Original Table

order_id	house_no	street_no	city	date	day	time
101	H12	Street 5	Lahore	2025-05-20	Tuesday	2:00
102	B23	Street 9	Karachi	2025-05-21	Wednesday	4:00

1NF (First Normal Form)

- ✓ **Already in 1NF**
- ✓ all values are atomic
- ✓ no multivalued or repeating groups.

2NF (Second Normal Form)

- ✓ order_id is the **primary key**.
- ✓ All non-key attributes depend fully on order_id.
- ✓ **So, this table is in 2NF.**

3NF (Third Normal Form)

- ✓ We look for **transitive dependencies**.
- ✓ date → day — the day can be derived from date.
- ✓ So, day is transitively dependent on order_id via date.

Split day into a separate table :

- ✓ **customerdeliveryaddress**

order_id	house_no	street_no	city	date	time

order_id	house_no	street_no	city	date	time
101	H12	Street 5	Lahore	2025-05-20	2:00
102	B23	Street 9	Karachi	2025-05-21	4:00

✓ **delivery_day (optional, if needed separately)**

date	day
2025-05-20	Tuesday
2025-05-21	Wednesday

✓ **Now the table is in 3NF.**

BCNF (Boyce-Codd Normal Form)

✓ All functional dependencies have a candidate key on the left.
✓ In both tables above, all non-key fields depend on the whole key.
✓ **BCNF is satisfied.**

4NF (Fourth Normal Form)

✓ No multivalued dependencies.
✓ Each row represents **a single fact**.
✓ **4NF is satisfied.**

5NF (Fifth Normal Form)

✓ No complex join dependencies.
✓ Our decomposition is lossless and joinable.
✓ **5NF is satisfied.**