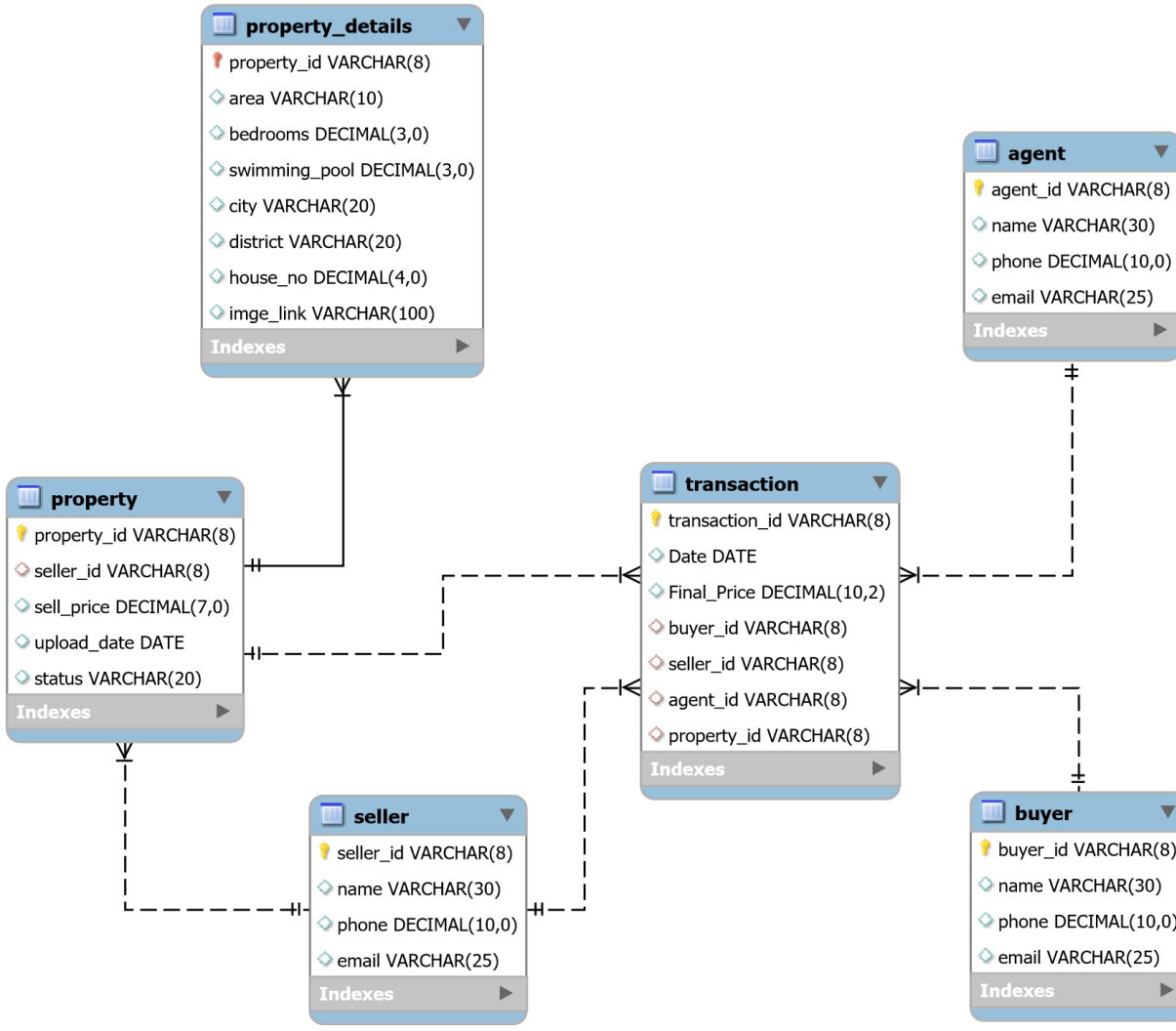
NORMALIZATION APPROACH



NORMALIZATION APPROACH:

1. **Property Table:**

   FD: property_id → {seller_id, sell_price, upload_date, status}
   Candidate Key (& PK also) : property_id

   1NF: All the attributes are **atomic,** therefore the table is in **1NF.**
   2NF: 1NF and **no partial dependency**, therefore it is in **2NF**.
   3NF: Since, **no non primary attribute determines any other non primary attribute,** therefore it is in **3NF.**
   BCNF: Since , **in FD (like X→ Y), X is a Superkey,** therefore it is in **BCNF.**

2. **Property_Details Table:**

   FD: property_id → {area, bedrooms, swimming_pool, city, district, house_no, image_link}
   Candidate Key (& PK also): property_id

   1NF: All the attributes are **atomic,** therefore the table is in **1NF.**
   2NF: 1NF and **no partial dependency**, therefore it is in **2NF**.
   3NF: Since, **no non primary attribute determines any other non primary attribute,** therefore it is in **3NF.**
   BCNF: Since , **in FD (like X→ Y), X is a Superkey,** therefore it is in **BCNF.**

3. **Agent Table:**

   FD: agent_id → {name, phone, email}
   Candidate Key (& PK also): agent_id

   1NF: **None of the attributes are multivalued,** therefore the table is in **1NF.**
   2NF: 1NF and **no partial dependency**, therefore it is in **2NF**.
   3NF: Since, **no non primary attribute determines any other non primary attribute,** therefore it is in **3NF.**
   BCNF: Since , **in FD (like X→ Y), X is a Superkey,** therefore it is in **BCNF.**

4. **Buyer Table:**

   FD: buyer_id → {name, phone, email}

Candidate Key (& PK also): buyer_id

1NF: All the attributes are **atomic,** therefore the table is in **1NF.**
2NF: 1NF and **no partial dependency**, therefore it is in **2NF**.
3NF: Since, **no non primary attribute determines any other non primary attribute,** therefore it is in **3NF.**
BCNF: Since , **in FD (like X→ Y), X is a Superkey,** therefore it is in **BCNF.**

5. **Seller Table:**

FD: seller_id → {name, phone, email}
Candidate Key (& PK also): seller_id

1NF: **None of the attributes are multivalued,** therefore the table is in **1NF.**
2NF: 1NF and **no partial dependency**, therefore it is in **2NF**.
3NF: Since, **no non primary attribute determines any other non primary attribute,** therefore it is in **3NF.**
BCNF: Since , **in FD (like X→ Y), X is a Superkey,** therefore it is in **BCNF.**

6. **Transactions Table:**

FD: transaction_id → {date, final_price, seller_id, buyer_id, agent_id, property_id }
Candidate Key (& PK also): transaction_id

1NF: All the attributes are **atomic,** therefore the table is in **1NF.**
2NF: 1NF and **no partial dependency**, therefore it is in **2NF**.
3NF: Since, **no non primary attribute determines any other non primary attribute,** therefore it is in **3NF.**
BCNF: Since , **in FD (like X→ Y), X is a Superkey,** therefore it is in **BCNF.**