Data Science Career Track Mock Interview Guide

Springboard

April 3, 2019

Interview Types and Expectations

Interview types vary by company and by role within the role. The purpose of the Springboard mock interview program is to familiarize you with the most common interview types in the field of Data Science. Variations of the Data Scientist role and you're leveling also see additional types beyond those covered in this manual. For example, a manager will have an interview that assesses talent management and recruiting whereas a Machine Learning Engineer may have interviews that focus on algorithm development and deployment to production. The Data Science Track consists of the following four types of interviews: **project walkthrough, technical, coding** and **non-technical behavioral.** The interviewer's responsibility is to assess you based on the particular interview type you are assigned.

Springboard Completion Requirement

In order to be eligible for our job guarantee, you'll need to pass all four mock interviews: **project walkthrough, ML architecture/problem solving, coding and non-technical behavioral.** You'll have two chances to pass each interview. If you don't pass one or more of the interviews, you'll still be able to complete the course but will **no longer be eligible for the job guarantee.**

Interview Type Name	Minutes	Description
Project Walkthrough	60	A technical or non-technical discussion about a project you have recently completed.
Technical	60	An open-ended problem solving exercise directly related to the methods and tools used by Data Scientists.
Coding	60	A coding exercise directly related to data science (level 1), or a combination of algorithms and run time exercise and a level 1 exercise (level 2).
Non-Technical Behavioral	30	A discussion about your philosophy and career goals and how you may fit within an organization.

The **project walkthrough** can be executed as either a technical or non-technical interview but is typically technical. A technical project walkthrough is geared towards you if you work in a team setting with other data scientists or work with software engineers. A non-technical project walkthrough is geared more towards you if you work with project managers, and internal clients that do not have a scientific background. You should expect a technical project walkthrough in your mock interview. The purpose of the project walkthrough is to:

- Give signal on how you approached a problem and solved it

- Give hiring managers an opportunity to see how you communicate.
- Allows hiring managers to see whether or not you have a passion for working with data.

The **ML Problem Solving** interview (sometimes called a **Technical Data Science** interview) assesses your knowledge in tools and methods used as a data scientist. You are given a data science related problem solving task where you are assessed in your knowledge of the data science lifecycle. This is very similar to a technical project walkthrough except that the project is assigned rather than chosen by you. The interviewer and you can guide the conversation however you'd like, but discussions typically follow the data science lifecycle even if roughly.

The **coding** interview can be done in one of two levels. At the first level, you are given one or two coding exercises related only to data science. In the second level, you may be asked a general programming exercise with a discussion of runtime and algorithms. It is up to the career coach and mentor to decide which level (or both) is appropriate for you based on your background and career goals.

Finally, the **non-technical** interview is essentially a **behavioral** interview. The purpose of this interview is to check that your career trajectory and goals align with the position. It is also a way to determine whether or not you are a *cultural fit* for a company. This type of interview is typically conducted by a senior manager at a company. While it can be an easier interview for you, it is fairly difficult for the interviewer because the purpose of the interviewer is to gauge subjective factors about you.

Project Walkthrough

The project walkthrough is a common interview type for Data Scientists, particularly Data Scientists that have just graduated with a related degree, or if you are switching fields without much work experience in the field. The project walkthrough typically consists of the interviewer asking you to describe a recent project you completed. The project should contain a sufficient Data Science component that involves the full lifecycle of Data Science work.

In some cases, certain phases at the beginning or end of the cycle may not be significant enough to discuss, but the bulk of the process should be present and sufficient enough for a discussion. The particular phases to be covered include, but are not limited to the list on the page that follows. The key point for you to remember is that *every statement you make typically inspires more questions* from the interviewer.

Stages in the Data Science Life Cycle to be Assessed

1. **Purpose, motivation and description:** What did you do? Why was it important? You should be able to:
   - Thoroughly explain you what problem you tried to solve and why the problem was important, even if there was no real client.
   - Describe the dependent variable, its type (real value, binary etc.) and its scale.
   - Describe the important variables that played a role in your hypothesis, your model and your conclusion. While not every variable may be used in the model or be significant, it is important for you to thoroughly discuss what variables and features you believed would be interesting to study.

     Note: In cases where the problem involves other media such as words (NLP), groups of pixels (image processing and computer vision) and waveforms (audio processing), the features may not be as well defined, but you should be able to adequately describe what they are.

2. **Data acquisition:** How was the data obtained? You should be able to *clearly* identify where the data originated.
   - In some cases, data acquisition may be limited to a database query or someone providing a file. These situations are common, and although not ideal, give the interviewer the opportunity to further probe into your technical ability with other guiding questions. Even in the case of a simple database query, questions could involve asking about nuances of the query that was executed.
   - In other cases, you may have used other data acquisition methods such as writing a scraper, designing a piece of hardware like an Arduino or Raspberry

Pi. In these cases, it is much easier to ask followup questions. If the data acquisition consisted of someone handing data to you, interviewers may ask you if you have in the past worked with data that came from other sources and the nature of that work.

3. **Data management:** You should be able to:
   - Specify the format the original data was in and the amount of data involved
   - Specify what type of processing was required to get the data into a format that could be analyzed. For example, you may discuss that you had to convert JSON data into a CSV file.

4. **Data cleaning:** For a data scientist role, you should have some experience working with datasets that are not completely clean and should be able to:
   - Explain how you handled data errors, missing values and other discrepancies.
   - Describe any new variables you created to aid in analysis.

5. **Exploratory Data Analysis:** You should be able to:
   - Provide a lengthy explanation of what you did with the data before throwing it into a model
   - *Clearly* identify which variables you looked at, what plots and diagnostic tests you used to determine which variables were interesting.
   - Questions could include: which variables you looked at and why, or which ones you didn't look at and why, what kinds of transformations you performed, visualizations you used and so on.

   IMPORTANT! It is important to recognize that in certain situations, the project may not have included a lot of EDA, and perhaps none at all. For example, in natural language processing and computer vision projects, there is usually no notion of observing visual relationships between individual words/pixels unless you did a more sophisticated analysis. This is acceptable as long as there was a significant feature selection phase.

6. **Feature Selection:** You should be able to:
   - Explain how you determined which variables were important for *predicting* the dependent variable.
   - Describe both visual analysis (which type of plot) that shows the relationship between a predictor and the response variable, as well as any tests performed to confirm a relationship.
   - NOTE: For Deep Learning, NLP and computer vision projects, feature selection is typically an automated process. You should be able to explain the test that was used in general terms such as "I used chi-squared feature selection to determine which words were important in determining sentiment. Chi-squared feature selection compares the number of times each word appeared in each

category to the number of times we would *expect* the term to appear in each category." Automated feature selection may also be used for standard analyses but you must be able to explain how the feature selection works. Some feature selection methods come free with the choice of model such as LASSO or forests.

7. **Modeling:** This is the most laborious and intense part of this interview format. You must describe the types of models you used to make predictions and especially *why* the model was an appropriate choice and why other models were not appropriate. You may say that you tried "all of the basic model types" but you should be able to explain why certain models worked better than others. You *should not* waste time explaining models that did not work unless mentioned only in passing. *This is the phase where many of you run into trouble.* You should:
   - Clearly know the difference between supervised learning and unsupervised learning
   - Clearly know the difference between regression and classification.

   Some guiding questions for *classification* include: why you chose a certain model and not others, what the advantages and disadvantages of different models are, and how you picked parameters for the model you used.

   Follow-up questions can go a lot deeper into the specific models that you used in the project.

8. **Evaluation:** This phase is the most overlooked phase by most of you, and usually yields insufficient responses that result in No Hire decisions. You must describe how you measured the performance of your model. For a classification problem, you must discuss dividing the data into a training and testing set (or using K-fold cross-validation on a dataset). While accuracy may be an appropriate metric to measure performance, you should be pressed to describe why accuracy is the best metric for your case, and be pressed to explain why it is not a good metric *in general*. You must adequately defend your reasoning for using the performance metric whatever it may be and must define it correctly. You should be able to discuss the importance of the *business case* when picking the evaluation metric.

   For a regression context, evaluation may or may not contain splitting the data into a training and testing set. There are researchers in both camps. Statisticians tend to not split the dataset and rely on verifying model assumptions. Machine learning people tend to split the dataset and rely on RMSE or an F-statistic (not the same as the F-score). You must discuss the R^2 as well as other diagnostic statistics such as F-statistic, log-likelihood, or AIC.

9. **Communicating Findings:** This phase may be the least significant for you in this program, but it is an important one in the job search. Once you have completed the evaluation phase of the project walkthrough, a good way to introduce this last

phase is to ask "then what?" You may revert back to discussing more about the model evaluation. If your responses make sense and provide signal, continue talking. If you seem to start spinning in a circle, explain that you are cueing them to discuss what you did with the results. The key signal that an employer looks for here is the *impact* of your work. Some guiding questions:

    (1) What did you learn about the data and the problem you were trying to solve?

    (2) Who may be interested in the results and what recommendations would you make to such a client?

    (3) Is the work done? What more would you want to do with the data?

They will advise you that an employer would *typically* be interested in impact and next steps. Depending on your project, you may have done some post hoc work, otherwise, you'll be advised that the impact can be discussed as the following:

    (1) money saved or revenue increased

    (2) making a smart business decision

    (3) developing an ETL or dashboard for reproducibility and relevance

    (4) further work on the project

    (5) developing a web application that uses results to provide timely information

    (6) a presentation to management, stakeholders or executives

    (7) an infographic that is displayed to some audience internally or on the web

    (8) a blog post that is displayed to some internal audience or on the web

    (9) several other outcomes

10. **Conclusion and Summary (optional):** The interviewer may wish to ask you to summarize your work. While this is not required to complete an interview, it may give the interviewer some signal on what you believe are the important messages to take home regarding your work. If you drag out the summary, it is a sign that you don't understand what importance your work has and that you just "went through the motions."

The project walkthrough interview type also addresses the following behavioral characteristics which should be noted in interviewer feedback, or discussed with you:

- **Clear and effective communication**: the interviewer should use verbal cues to you when you are not communicating clearly. This helps you change how you are speaking throughout the interview. If after some time you still cannot adjust, this might be noted.
- **Technical breadth and depth:** anytime the interviewer is not clear about what you are talking about, it is the interviewer's responsibility to ask for clarification. If you cannot clarify, or do so incorrectly, that might be noted and taken into account in the final evaluation.
- **Patience and cooperation:** most of you are gracious with the interviewer's time. There have been cases in *industry* where you do not cooperate with the interviewer

and act as though the interview is beneath you. Behavior such as this must be noted. Given the nature of the Springboard program, this should never occur, but in real job interviews it does. Not cooperating or being impatient with the interview can be inferred as being directly transferrable to how you will function in a team setting.

- **Teamwork (if applicable):** If any part of the project was done in a team, you should clearly distinguish who did what. If you attempt to make it sound like you did everything, or did "all the hard work," this is not a good sign. This situation is unlikely in the Springboard program, but does happen in industry.
- **Passion for working with data:** You should show passion for working with data. The interviewer should note the overall flow of the interview. Is the interviewer interested in what you are talking about? Do you make passing references to what you learned and what else you want to try to improve your work? Do you show that you enjoy working with data? If not, this is a bad sign and something that should be discussed in interview feedback.

General Flow

The interviewer will spend the first few minutes introducing themselves and providing some context for the interview, and then the next **50 minutes** will be spent discussing your project and asking questions.

If you made a decision that does not make sense to the interviewer, the interviewer may **ask** you to clarify what you meant and why you made that decision. If you give a response that makes an assumption, the interviewer may **ask** you about the tradeoffs involved in your choice and then ask you if you would have done the same thing if you did the project again. The interviewer's goal is to keep asking you questions about a particular topic related to your project until they are satisfied you cannot go any further. Once the interviewer has reached this point, the interviewer has enough information about your level of expertise in a particular part of the process will continue discussing the next stage of your project.

Candidate Evaluation

The interviewer is encouraged to share verbal or written feedback with you during the final **10 minutes**. You should also be given a score on a 5-point scale for internal consistency, calibration and for you if you wish to know.

A score of **3** represents a borderline PASS. Since companies err on the side of preventing false positives, it is very common for the average evaluation to be borderline and it is left up to the other interviewers on the panel to break the tie. A score of **4** represents a clear PASS. If the interviewer was hiring for a hypothetical company, they are satisfied and have confidence that you understand the material necessary for a junior level role.

Score	Description
5	You showed full competency in all areas and rarely needed assistance in describing a concept from the interviewer. If you receive a 5 it means you gave a solid interview, and the flow of the interview should feel more like a "talk" or "seminar" on your project with discussion. The interviewer should feel that you are speaking to a peer. During discussion, you adequately defended your methodology and assumptions with data. The interviewer saw only small room for improvement but no methodology issues or discrepancies with your implementation of the project. You experimented and discussed new ideas or technologies you may have tried and clearly explained why you used them and what you learned. A good sign of a 5 is if the interviewer felt you showed them something new in addition to doing well. A score of 5 represents a strong PASS and would probably be rare if you did not come in with a technical background.
4	You showed competency in some areas and more advanced understanding in others. Your responses to technical questions and methodology were correct or nearly correct in every instance or were quickly mentored to the correct solution. You showed that you did thorough EDA, modeling and evaluation phases but may not have been as strong on the periphery phases such as data acquisition and post-hoc work such as presenting the work, developing slides, etc. During discussion, you made assumptions based on data and also adequately defended your methodology. The interviewer saw no conceptual deficiencies, and only gave suggestions to make the work "better" rather than "correct."
3	You showed basic competency in all areas of the data science lifestyle evaluated. While your discussion of the project may not have stood out from others, you showed that you are able to understand data science fundamentals at a level where you can be mentored and research more sophisticated concepts with mentoring. During discussion, you may have made assumptions that were plausible at face value, but not tested with data. You tried to defend your methodology and was usually successful but understood where your reasoning was not valid or incomplete.The interviewer could identify some minor deficiencies that could be repaired with mentoring. This case represents a borderline PASS on a standard interview.
2	You showed basic competency in some areas and lacked competency in others. You did not defend, or did not adequately defend, some of your methodology and did not make plausible assumptions in some cases. You did not show consistent understanding of the methods that were being applied, and may have referred to software packages too much (i.e. "I would run the fit command in sklearn"). You showed a very weak or shallow understanding of algorithms (i.e. PCA is for dimension reduction but can't describe it). The interviewer identified significant deficiencies that would require significant mentoring to overcome.
1	You showed very little understanding of your methodology and the choices that you made. You could not defend your methodology and your assumptions were ad hoc and implausible. You may have expressed an over-reliance on software packages with little to no understanding of the algorithms. The interviewer may question how you were able to implement the solution independently.
0	You did not complete the interview or did not give any responses.

ML Problem Solving (aka Technical)

The technical interview typically consists of the interviewer asking you to solve a data science related problem related to the business. This type of interview is very open-ended and it is up to the interviewer to develop a problem that they themselves can solve that is interesting to them. Typically the questions asked meets the following guidelines:

- The task should require significant thought and should be able to be solved in a variety of creative ways.
- The task should be broad enough that it requires **50 minutes**.
- The task should inspire discussion and questions about your methodology and assumptions.
- The task should have a wide breadth of solutions that can be used to *level* your skills. If you provide a simple solution, the interviewer should be able to encourage them to think of a more sophisticated or rigorous solution.
- The task should require you to describe *all* of the phases of the data science lifecycle. While certain tasks may downplay certain phases, all of them should be discussed to some degree.
- The verbal prompt given to you should contain enough information so that you know what to do, but should also be vague enough so that you come up with your own solution.

General Flow

Similar to the project walkthrough interview, the interviewer introduces themselves at the beginning, provides some context and then spends the next **50 minutes** on the task at hand. At the beginning, the interviewer describes the problem to be solved and then hand the reins over to you. Throughout the interview, the interviewer guides you towards a solution, regularly **asking** you to clarify what you mean. If you give a response that makes an assumption, the interviewer may **ask** you about the tradeoffs involved in your choice and then ask them if you still want to use that method or if you want to try something else. The interviewer's goal is to keep asking you questions about a particular topic related to your project until they are satisfied you cannot go any further. Once the interviewer has reached this point, the interviewer has enough information about your level of expertise in a particular part of the process and will continue discussing the next stage of the problem.

Candidate Evaluation

The interviewer is encouraged to share verbal or written feedback with you. You should also be given a score on a 5-point scale for internal consistency and calibration for you if you wish

to know. This feedback should be shared in the last **10 minutes** of the interview, or via email. A score of **3** represents a borderline PASS. Since companies err on the side of preventing false positives, it is very common for the average evaluation to be borderline and it is left up to the other interviewers on the panel to break the tie. A score of **4** represents a clear PASS. If the interviewer was hiring for a hypothetical company, they are satisfied and have confidence that you understand the material necessary for a junior level role.

Score	Description
5	You showed full competency in all areas and rarely needed assistance or course correction from the interviewer. If you receive a 5 it means you gave a solid interview, and the flow of the interview should feel more like a team discussion on how to solve the problem at hand. The interviewer should feel that you are speaking to a peer. During discussion, you made and proved assumptions, and adequately defended your methodology. If you were to implement the solution as is, it would be solid with only room for improvement but no methodology issues or discrepancies. You showed an understanding of the mathematics of the algorithm behind the methods that were applied and not just the results. You may have experimented and discussed new ideas or technologies you may wish to try and clearly explained why. A good sign of a 5 is if the interviewer felt you taught them something new in addition to doing well. A score of 5 represents a strong PASS and would probably be rare if you did not come in with a technical background.
4	You showed basic competency in some areas and more advanced competency in others. Your responses were correct or nearly correct in every instance or were quickly mentored to the correct solution. You showed that you had a solid understanding of the EDA, modeling and evaluation phases but may not have been as strong on the periphery phases such as data acquisition and communicating findings. During discussion, you made assumptions and tested those assumptions with data and also adequately defended your methodology. If you were to actually implement the solution to the problem as is, there should be no deficiencies, and the interviewer's feedback would just be suggestions to make the work "better" rather than "correct." Your goal should be to deepen your understanding of areas that were missed in the interview and develop an intuition or mathematical understanding for the methods used rather than a practical understanding.
3	You showed basic competency in all areas of the data science life cycle evaluated. While you may not have stood out from others, you showed that you are able to understand data science fundamentals at a level where you can be mentored and research more sophisticated concepts with mentoring. During discussion, you may have made assumptions that were plausible at face value, but not tested with data. You tried to defend your methodology and was usually successful but understood where your reasoning was not valid or incomplete. If you were to implement the solution as is, there would be some minor deficiencies that could be repaired with mentoring. This case represents a borderline PASS on a standard interview. Your goal should be to deepen your understanding of the life cycle and the methods involved in each phase of it for more reliable success.
2	You showed basic competency in some areas and lacked competency in others. You did not defend, or did not adequately defend, some of your methodology and did not make plausible assumptions in some cases. You did not show consistent understanding of the methods that were being applied, and may have referred to software packages too much (i.e. "I would run the fit command in sklearn"). You showed a very weak or shallow understanding of algorithms (i.e. PCA

	is for dimension reduction but can't describe it). If you were to implement the solution as is, there would be significant deficiencies that would require significant mentoring to overcome.
1	You showed very little understanding of your methodology and the choices that you made. You could not defend your methodology and your assumptions were ad hoc an implausible. You may have expressed an over-reliance on software packages with little to no understanding of the algorithms. You would not be able to implement your solution independently.
0	You did not complete the interview or did not give any responses.

Coding

The coding interview typically consists of exercises directly related to data science, typically data management. This type of interview is fairly objective compared to the others and it is up to the interviewer to develop a problem. Coding exercises in this interview are of two levels: level 1 and level 2. Level 1 is an exercise that is *directly* related to data science and is typically a data management problem involving general programming and SQL. A level 2 exercise is reserved for you if you have an engineering background and may wish to go further in that direction. Level 2 exercises involve algorithm development, data structure and runtime analysis.

Coding tasks meet the following guidelines:

- A level 1 task should be *directly related* to data science. It must involve working with data structures for data management.
- There should be at least one task that involves SQL.
- A lot of interviewers will be familiar with Python, but most large companies are language agnostic. Please use the programming language you are most comfortable with. However, if you are equally comfortable with Python and another language, we encourage you to use Python. At larger companies, the interviewer may choose to even try out the code in Python after the interview.
- Sometimes, an interviewer may choose a task that can be solved in both SQL and another language one right after the other.
- While most should be familiar with Pandas for data management, you should be encouraged to use base Python data structures as this is what most employers will be looking for. Once you have answered the question as best you can, they'll allow you to write your solution in Pandas as a confidence boost.
    - A level 2 task involves algorithms and data structures and analyzing runtime. There are tons of examples of these types of problems on the Internet and sites like <u>coderbyte.com</u>, leetcode.com and glassdoor.com
- Level 2 exercises are typically solved in any language and do not use external libraries. Although the interviewer may not know the language, the syntax and exercise is basic enough that he/she can still provide assistance.

General Flow

The interviewer will introduce and provide context in the first few minutes, and then spend **50 minutes** on coding tasks.

The interview will use <u>coderpad.io</u>, a collaborative coding platform. Throughout the interview, the interviewer will guide you towards a solution. If you make a decision that does not make sense to the interviewer, they may **ask** you to clarify what you mean. If you code a response that makes an assumption, the interviewer may **ask** you about the tradeoffs

involved in your choice and then ask you if you still want to use that method or if you want to try something else. If you have a bug in your code, the interviewer may first ask you to

check your code, and then point out where the bug is *or* give you an edge case where your code fails. For a level 2 coding task, the interviewer may ask you the time complexity of your method and if there is a faster way to solve the problem if your implementation is not optimal. A typical time breakdown of the different types of coding interviews:

Type	Minutes	Description
Level 1 Programming	15	A data management task or set of related subtasks in any language (most likely Python).
Level 1 SQL	10	Either a separate data management task to be implemented in SQL, or a reimplementation of the existing Python tasks into SQL.
Level 2 Algorithms	25	A classic algorithms and data structures general programming task with discussion of runtime.

Candidate Evaluation (Level 1)

The interviewer is encouraged to share verbal or written feedback with you during the last **10 minutes** if possible. You should also be given a score on a 5-point scale for internal consistency, calibration and for you if you wish to know. If a Level 2 task was also used, feedback from both should be shared and the interviewer should report the average of the two exercise types (level 1 and level 2), and also give individual scores on both parts.

A score of **3** represents a borderline PASS. Since companies err on the side of preventing false positives, it is very common for the average evaluation to be borderline and it is left up to the other interviewers on the panel to break the tie. A score of **4** represents a clear PASS. If the interviewer was hiring for a hypothetical company, they are satisfied and have confidence that you understand the material necessary for a junior level role.

Score	Description
5	You were able to code correct solutions to both the general programming exercises and SQL exercises with little assistance from the interviewer and was also able to identify areas where code could be further optimized for faster performance or less space. While a 5 is meant to be rare, it can be achieved by identifying optimizations in either exercise combined with strong (4) performance on the other exercise type.
4	You were able to code correct solutions to both the general programming exercises and the SQL exercises without much assistance from the interviewer — assistance was limited to syntax issues and not to misunderstanding of concepts (i.e. HAVING vs WHERE Is conceptual, UNIQUE var vs UNIQUE(var) is syntactical).

3	You were able to code correct solutions to most of the exercises with only minor syntactical issues in others. This performance must be consistent across both the general programming exercises and the SQL exercises since both are crucial. The interviewer may have given you some hints and corrected minor misunderstandings which you then corrected. This is equivalent to a borderline PASS.
2	You were able to code mostly correct solutions to both the general programming exercises and the SQL exercises but required significant assistance from the interviewer. The final code contained syntax errors and significant conceptual issues had to be corrected by the interviewer. *OR* you performed inconsistently in both types of exercises performing very well on general programming and very poorly in SQL. The tendency would be to average both scores. A 5 and 1 average out to a 3 but this suggests you may not meet the job requirements which usually specify a programming language and SQL. In this case, you cannot receive a "passing" score.
1	You were not able to code a solution without significant assistance from the interviewer, and still the solution was not correct in most cases. The final code may contain syntax errors of the level that would require significant editing to get to run.
0	You did not complete the interview or did not give any responses.

Candidate Evaluation (Level 2)

Expectations are similar for level 1 (general data science programming and SQL) and the scores for level 1 and 2 should be recorded individually and also averaged for an overall interview score.

Score	Description
5	You not only provided a correctly coded optimal solution, but also tested the solution in your mind with various use cases, and were able to discuss other caveats related to the algorithm (i.e. what if we allow negative numbers? What if we allowed duplicates? See the sample level 2 exercise).
4	You correctly coded a non-optimal solution and was able to generate an optimal solution only being told that the solution was not optimal by the interviewer, but with no further assistance. You did a good job at self-correcting syntax errors and "testing" the code with various use cases.
3	You coded a correct non-optimal solution and identified the runtime. With some help from the interviewer, You were able to code a correct optimal solution with the correct optimal runtime. The code may have had some minor syntax errors or bugs that were corrected when pointed out.
2	You coded a correct or nearly correct non-optimal solution and identified the runtime. You had significant difficulty in forming a better solution even with assistance from the interviewer. You may have been able to describe (but not code) the optimal solution.
1	You were not able to code a correct non-optimal solution even with significant help from the interviewer and was not able to describe a better solution.

| 0 | You did not complete the interview or did not give any responses. |

Non-Technical

The non-technical interview mainly consists of behavioral questions and the purpose is to determine if you are a good fit for the job based on your goals and trajectory, and also a good fit for the company and team. The non-technical interview is not passed only with the **don't be a jerk** philosophy. You must be honest about your accomplishments and your shortcomings. This type of interview is typically easier for you than it is for the interviewer. For the Springboard program, the interview will mainly consist of practice questions that are very typical of non-technical interviews. It is not possible to give an interview that is tuned specifically to one particular instance of a job at a company.

Typically, the non-technical behavioral interview is mainly used to weed individuals out based on poor fit or attitude problems. This type of interview is rarely failed, but when it has failed, it ended the process and the issues raised in the interview are quite often seen by the other interviewers. The non-technical interview typically covers the following areas:

- what you want to do right now, and later in the career
- what type of role you are looking for
- how past experiences have prepared you for this role
- why are you interested in company *X*?
- attitude and philosophy towards success and failure
- how you measure success
- your opinion on what you can add to the team
- what you are passionate about
- what keeps you awake at night with respect to work

The non-technical interview *may* also be given by a recruiter or a source as a filter, but it can typically be passed by you being familiar with the position and the company whereas the non-technical interview that occurs on-site is more challenging.

General Flow

The interviewer typically spends the first few minutes introducing themselves, your role and the types of problems you work on, and then spend **20-25 minutes** on non-technical discussion. The non-technical interview is usually led by a senior manager that is skip level or more removed from you in an effort to get you to open up. Typically, the last 10 minutes of such an interview is dedicated to you asking questions.

Example Discussion Points

There are an infinite number of questions that can be asked in this interview format. These are some examples.

- What is the biggest challenge facing your current job right now?
- What is your biggest failure?
- What is the accomplishment you are most proud of?
- If you could do anything for the rest of your life, what would it be?
- How do you measure impact?
- What is your weakness?
- Tell me about a time something did not go right at work.
- Tell me about a time you had a conflict with a coworker.
- Tell me about the worst bug you have ever faced (in code).
- Explain your dissertation/thesis research to me.
- I see that you're interested in mountain biking/plasma physics/World of Warcraft (something technical). How does that work? What's it about? (explaining a concept to an audience in another area)

Candidate Evaluation

The interviewer is encouraged to share verbal or written feedback with you. You should also be given a score on a **3**-point scale for internal consistency, calibration and for you if you wish to know. This scale is different from the other interviews because it is typically used as a filter and typically only provides information on who should *not* be hired rather than who *should* be hired.

A score of **2** represents an "A-OK". Since companies err on the side of preventing false positives, particularly in behavioral interviews, it is very common for the average evaluation to be average, if not higher. A score of **1** indicates that you had significant fit issues that require further feedback and coaching for a data scientist role (i.e. wanting to use SAS instead of R in a company that doesn't have SAS, wanting to be a data scientist because it is popular right now, etc.)

Score	Description
3	You show that you would be a significant asset to the company in ways above and beyond just the job requirements, such as unique experience, your research area etc. You show that the role would be a great growing experience and a potential long-term investment on both ends.
2	You have a good explanation for your purpose in seeking the role. You are honest and candid about your experiences and your understanding of the role combined with your interest and career trajectory support being hired. You may give some responses that confuses or slightly concern the interviewer (nobody is perfect), but the overall theme is that you would be a good hire.
1	You provide disingenuous answers on multiple occasions throughout the interview. You may exude negative traits such as arrogance, competitiveness or ulterior motive (money). Your description of your work or skills may be outdated with no indication of self-improvement.
0	You did not complete the interview or did not give any responses.