Step 1: Normalize to 3NF

1. Table: Person

- person_id → PK
- last_name, first_name
- age, gender
- address_line1, address_line2, city, state, zipcode

All are atomic (1NF)

Each attribute is fully functional dependent on PK (2NF)

No transitive dependencies (3NF)

2. Table: Phone

- person_id → FK to person
- phone_number → Comp. PK with person_id

One-to-many relationship

No partial/transitive dependencies

3. Table: Employee

- person_id → PK, FK to person
- rank, title
- supervisor_id → FK to employee.person_id

Direct properties of the employee, no derived/transitive attr.

4. Table: Customer

- person_id → PK, FK to person
- preferred_sales_rep_id → FK to employee.person_id

3NF

5. Table: potential_employee

- Only attribute is person_id (PK)

Already normalized as an indicator/flag

6. Table : department_assignment

- person_id, department_id → Composite Pk
- start_time, end_time

3NF : Composite key ; time periods are atomic

7. Table : Job_position

- job_id ↔ Pk
- department_id → FK
- job_description, posted_date

3NF

8. Table : job_application

- job_id, person_id → Composite Pk

3NF → No non-key attributes to check

9. Table : Interview

- Interview_id → PK
- Job_id, interviewee_id, interviewer_id
- grade, interview_time

3NF → all attributes for unique interview

10. Table : Product

- Product_id → PK
- Style, weight, size, list-price, product_ty

3NF → No derived or transitive dependenc

11. Table : Marketing_site

- Site_id → PK
- site_name, site_location

3NF

12. Table: Site_assignment

- person_id, site_id → Composite PK

3NF, Junction Table

13. Table: Sale-History

- sale_id → PK
- salesman_id, site_id, sale_time, product_id, customer_id

3NF → Atomic & properly structured

14. Table: Vendor

- Vendor_id → PK
- name, address, account_number, credit_rating, web-service_url

3NF

15. Table : part_type

- part_type_id → PK
- name, weight

3NF

16. Table : Vendor_part

- vendor_id, part_type_id → Composite PK
- price

3NF → Price per vendor-part combo is atomic

17. Table : product_part

- product_id, part_type_id → Composite PK
- quantity

18. Table : Salary

- person-id, transaction_number → Composite PK
- pay-date, amount

3NF → atomic and no transitive dependencies