. Configure EC2 specifications8. IAM policy.9. Region and availability zone.	<p>Talk us through how to create an EC2 instance on AWS with Terraform or an equivalent tool. Where a script or config file would be needed, write one.</p> <p>How would you SSH to the instance?</p>	15	85
Coverage		<p>What is code coverage?</p> <p>How do you keep track of it?</p> <p>Describe some of the code coverage metrics (e.g. function, line, branch, MC/DC coverage). Which metric would you suggest to use for a large C++ project, such as a compiler toolchain?</p>	5	90
Infrastructure as code		<p>What do you understand by the term "infrastructure as code"?</p> <p>What infrastructure-as-code tools have you used? What are their strengths and weaknesses?</p>	5	95

Tab Window Help

Wed 25 Sep 1

+Release+Engineer+Interview+Questions

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My Recent

Title	Description	Script	Time	Total
clone		long time in the git clone step. What would you do to improve this?		
Optimising C++ builds		<p>Now you've fixed the git clone issue, we notice that our C++ builds are taking a long time. What would you do to improve this?</p> <p>There are several ways to optimize the performance of builds. Many of them have caveats that are worth discussing:</p> <ul style="list-style-type: none">• Incremental compilation (Q: how does incremental build save time? Q: propose a scenario in which incremental compilation hides a bug)• Caching, ccache (Q: what information, in addition to the hash sum of the source code file being compiled, must be included in the cache to avoid false-positive cache hits?)• Compiler flags (Q: given that compiler optimizations are supposed to preserve the behavior of the program, why can they sometimes still affect the behavior? what is typically meant by "debug" and "release" configurations?)• Compiler and linker performance	15	135
Logging		Each Jenkins build creates many gigabytes of logs. This is expensive to store, and makes it hard to find useful information. What would you do about it?	5	140

Behavioral -> Zoltan + Volodymyr/A line manager

As usual.

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Build, Release, CI, DevOps and Software Engineering combined -> Michael/Lucas/Mikhail + someone from the AC list

Review the test assignment as usual. Less compiler specific questions – focus on toolchain features or automation instead, if relevant.

General questions:

1. CI/CD concepts
2. Gerrit
3. Jenkins
4. Python
5. AWS
6. Linux, Windows, MacOS experience

Specific:

1. C/C++ build tools, build issues with big projects.
2. Conan or other package managers?
3. Branch and release management for non-cloud setup.

Prep

Create a new document in <https://collabedit.com/> and copy the link, ready to share with the candidate. (Other code sharing sites exist and have nicer features but Michael has found this)

Set up an AWS free tier account in readiness for the "AWS EC2" question.

Have a terminal session ready to share via Zoom.

Questions

TODO: these questions will take longer than 2 hours so some pruning is needed.

Title	Description	Script
Introductions	Interviewers & candidate introduce themselves. Interviewer gives a very quick overview of what questions are coming up.	
FizzBuzz	This is a thinly disguised version of FizzBuzz. The candidate should be able to do it fairly easily in which case it boosts their confidence, and gets them comfortable with the mechanics of the interview. If they can't then consider terminating the interview early.	In collabedit, write a program in C or C++ that prints the numbers from 1 to 100. But for multiples of four print "Snap" instead of the number and for the multiples of five print "Dragon". numbers which are multiples of both four and five print "SnapDragon". <Interviewer shares terminal window>. Let us know whenever you want to run the code and we'll copy-paste and run it for you.
Semantic versioning	Versioning is a topic you'd expect a build/release engineer to be very familiar with. This exercise gives them an opportunity to demonstrate this understanding with some simple scripting. Extra points if they differentiate between 0.y.z and 1-or-later.y.z i.e. minor versions before version 1 are not	What is semantic versioning? How is it useful? What are its weaknesses?

Files Tab Window Help

Wed 25 Sep 12:45 PM

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Questions Docs Calendars Space Admins ServiceNow Create Search

My Recent

Questions

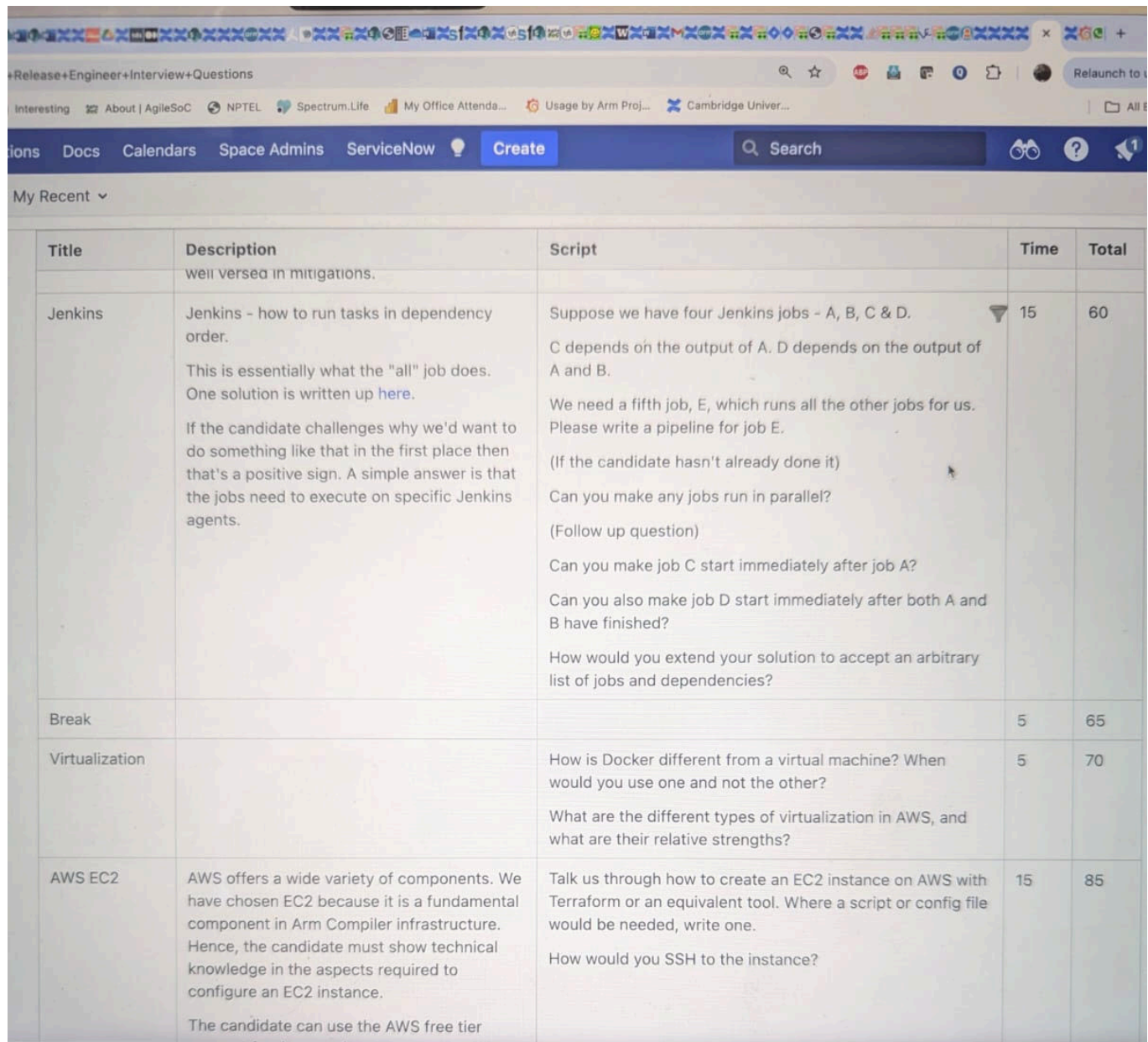
TODO: these questions will take longer than 2 hours so some pruning is needed.

Title	Description	Script	Time	Total
Introductions	Interviewers & candidate introduce themselves. Interviewer gives a very quick overview of what questions are coming up.		5	5
FizzBuzz	This is a thinly disguised version of FizzBuzz. The candidate should be able to do it fairly easily in which case it boosts their confidence, and gets them comfortable with the mechanics of the interview. If they can't then consider terminating the interview early.	In collabedit, write a program in C or C++ that prints the numbers from 1 to 100. But for multiples of four print "Snap" instead of the number and for the multiples of five print "Dragon". For numbers which are multiples of both four and five print "SnapDragon". <Interviewer share their terminal window>. Let us know whenever you want to run the code and we'll copy-paste it here and run it for you.	15	20
Semantic versioning	Versioning is a topic you'd expect a build/release engineer to be very familiar with. This exercise gives them an opportunity to demonstrate this understanding with some simple scripting. Extra points if they differentiate between 0.y.z and 1-or-later.y.z i.e. minor versions before version 1 are not compatible with each other.	What is semantic versioning? How is it useful? What are its weaknesses? Implement a function in Python to check, using semantic versioning, whether a version requirement is compatible with a version number.	10	30
CMake debugging	e.g. linker error - missing library		10	40
Intermittent failures	Flaky infrastructure is a fact of life so an experienced build/release engineer should be well versed in mitigations.	Sometimes we notice a Jenkins job fails intermittently. What might cause this? What would you do to address this?	5	45
Jenkins	Jenkins - how to run tasks in dependency	Suppose we have four Jenkins jobs - A, B, C & D.	15	60

F4 F5 F6 F7 F8 F9 F10 F11 F12

5 6 7 8 9 0 - =

T Y U I O P { }



Title	Description	Script	Time	Total
Jenkins	<p>well versed in mitigations.</p> <p>Jenkins - how to run tasks in dependency order.</p> <p>This is essentially what the "all" job does. One solution is written up here.</p> <p>If the candidate challenges why we'd want to do something like that in the first place then that's a positive sign. A simple answer is that the jobs need to execute on specific Jenkins agents.</p>	<p>Suppose we have four Jenkins jobs - A, B, C & D.</p> <p>C depends on the output of A. D depends on the output of A and B.</p> <p>We need a fifth job, E, which runs all the other jobs for us. Please write a pipeline for job E.</p> <p>(If the candidate hasn't already done it)</p> <p>Can you make any jobs run in parallel?</p> <p>(Follow up question)</p> <p>Can you make job C start immediately after job A?</p> <p>Can you also make job D start immediately after both A and B have finished?</p> <p>How would you extend your solution to accept an arbitrary list of jobs and dependencies?</p>	15	60
Break			5	65
Virtualization		<p>How is Docker different from a virtual machine? When would you use one and not the other?</p> <p>What are the different types of virtualization in AWS, and what are their relative strengths?</p>	5	70
AWS EC2	<p>AWS offers a wide variety of components. We have chosen EC2 because it is a fundamental component in Arm Compiler infrastructure. Hence, the candidate must show technical knowledge in the aspects required to configure an EC2 instance.</p> <p>The candidate can use the AWS free tier</p>	<p>Talk us through how to create an EC2 instance on AWS with Terraform or an equivalent tool. Where a script or config file would be needed, write one.</p> <p>How would you SSH to the instance?</p>	15	85