



Unfinished Parts (Tesla)

QUESTION

Tesla is investigating production bottlenecks and they need your help to extract the relevant data. Write a query that determines which parts with the assembly steps have initiated the assembly process but remain unfinished.

Assumptions:

- `parts_assembly` table contains all parts currently in production, each at varying stages of the assembly process.
- An unfinished part is one that lacks a `finish_date`.

This question is straightforward, so let's approach it with simplicity in both thinking and solution.

Effective April 11th 2023, the problem statement and assumptions were updated to enhance clarity.

`parts_assembly` Table

Column Name	Type
part	string
finish_date	datetime

`parts_assembly` Example Input

part	finish_date	assembly_step
battery	01/22/2022 00:00:00	1

Column Name	Type
assembly_step	integer

part	finish_date	assembly_step
battery	02/22/2022 00:00:00	2
battery	03/22/2022 00:00:00	3
bumper	01/22/2022 00:00:00	1
bumper	02/22/2022 00:00:00	2
bumper		3
bumper		4

Step 1: Identify the problem of the case

Determine which pieces with assembly steps have started the assembly process but have not yet been completed by writing a query. đồng nghĩa với việc những phần đó chưa có thông tin phần finish_date

ta có tổng quan bảng dữ liệu:

```
SELECT * FROM parts_assembly;
```

part	finish_date	assembly_step
battery	01/22/2022 00:00:00	1
battery	02/22/2022 00:00:00	2
battery	03/22/2022 00:00:00	3
bumper	01/22/2022 00:00:00	1
bumper	02/22/2022 00:00:00	2
bumper	NULL	3
bumper	NULL	4
door	01/22/2022 00:00:00	1
door	02/22/2022 00:00:00	2
engine	01/01/2022 00:00:00	1
engine	01/25/2022 00:00:00	2

part	finish_date	assembly_step
engine	02/28/2022 00:00:00	3
engine	04/01/2022 00:00:00	4
engine	NULL	5

Bảng kết quả ta thu được sẽ có dạng:

part	assembly_step
bumper	3
bumper	4

Step 2 : Analyze and solve problems

Đầu tiên ta thấy từ bảng dữ liệu là có phần bumper và engine chưa hoàn thiện vì field finish_date không có dữ liệu (NULL).

Ta dùng WHERE để lọc những dữ liệu có finish_date là NULL, ta có

```
SELECT part, assembly_step
FROM parts_assembly
WHERE finish_date is NULL
```

We have the result:

part	assembly_step
bumper	3
bumper	4
engine	5