BEP 342 – 2nd Round Interviews 1: Technical Interviews

Hello and welcome back to Business English Pod. My name's Edwin, and I'll be your host for today's lesson on succeeding in a technical interview in English.

While we have lots of lessons on job interviews in English, nearly all of them are about the *first* round of an interview, or the initial screening interview. If you succeed at that, you'll get called back for a *second* interview. And it's the English interview skills for these 2nd round interviews we want to look at now. Today, we'll focus on the technical interview. And in the next lesson, we'll look at the behavioral interview.

Just like any interview, preparation for a technical interview is key. And you can think beforehand about how you might show things like innovative experience or a learning attitude. You might also decide to highlight certain attributes that you think are beneficial, like being a team player.

But what about the problem-solving part of the technical job interview? Can you actually prepare for *every* possible problem? No, you can't. But remember that the purpose is not to trick you, or make you feel stupid. The interviewers just want to see how you *approach* problems. So it's important for you to start by clarifying the question, and then clearly explaining your solution.

In today's dialog, we'll hear a software developer named Kevin, who's doing a technical interview for a new job. Kevin not only has to face questions about his experience, but he also has to explain a solution to a technical problem. He's being interviewed by Mick. We'll hear how Kevin navigates the interview.

As you listen to the dialog, try to answer the following questions:

1. What kind of experience does Kevin demonstrate when he talks about an exciting project he worked on?
2. Besides having a happy client, why was the project so successful?
3. When Mick gives Kevin a technical problem, what is the first thing Kevin does?

Vocabulary

Analytics: the understanding and interpretation of data and data patterns; "With our new data analytics program, we are better able to target our marketing efforts."

Suite: a set of computer programs that work together or are sold together; "Why would I buy the complete Microsoft Office suite if the only thing I need is a word processor?"

Unstructured data: data that is not organized into clear models, often including subjective ideas and opinions in text; "National security organizations monitor unstructured data to alert them of possible increases in terrorist activity."

Precedent: something in the past that serves as an example or reason for a similar current thing; "There are many precedents in the U.S. for the break-up of large corporate monopolies, so Facebook and Google should be worried."

Cutting edge: innovative or very new; "Our cutting edge delivery system allows you to track the progress of your package from your phone."

Haskell: a functional computer programming language; "Facebook has implemented all its anti-spam software in Haskell."

To turn out: to have a particular result; "I didn't think people would respond well to the new ads, but it turns out that focus group participants loved them!"

To take it upon yourself: to do something that needs to be done without being asked to do it; "I recognized our department didn't have any workplace safety policies, so I took it upon myself to develop some."

In the end: finally, after a period of time; "We really tried to improve sales and turn the company around, but in the end we just couldn't survive the economic crisis."

To bring people together: to help people in a group to feel closer; "I think the staff retreat generated a lot of great business ideas and helped bring people together."

Spectrum: a whole range of things or ideas; "GlaxoSmithKlein is a huge pharmaceutical company that sells a wide range of drugs across the medical spectrum."

Scope: the activities included in a project; "An online staff survey wasn't included in our original project scope, but we could talk about adding it to the project if you like?"

To change course: to start doing something differently or going in a new direction; "When customers didn't show any interest in our new health drink, we changed course and moved into the energy drink market."

Status call: a telephone call to talk about progress on a project; "To keep your client up-to-date on what you're doing, it's good to schedule regular status calls."

From the get-go: from the beginning; "We've had troubles with our website from the get-go, and I'm thinking we need to find a new developer."

Whiteboard: a white plastic board – in a classroom or office – that you write on with markers and can erase; "Okay, this discussion is great, and let me just capture some of these ideas up here on the whiteboard for everyone to see."

To walk someone through something: to practice, explain, or learn something in a slow way or step-by-step; "I found your report kind of confusing Judy, so how about coming in and just walking me through it to clarify some things?"

Integer: a whole number, as in not a fraction or portion of a number; "Okay, so it looks like you can't put a decimal in this box… the software will only accept a positive integer."

Function: a basic computer operation or calculation; "If you want to add up a column of numbers in Excel, just use the *sum* function."

To sum: to add numbers; "All right, now if we sum the sales figures from the first six months of the year, we get… a new six-month record!"

Arithmetic operator: a calculation performed on two numbers, including addition, subtraction, multiplication, and division; "Every arithmetic operator has a special symbol, such as + for plus."

Binary: a system that uses 0s and 1s to represent information; "The most basic instructions for a computer are written in binary code."

Bitwise operator: calculations done on patterns of bits or binary numbers; "The bitwise operator AND is represented by the symbol &."

XOR: a computer operator that gives a result of "true" when one, but not both, elements of the operation are true; "If the binary XOR operator is used with the inputs 0 and 1, the result is 1."

Bit: the smallest, most basic unit of information used by computers; "In telecommunications, we often measure the number of bits that can be transferred per second."

Carry bit: a leftover bit that you carry to the next order when you've counted through every lower order combination; "When you add 1 and 1 in binary, you are left with a carry bit."

To iterate: to repeat or do again; "To ensure the process is designed well, we must iterate the test at least 10 times."

Dialog

Mick: All right Kevin, just going back to your time at N-Tech, you mentioned a few of the things you worked on… What would you say was the most exciting project your worked on there?

Kevin: Er… Kinda hard to pick a favorite… but I think the most exciting project was an **analytics suite** we built for a finance client. They wanted a way to analyze **unstructured data**… like tweets and blog posts and such. Not a lot of **precedents** for that, so it really felt like we were doing some **cutting edge** stuff. And we did parts of it in **Haskell**, which I really enjoy working in. And teaching… actually. **Turns out** not a lot of people had worked with it before, so I **took it upon myself** to run a few training sessions.

Mick: And… how did everything turn out **in the end**?

Kevin: Overall, it was a big success. The client was happy, and that's important of course. But I also think it really **brought us together** as a team. I mean, lots of learning together, and working through some really tough challenges. I think the whole experience was very positive.

Mick: Okay then let's look at the other end of the **spectrum**. I want you to think about a project you worked on that failed. I mean one that really didn't work out as planned… How do you think *you* could have improved that project? If you had to do it again, what would you do differently?

Kevin: Well, the project I'm thinking of was for a pretty tough client. I mean, the **scope** was constantly changing. And I tried my best to adapt… to **change course**… be flexible. But it was a real lesson in the importance of clear communication. And, if I had to do it again, I'd set up weekly **status calls** right **from the get-go**. And then support that with some regular office visits… [Fade out]

Mick: [Fade in] …All right let's move on to some problem-solving. If I can just ask you to come to the **whiteboard**… I'm sure you've done this kind of thing before.

Kevin: Yeah… all good.

Mick: Great. So, I'll just give you a problem, and you can **walk us through** your solution. And take your time… No rush. Okay, here we go: given two **integers**, write a **function** to **sum** the numbers without using any **arithmetic operators**.

Kevin: Sum the numbers without arithmetic operators… so… just for clarity: that means no multiplication, division, subtraction, or… addition of course… but also I assume no power functions? Or logs?

Mick: Right. None of those.

Kevin: All right then… So I'm going to choose two integers, and since we can't use basic math operators, we'll have do this in **binary** and use **bitwise operators**. So, let me just write out those numbers in binary… we can then **XOR** both numbers **bit** by bit, shift over the result for our **carry bit**, then **iterate** through from right to left...

Debrief

Now let's go through the dialog again and look at the language and techniques Kevin uses during his interview.

Mick: All right Kevin, just going back to your time at N-Tech, you mentioned a few of the things you were working on… What would you say was the most exciting project your worked on there?

Mick is giving Kevin a chance to talk about a favorite project. This is a fairly common question in a technical interview, and it's important that you answer effectively. Even though it's about what you find exciting, it's also a chance to show some good experience, as Kevin demonstrates.

Kevin: Er… Kinda hard to pick a favorite… but I think the most exciting project was an **analytics suite** we built for a finance client. They wanted a way to analyze **unstructured data**… like tweets and blog posts and such. Not a lot of **precedents** for that, so it really felt like we were doing some **cutting edge** stuff.

Kevin is showing excitement about building an "analytics suite," or software used for analyzing data. And not just any data. He's talking about analyzing data that isn't usually analyzed, like the text in tweets and blogs. In this way, Kevin is focusing on his work on a "cutting edge" project, or one that is new and different from anything before. This clearly demonstrates innovative experience.

It's great to show an interviewer what kind of thing you think is interesting. But it's even better to show how the work was innovative. Let's run through some more ways of demonstrating innovative experience in an interview.

- The software we developed was the first of its kind.
- We decided to take a completely different approach to the project.
- We were one of the first companies to use this technique.
- I helped to transform the company's approach to scheduling.

Kevin uses the opportunity to talk about a couple of other aspects of his experience as well. Let's listen.

Kevin: And we did parts of it in **Haskell**, which I really enjoy working in. And teaching… actually. **Turns out** not a lot of people had worked with it before, so I **took it upon myself** to run a few training sessions.

As you can hear, Kevin is not only demonstrating innovative experience, but also leadership ability and initiative. Let's listen as Mick follows up with a question about the final result of the project.

Mick: And… how did everything turn out **in the end**?

Kevin: Overall, it was a big success. The client was happy, and that's important of course. But I also think it really **brought us together** as a team. I mean, lots of learning together, and working through some really tough challenges. I think the whole experience was very positive.

Kevin mentions that the client was happy, but he also talks about how the challenges of the project "brought them together." In other words, the challenges helped the team develop stronger relationships.

Of course, very few people work completely alone. In most companies, work is done by teams. And for this reason, it's very important to show that you are a team player, or that you care about your team. And this is especially important if you're applying for a leadership position.

How else can we show concern for a team during a technical interview? Let's try a few more examples.

- I realized that my teammates were getting tired, and I had to do something.
- Yes, it was interesting work, but it was also a great team, with great people.
- I wanted to make sure that my colleagues felt rewarded for all their hard work.
- Sure, I got the award, but it was really a group effort.

Next, Mick wants to know about a different kind of experience.

Mick: Okay then let's look at the other end of the **spectrum**. I want you to think about a project you worked on that failed. I mean one that really didn't work out as planned… How do you think *you* could have improved that project? If you had to do it again, what would you do differently?

Mick's question is a tough one. Kevin has to talk about a failed project, and then explain what he would do differently. But once again, this is an opportunity to show a positive quality. Let's hear how Kevin deals with this.

Kevin: Well, the project I'm thinking of was for a pretty tough client. I mean, the **scope** was constantly changing. And I tried my best to adapt… to **change course**… be flexible. But it was a real lesson in the importance of clear communication. And, if I had to do it again, I'd set up weekly **status calls** right **from the get-go**. And then support that with some regular office visits…

Kevin talks about a project where the "scope," or requirements, changed a lot. You'll notice that he talks about "adapting" and "being flexible." He also mentions that it was a real "lesson." Kevin's using the language of *learning* to explain the

situation. And he suggests some solutions to the communication problem that he identified.

Some people say that mistakes are just learning opportunities. It's important that you can demonstrate that kind of attitude in a technical interview. Companies want to know that the people they're hiring can adapt and learn new things.

Let's practice some more ways of demonstrating a learning attitude.

- So I thought to myself: how can we learn from this experience?
- Yes, there were problems, but those problems taught us how to work together.
- I was glad to have so many experienced people to help me develop my skills.
- It was a new situation for me, so I had to read up on how to deal with it.

Now let's skip ahead in the interview. We're going to rejoin the conversation as Mick is giving Kevin a problem to solve on the "whiteboard." In other words, he wants Kevin to write out his solution on the board.

Mick: …All right let's move on to some problem-solving. If I can just ask you to come to the **whiteboard**… I'm sure you've done this kind of thing before.

Kevin: Yeah… all good.

Mick: Great. So, I'll just give you a problem, and you can **walk us through** your solution. And take your time… No rush. Okay, here we go: given two **integers**, write a **function** to **sum** the numbers without using any **arithmetic operators**.

Mick wants Kevin to "walk him through" a solution. With problem solving questions like this, your purpose is to explain your thinking clearly. In Kevin's case, he's been asked to write some code to add numbers without using "arithmetic operators," such as plus or minus. Let's hear how he begins.

Kevin: Sum the numbers without arithmetic operators… so… just for clarity: that means no multiplication, division, subtraction, or… addition of course… but also I assume no power functions? Or logs?

Kevin doesn't jump into his solution too quickly. Instead, he clarifies the question. He wants to make sure he understands the constraints, or exactly what is meant by "arithmetic operators." If Kevin doesn't understand clearly, he might go down the wrong path in developing his solution. You can start by asking one or several clarifying questions. Even if you're clear on the question, it can buy you a bit of time to think about your solution.

How else can we clarify a technical aspect during an interview? Let's go through some more examples.

- Okay, so just to clarify: you want the solution in Javascript?
- Before I start: can I assume that the input will be in English?
- So just to confirm: the output will be a series of numbers?
- Now, for starters, are you looking for the shortest solution to this?

Now let's get back to the dialog.

Mick: Right. None of those.

Kevin: All right then… So I'm going to choose two integers, and since we can't use basic math operators, we'll have do this in **binary** and use **bitwise operators**. So, let me just write out those numbers in binary… we can then **XOR** both numbers **bit** by bit, shift over the result for our **carry bit**, then **iterate** through from right to left...

Kevin doesn't just stand at the whiteboard and write out his solution. Interviewers want to know how you *think*, and the only way they can find out is if you explain your solution step by step. Not only should you state your choices, but you should explain your rationale, or thinking. So when Kevin says he's going to use "binary," which is a number system of zeroes and ones, he explains that this is because he can't use math operators.

I won't go into the technical meaning of Kevin's solution, but you should notice expressions like "I'm going to" and "let me" and "we can then." These are expressions that tell the interviewer what you're doing step by step. That will allow them to see how you are coming up with the solution.

Let's practice some more ways of explaining your solution during a technical interview.

- All right, let me just write down the input at the top here…
- Now, what we need next is a way to sort those numbers…
- Once that process is finished, then I'll need to create another list…
- But now I see this doesn't work in all cases, so I'm just going to back up…

Kevin has done a great job throughout this technical interview. He's used questions as opportunities to show his experience and attitude, and he's demonstrated clear thinking in his approach to the technical question.

Now let's practice some of the language we learned in today's lesson. Imagine you are interviewing for a job as a software developer. You'll hear a cue from the interviewer, then I'll give you a suggestion for what you can say in response. We'll guide you through each step in the practice and provide an example answer for each response.

Ready? Let's give it a go.

Cue 1: So tell me, what did you enjoy most about the project?

Start by saying that you were excited to find a new solution to an old problem.

Answer: _____

Cue 2: Okay, and do you think you were recognized for your work?

Now say that you were recognized, but you couldn't have done it without your team.

Answer: _____

Cue 3: I see. And on the subject of teams, what do you think makes a good team player?

Next, say that a good team player is someone who listens and learns from others.

Answer: _____

A little later in the interview, you are asked to solve a problem at the whiteboard.

Cue 4: Now I'd like you to write a function that returns all permutations of a given list.

Now clarify whether the given list is a list of numbers.

Answer: _____

Cue 5: Yes, that's right. The list is a set of integers.

Start your solution by saying that you will begin by writing a list of five numbers.

Answer: _____

Answer 1: Well, I found it very rewarding to find a new solution to an old problem.

Answer 2: Yes, I was recognized, but I really couldn't have done it without my team.

Answer 3: I think a good team player is a person who listens and learns from others.

Answer 4: So, can I just clarify whether the given list is a list of numbers?

Answer 5: Okay, I'm going to begin here by writing a list of five numbers.

Now let's practice some of the vocabulary we've covered in this lesson. In a moment, you'll hear a series of sentences with a word replaced with a beep. Repeat each sentence, *including* the missing word.

For example, if you hear:
Example Cue: Now let's talk about an experience at the other end of the **<beep>.**

You can say:
Example Answer: Now let's talk about an experience at the other end of the **spectrum.**

After each response, we'll provide the correct answer. Let's begin.

Cue 1: It was frustrating to have to change **<beep>** in the middle of the project.

Answer: _____

Cue 2: Could you write down this list on the **<beep>**?

Answer: _____

Cue 3: It sounds like you did a lot of cutting **<beep>** work at Spotify.

Answer: _____

Cue 4: Last month, I took it upon **<beep>** to organize the office.

Answer: _____

Answer 1: It was frustrating to have to change **course** in the middle of the project.

Answer 2: Could you write down this list on the **whiteboard**?

Answer 3: It sounds like you did a lot of cutting **edge** work at Spotify.

Answer 4: Last month, I took it upon **myself** to organize the office.

We've reached the end of this lesson, the first in our series on second round interviews. We've learned how to demonstrate innovative experience, concern for a team, and a learning attitude. We've also looked at how to ask clarifying questions about a problem, and how to explain a solution clearly.

Thanks for listening and see you again soon!

Language Review

A. Review Quiz

For each question, you must choose the sentence that best fulfills the given language function or purpose.

1. How could you demonstrate innovative experience in a job interview?

a) We really believe that technology is important.
b) I feel that many of our older systems need to be replaced.
c) We were the first company in our industry to use VR for training.

2. Which of the following interview responses shows concern for team?

a) I really think that others in my department were responsible for the mistake.
b) I became quite concerned that people in the department were getting discouraged.
c) In a group setting, I sometimes find it difficult to make my voice heard.

3. How can you demonstrate a learning attitude?

a) I would definitely do a Master's degree if it would increase my salary.
b) I accepted the challenge because it's something I hadn't tried before.
c) When I first started there, I went through a pretty long training process.

4. What is a good way to clarify a technical question?

a) So just to be clear: I should write this in C++, right?
b) I'm sorry but I really don't understand what you're looking for.
c) And is it okay for me to not use the whiteboard?

5. How could you explain your solution to a problem?

a) First I'll just take the lid off this board marker…
b) Well, let me think about this…
c) I'm just going to start with a set of three random numbers here…

B. Vocabulary and Idioms

Fill in the blanks with words from the box below. Be sure to put any verbs in the right tense.

edge	**take**	**course**
walk	**turn**	**get-go**

1. Hey Veronica, would you mind just _____ me through the set-up process for this new accounting software?

2. Nathan has shown incredible skill from the _____. I mean, it took him no time to get settled into the job.

3. KlearCo is creating cutting _____ tools for measuring social media influence.

4. If nobody else organizes the staff party, I might just have to _____ it upon myself to do it.

5. It now looks like CEO John Chen's strategy might actually enable RIM to successfully _____ course.

6. If we don't get some more qualified people on this project, I'm really afraid it will _____ out really poorly.

Study Strategy

In a second round interview, you often have to talk about past experiences. And those past experiences are an opportunity to demonstrate that you have certain skills or abilities. For example, you might show that you are innovative, a good team player, or a good learner.

Start by thinking about some work situations or experiences that you might talk about during an interview. Try to think of projects that were very successful, or that you had a big impact on. Write down just a few of these important experiences. Then make some notes about what skill or ability you demonstrated during these experiences.

Now, with a colleague or friend, imagine you are having a second-round job interview. Your partner can start by asking you to talk about an important work experience. Choose one of those that you listed and discuss your role and the work you did. Make sure you emphasize the skills or abilities that you believe you demonstrated. Repeat this with other situations on your list. When you're done, switch roles and let your partner try.

Answers

Listening Questions

1. Kevin demonstrates innovative experience when he talks about an exciting project.
2. The project was successful because it helped to bring the team together.
3. The first thing Kevin does is ask questions to clarify the problem.

A. Review Quiz

1. c; 2. b; 3. b; 4. a; 5. c

B. Vocabulary and Idioms

1. Hey Veronica, would you mind just **walking** me through the set-up process for this new accounting software?

2. Nathan has shown incredible skill from the **get-go.** I mean, it took him no time to get settled into the job.

3. KlearCo is creating cutting **edge** tools for measuring social media influence.

4. If nobody else organizes the staff party, I might just have to **take** it upon myself to do it.

5. It now looks like CEO John Chen's strategy might actually enable RIM to successfully **change** course.

6. If we don't get some more qualified people on this project, I'm really afraid it will **turn** out really poorly.