# Facebook Data Engineer Interview Questions

One of the world's most popular social media networks, Facebook, has over 2 billion worldwide active users. The organization is known to accumulate and store significant user data, making it the perfect place for a Data Engineer.

Facebook is known for its unique culture and supremely structured processes. The interview process at Facebook is quite elaborate, and if you want to land a role as a Data Engineer, there is no stage you can take lightly.

Each phase of the interview at Facebook is inclined toward assessing a potential candidate's programming and behavioral skills. If you have applied for a Data Engineer position at Facebook, this article will help you prepare for your interview.

Here's what we have covered in this article:

- The Data Engineer Role at Facebook
- Types of Data Engineering Teams at Facebook
- The Facebook Interview Process for Data Engineers
- Data Engineer Interview Questions and Answers
- More Facebook Interview Questions for Data Engineers
- Facebook Interview FAQs

# The Data Engineer Role at Facebook

As a Data Engineer at Facebook, you will work on data analysis by building and managing scalable frameworks and data pipelines. You will also design data warehouses for internal business use. Additionally, you will leverage big data technologies to transform complex and raw data into actionable insights for better business decision-making.

As a Data Engineer, you will develop a clear sense of connection with the organization and leadership  — Data Engineering is considered the eyes through which Facebook sees the product.

## Skills Required to Become a Data Engineer at Facebook

Data Engineers at Facebook are required to have extensive industry experience and time-tested skills. Hence, Facebook chooses to hire only qualified applicants with at least five years of industry experience in the data warehouse space.

**Minimum Required Skills for Data Engineers at Facebook**

- 5+ years of Python development experience.
- 5+ years of SQL experience.
- 5+ years of experience in custom ETL design, implementation, and maintenance.
- 3+ years of experience with workflow management engines (i.e., Airflow, Luigi, Prefect, Dagster, digdag.io, Google Cloud Composer, AWS Step Functions, Azure Data Factory, UC4, Control-M).
- 3+ years experience with Data Modeling.
- Experience analyzing data to discover opportunities and address gaps.
- Experience working with cloud or on-prem Big Data/MPP analytics platforms (i.e., Netezza, Teradata, AWS Redshift, Google BigQuery, Azure Data Warehouse, or similar).

**Preferred Skills of a Data Engineer at Facebook**

- Experience with more than one coding language.
- Experience with designing and implementing real-time pipelines.
- Experience with data quality and validation.
- Experience with SQL performance tuning and E2E process optimization.
- Experience with anomaly/outlier detection.
- Experience with notebook-based Data Science workflow.
- Experience with Airflow.
- Experience querying massive datasets using Spark, Presto, Hive, Impala, etc.

# Types of Data Engineering Teams at Facebook

There are several Data Engineering teams at Facebook because the organization is such a massive data-driven company. Here are a few:

- **Facebook App Monetization (FAM):** Data Engineers in this team design and build data foundations, architecture, and infrastructure that help drive better business decisions for the organization.

- **Novi Blockchain Data Engineering:** Here, Data Engineers design and implement scalable data repositories. The goal is to integrate research data, build and launch ETL processes, and transform user-data and server events data into scalable schema models.
- **Data Warehouse:** In this team, Data Engineers design, build, and launch new data modeling and ETL processes in production. They also manage data warehouse plans and collaborate cross-functionally.
- **Family Ecosystems:** Here, Data Engineers work with product software engineering, data infrastructure, and product management teams to develop architecture-driven, end-to-end analytics development tools, products, and infrastructure stacks.
- **Facebook Video Distribution:** Data Engineers in this team develop data processing systems and architecture for new data and ETL pipelines. They also recommend improvements to existing data and ETL pipelines.
- **Partnerships Central Systems, Data, and Tools Team:** Data Engineers in this team build and maintain data pipelines. They also build models that provide intuitive analytics.

# The Facebook Interview Process for Data Engineers

The Data Engineering interview process at Facebook follows the same procedure as other Facebook technical roles:

**Phone Screen:** It starts with an HR email or an HR phone call. This is followed by a phone screen or an in-person interview usually conducted by a coworker and lasts for about an hour. If you do well, you will be invited for a series of on-site interviews.

**On-site:** You can expect 3 to 4 rounds that last a total of about 4-5 hours. Three of the on-site interviews are focused on problem-solving. You'll be asked about data engineering issues the company faces and how you can help solve them. For instance, you may be asked to identify the metrics for the performance of a specific feature, and you will be expected to write SQL and actual code.

**Behavioral round**: The purpose of behavioral Facebook interview questions is to assess a candidate's self-awareness, growth, self-reliance, and willingness to be a team player.

Recruiters generally ask questions relatable to the workplace environment and wish to know how you'd react to different scenarios. You'll also be asked questions about your strengths,

weaknesses, and interests. are given relatively more importance for senior-level positions at Facebook.

# Data Engineer Interview Questions and Answers

Here are a couple of sample Data Engineer interview questions and answers to help you with your interview preparation:

**Question 1: How do you join two tables with all the information on the left one unchanged?**

Anytime you want all the rows from the left table, regardless of whether or not there's a matching row from the second table, use the LEFT JOIN or LEFT OUTER JOIN. There is no real difference between LEFT JOIN and LEFT OUTER JOIN in working. Both will give the same result. The keyword OUTER is optional. However, sometimes it might be good to use the keyword OUTER, just for clarity.

**Question 2: What command will you use to delete or add a table column in a database?**

To delete or add a table column in a database, you can use the ALTER command along with DROP or ADD, respectively. The following command can be used to add a column of a specific data type and desired constraints:

ALTER TABLE "table_name" ADD "column_name" "data_type" constraints;

And the following command can be used to delete a column:

ALTER TABLE "table_name" DROP "column_name";

# More Facebook Data Engineer Interview Questions

The Facebook Data Engineer interview questions span across various domains, such as:

- Data structures and algorithms
- SQL
- Data pipeline design
- DB performance tuning
- Statistics and modeling

- Metric and visualization solution designs
- Big data solutions like Spark and EMR
- Reporting tools like Tableau and Excel
- Previous project experience
- Building data platforms for hypothetical or existing Facebook products

These Facebook data analytics interview topics are important across the levels. You can expect that Senior Data Engineer interview questions will also involve advanced questions related to these topics.

Here are a few Facebook Data Engineering interview questions to help you practice:

- **Given:** An array of integers
  **Task:** Determine whether the array is monotonic (non-decreasing/non-increasing) or not.
- Design a dashboard to highlight a particular aspect of user behavior.
- Does database view occupy disk space?
- What is the term used to select non-duplicates in SQL?
- What is a loop that goes on forever?
- **Given:** An array
  **Task:** Find the maximum number without using the maximum function.
- **Given:** An array
  **Task:** Find the minimum absolute difference between the set of elements.
- Recursively parse a string for a pattern that can be either 1 or 2 characters long.
- Create DDL (table and foreign keys) for several tables in a provided ERD. ERD contains at least one many to many relationships.
- Perform a merge-sort with SQL only.
- Given full authority to "make it work," import an extensive data set (with duplicates) into a warehouse. You must also meet the requirements of a business intelligence designer for query speed.
- Query a many-to-many relationship while not violating the grain of a fact table.
- **Given:** A number and an array
  **Task:** Find the sum of any two numbers equal to the number
- Design an experiment to test whether a feature spurs conversation.
- **Given:** A raw data table
  **Task:** Perform ETL to get data into a desired format using SQL.
- How do you rate the popularity of a video posted online?
- **Given:** An IP address as an input string
  **Task:** Validate it and return True or False.
- **Given:** A graph which is a multidimensional list
  **Task:** Count the neighbors of each node in a graph

- **Given:** A list of tuples of movie watched times
  **Task:** Find how many unique minutes of the movie did the viewer watch, e.g., [(0,15),(10,25)] — the viewer watched 25 minutes of the movie.
- How do you delete duplicates in a list?
- **Given:** A multi-step product feature
  **Task:** Write SQL to see how well this feature is doing (loading times, step completion %). Next, use Python to update average step time as and when new values stream in, given that there are too many to store in memory.
- Using what operator can you join a table with two tables with one left and matched the right one?
- The ORDER BY command in SQL is automatically set in what format if you don't set it?
- **Given:** A 2D array of friends — [[A,B],[A,C],[B,D],[B,C],[R,M], [S],[P], [A]]
  **Task:** Write a function that creates a dictionary of how many friends each person has (can be 0 to many). There shouldn't be repeat relationships like [A,B] and [B,A], and neither should there be more than two people in a relationship.

# Facebook Interview FAQs

**Question 1: Can I apply for multiple jobs at Facebook?**

As per Facebook's career page, job applications at Facebook are limited to 3 in total. Hence, ensure that you apply for roles that match your work experience and specific skills.

**Question 2: How can I prepare for my interview at Facebook?**

Interviews vary across roles and regions, so it's best to reach out to your recruiter for help with interview preparation. You could also sign up for a technical interview preparation course where experts will guide you through the technical interview process at Facebook.

**Question 3: I interviewed/applied last year at Facebook and wasn't selected. When can I reapply?**

As per Facebook's career page, you need to wait one year before applying for another role. The idea is to allow candidates to develop new skills and gain experience to be successful in the interview process in the future.

**Question 4: What should I focus on while applying for a job at Facebook?**

Focus on your strengths. Facebook likes to ask, "What were you doing on your very best day at work?" Recruiters and hiring managers want you to do that not just on your best day but every day. Show them something you've built. Builders see things that are good but could be better

and figure out how to make them so. Facebook looks for candidates who've got that same building mindset, whether they're applying for executive roles or internships. Share when you've failed and learned. Don't hesitate to talk about the mistakes you've made in the pursuit of big ideas — they want to hear about your failures as much as your wins.

**Note: This information is correct as of May 2021 as per Facebook's website.**

Now that you're familiar with Facebook Data Engineer interview questions, you should feel much more confident in your actual interview day.

Whether you're a Coding Engineer gunning for Software Developer or Software Engineer roles, a Tech Lead, or you're targeting management positions at top companies, IK offers courses specifically designed for your needs to help you with your technical interview preparation!

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