

Deutsche Bank FTE Interview Experience

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Deutsche Bank visited our campus in August 2021 to hire final year students for the role of Graduate Technical Analyst. Their criteria was:

- CPI 7.75 and above
- Branches : Computers, IT & EXTC(Electronics and Telecommunication).

I am happy to tell you that I cracked this opportunity and am here to share my experience of the hiring process.

There were 5 online rounds conducted overall.

1. Online Coding Test.
2. Technical Round-1.
3. Technical Round-2.
4. Professional-fitment Round.
5. HR Round.

ROUND 1 (Online test on HackerEarth – 120 mins):

The test was scheduled on 28th July 2021. There were 3 coding questions in this round. The questions were of medium to high difficulty. The scores for questions were 20,50,50 respectively. There were marks for partial test cases.

Coding Questions–

1. Given 2 arrays `arr1[]` and `arr2[]` consisting of N integers representing the length of the sticks and the second array consisting of their frequencies respectively, the task is to find the maximum sum possible by considering all lengths of the squares and rectangles constructed using these sticks.

Note A single side can be represented using only a single stick.

Input : `Arr1[]` : [5,8,4,2]

`Arr2[]` : [6,1,4,5]

Output : 38.

Explanation : Here we can form a square of length 5 as 5 has a frequency of 6. Out of the 2 sticks left from length 5 and 2 sticks from length 4 we can form a rectangle.

So total = $5*4 + 2*(5+4) = 38$. (Have to form only 1 square and 1 rectangle)

The question was similar to this :

<https://www.geeksforgeeks.org/maximum-of-sum-of-length-of-rectangles-and-squares-formed-by-given-sticks/>

I was able to solve this question partially. (12/20)

2. Given a Binary string, the task is to find the largest Prime Number possible by the decimal representation of a subsequence of the given binary string. If no prime number can be obtained, print -1.

Input: S = "1001"

Output: 5

Explanation: Out of all subsequences of the string "1001", the largest prime number that can be obtained is "101" (= 5).

<https://www.geeksforgeeks.org/largest-prime-number-possible-from-a-subsequence-of-a-binary-string/>

I could solve this question completely (50/50).

3. Given a string A, the task is to find the smallest substring of A having "ABCDEFGHIJKLMNOPQRSTUVWXYZ" as a subsequence. The question was similar to this :

<https://www.geeksforgeeks.org/length-of-smallest-substring-of-a-given-string-which-contains-another-string-as-subsequence/>

Here, there are 2 strings but we can consider B as a string containing A-Z.

I was able to solve this question partially. (16/50).

16 students were shortlisted from the online test for the next round. The entire interview process was on Skype.

There was a Pre-Placement-Talk(PPT) from 8am to 9am for the shortlisted candidates. Here, they introduced us to the Tech Stack available, projects, values and details about Deutsche Bank.

ROUND 2 (Technical Round 1 – 50-55 mins):

My round was scheduled at 10.15am. This round tested technical skills like DSA(Data structures and Algorithms), OOPS, SQL queries and questions related to projects and tech-stacks mentioned in the resume. The interviewer asked me the following questions:

1. Tell me about yourself.
2. My resume contained various hackathon winning achievements, so he asked me to explain my role in the particular projects and what I learned.
3. My projects had Machine learning involved, so he asked me what libraries of ML I had used. Followed by some questions on Keras and Tensorflow libraries.
4. As I had used Dialog Flow for chatbots, I was asked to explain it completely. (I explained him everything in detail, i.e. Dialog Flow intents, custom payloads, webhooks and follow-up intents. Explained to him how the API request response was built.)
(He was quite satisfied with my ans)
5. He then gave me a small table and asked about the approach using pandas. The question was - You are given a table having columns like country,population,language,(had 2 more columns but I don't remember now). I was asked how you will get the countries having population $\leq X$. (I was able to solve it).
6. What is Matplotlib used for? Examples of any plots?
7. He then asked me what data structures I was familiar with.
(I said arrays, linked lists,stacks,queues,strings,graphs and vectors,maps, ordered & unordered maps in STL.) Was asked to explain each in short.
8. He asked to code to check whether a given number is an Armstrong number or not. He expected me to know what an Armstrong number is.
<https://www.geeksforgeeks.org/program-for-armstrong-numbers/>.
I was able to give a solution quickly.He then asked to explain how to find all Armstrong numbers from 1 to N. (Only had to discuss approach - gave brute force solution)
9. He then asked me about AVL Trees.
<https://www.geeksforgeeks.org/avl-tree-set-1-insertion/> I explained to him what AVL tree is, its basic operations and Rotations.
(He was quite satisfied with my ans)
10. He then asked me what indexing is.
(I explained him in detail with types and examples and how searching becomes easy). It was then followed by a question about SQL joins and asked queries.

A. Given a table A containing Id & Name and table B containing Id, Age, perform full join and self join and explain the output. (I was able to solve it).

B. How To Find the Third Highest Salary. (Gave 3 solutions)

ans : `SELECT salary FROM Table_Name ORDER BY salary DESC LIMIT 2, 1`

11. What is overloading and overriding? How is it achieved?

(Explained in depth with examples)

<https://www.geeksforgeeks.org/function-overloading-vs-function-overriding-in-cpp/>

12. What is event handling in Java? (I was not familiar with Java and hence explained event handling in Javascript).

13. Many of my projects had Node.js as backend, so I was asked some questions on it. (I was able to answer all)

14. Any questions for me? Mention what you asked
(Always ask questions)

After this round, 12 out of 16 were shortlisted. Technical Round-2 was scheduled at 1pm.

ROUND 3 (Technical Round 2 – 1 hr):

This round tested technical skills like DSA(Data structures and Algorithms), OOPS, SQL queries and questions related to Internships, work experiences, projects and tech-stacks mentioned in the resume. It also included core subjects questions. The interviewer asked me the following questions:

1. Tell me about yourself.

2. Tell me about your Internships and work experience.

I was asked questions related to all the internships. Some of the questions were - What was the tech stack? What work was assigned to you? What did you learn? etc.

3. What is a linked list? Types? How to reverse a linked list and a doubly linked list. I was asked to code and explain the logic.

<https://www.geeksforgeeks.org/reverse-a-linked-list/> (gave 2 solutions)

<https://www.geeksforgeeks.org/reverse-a-doubly-linked-list/> (gave 1 solution)

4. What is Bubble sort? Explain and write code for the same.
(Wrote code and optimized best case complexity).
<https://www.geeksforgeeks.org/bubble-sort/>
Then was asked about Merge and Heap sort. Had to explain to him the logic and pseudo code for Merge sort and logic of Heap sort.
<https://www.geeksforgeeks.org/merge-sort/>
<https://www.geeksforgeeks.org/heap-sort/>
I had to explain the heapify function.
TIP : Always explain code along with time and space complexities.
Makes a good impact.
5. What is a clustered index? (Explain everything about indexing in detail)
<https://www.geeksforgeeks.org/difference-between-clustered-and-non-clustered-index/>
6. What is SQL injection? https://www.w3schools.com/sql/sql_injection.asp
7. Difference between Union and Joins.
(Explained with help of query)
8. What do you know about Cloud Computing?
(I had little idea and told him all the things I knew. I had used AWS for one of my projects and explained him the use case)
9. Do you know about Kubernetes? (I said no)
10. What is the OSI Model? Difference between OSI and TCP-IP Model.
<https://www.geeksforgeeks.org/layers-of-osi-model/>
(I explained the 7 layers using an example and differences).
11. Tell me a unique and interesting feature that you have developed recently.
(I had worked on a live project wherein I developed single user login using ip addresses and implemented a in-memory Cache along with my mentor)
12. Any questions for me?
(I asked him his role, tech-stack and work in Deutsche Bank. The interviewer turned out to be a Tech-Manager)

After this round, 8 out of 12 were shortlisted. My Pro-fit Round was scheduled at 3.45pm.

ROUND 4 (Pro-fit – 30 mins):

Basically in this round, you have to talk about yourself and your experiences. Make sure you are confident and you have prepared answers to these questions well in advance. Trust me it helps. I was asked common Technical and HR questions. The interviewer asked me the following questions:

1. Tell me about yourself.
2. As my resume had many hackathon participations and wins, he asked me how I managed my academics and college with hackathons? The interviewer was frank and asked me if I used to bunk the classes for attending competitions and hackathons.
3. I was asked about my Internship Experience, the Pros, and Cons of a Virtual Internship.
4. He asked me to give an example where I showed my leadership skills.
5. Tell me more about your internships. As one of my internships had Java, Spring boot and MVC architecture and my resume didn't have Java, so how I learned the following tech stack and performed my tasks.
6. He explained to me some bank related tech stacks and asked why a Computer Engineer should work in a bank.
7. Do you have any idea about the Agile process in Software Engineering? (I explained the basics which I knew)
8. Any questions for me? (I asked him about his tech stack, work and experience in DB). We had a good discussion on this.

Immediately after this round, there was an HR round.

ROUND 5 (HR – 15-20 mins):

This round tested how confident you are in answering situational based questions. The interviewer asked me the following questions:

TIP: There are many websites from where you can get to know about the frequently asked HR questions. Make sure you are confident and you have prepared answers to these questions well in advance. Trust me it helps.

You can refer to the following links for reference.

- <https://www.javatpoint.com/job-interview-questions>
- <https://www.naukri.com/blog/frequently-asked-hr-interview-questions-and-answers/>

1. Tell me about yourself.
2. How is your day till now? Are you tired?
(I replied positively saying no as it was virtual and we were at home so there was no travelling stress).
3. How will you handle an underperforming member of your team?
4. Have you heard about Workday? What values did you learn during your internship?
5. What is the toughest thing that you ever did in your life?
(I explained with an example)
6. Any questions for me? (I asked how did the pandemic strike DB and how did they overcome the covid situation. He told me about the drives conducted by DB for the affected people. We had a good discussion on this)

My HR round ended at 5pm. I was happy with my performance but at the same time tensed for the results. The interviewers were good and helped me when I was stuck.

Finally, after 3 hours of wait, at 8pm, the results were announced. 5 out of 8 students were given the offers and I was happy to be one of them. It was a tiring day whose end turned out to be a memorable one.

Some Tips :

- *NEVER FORGET TO RESEARCH ABOUT THE COMPANY.* The interviewer would most probably ask you about the company's mission, vision, values or what it does.
- *DO NOT LIE IN YOUR RESUME*, they ask questions from it, so it is important to know everything you've written in your resume.
- Don't forget to prepare yourself for behavioral questions. Sometimes, we focus a lot on technical questions and completely ignore behavioral questions.
- Have a look at some interview experiences before the interview. You can find a lot of interview experiences on Geeks for Geeks. This really helps in the interview.
- Don't lose hope, even though you feel that you could not perform the way you wanted to. Stay calm and composed during the interview.
- Remember that your body language says as much about you as your answers to the questions.

Resources for preparation for any company:

- [Interview Prep Resources \(GitHub\)](#)
- Practice DSA from Leetcode, InterviewBit and Geeks for Geeks.
- [Company Interview Corner \(GeeksForGeeks\)](#)
- Prepare According to a particular company. What I mean by this is that some companies are more focused towards asking questions on DBMS, whereas some companies may ask system design. It also depends on the interviewer but do have a look at company archives to get an idea.
- Practice SQL queries from interviewbit and other sites.
- Revise OOPS concepts and be aware of the [diamond problem](#).

You should at least be familiar with the following Concepts.

SQL :

- Basic DDL,DML queries.
- Joins, Unions,constraints.
- Aggregate functions,Group by, order by.
- LIKE, BETWEEN and IN operator
- Transactions, Concurrency Control problems and Protocols.
- Indexing, Normalisation, SQL injection.

CN :

- OSI Model, TCP-IP Model.
- Types of Topologies, connecting devices and end devices.
- Some important protocols.

OS :

- Scheduling algorithms, Page replacement algorithms,Disk Scheduling algorithms.
- Deadlock, semaphore, mutex,Threading, Segmentation.
- Bankers algorithm, Producer-Consumer problem.

System design.

All the best! 👍