MINIMAL FD SET AND NORMALIZATION PROOFS

1.Users Table

In this table, the primary key is {user_id}.

Minimal FD set:

user_id→{fname}
user_id→ {lname}
user_id→{IsVerified}
user_id→{PhoneNumber}
user_id→{emailaddress}

As all the attributes on the right are determined by the primary key {user_id}, it is in **BCNF**.

2. Service Providers Table

In this table, the primary key is {service_providerid}.

Minimal FD set:

service_providerid→{fname}

service_providerid→{lname}

service_providerid→{IsVerified}

service_providerid→{PhoneNumber}

service_providerrid→{emailaddress}

service_providerid→{category}

service_providerid→{city}

service_providerid→{state}

service_providerid→{pincode}

As all the attributes on the right are determined by the primary key {service_providerid, it is in **BCNF**.

3. Services Table

In this table, the primary key is formed by {category}.

Minimal FD set:

category → {price}
category→ {duration}

As all the attributes on the right are uniquely determined by the primary key {category}, it is in **BCNF**.

4. Offers Table

In this table, the primary key is {offer_id}.

Minimal FD set:

offer_id →{code}

offer_id →{start_date}

offer_id →{end_date}

offer_id →{category}

offer_id →{description}

Here, all the attributes on the right side are uniquely determined by the primary key {offer_id}, it is in **BCNF**.

5. Requests Table

In this table, the primary key is {address_id}.

Minimal FD set:

req_id →{date}

req_id →{location_id}

req_id →{start_time}

Here, all the attributes on the right side are uniquely determined by the primary key {req_id}, it is in **BCNF.**

6. Addresses Table

In this table, the primary key is formed by {address_id}.

Minimal FD set:

address_id→{house_details}

address_id→{street_name}

address_id→{landmark}

address_id→{city}

address_id→{state}

address_id→{pincode}

Here, all the attributes on the right side are uniquely determined by the primary key {address_id}, it is in **BCNF.**

7. Booking Table

In this table, the primary key is {booking_id}.

Minimal FD set:

booking_id→{end_time}

booking_id →{req_id}

As the attribute on the right is uniquely determined by the primary key {booking_id}, it is in **BCNF**.

8. Payment Table

In this table, the primary key is a composite key made by {invoice_no, offer_id}

Minimal FD set:

{invoice_no,offer_id} →{amount}

{invoice_no,offer_id}→{discount}

{invoice_no,offer_id} →{total_amount}

{invoice_no,offer_id} →{method}

{invoice_no,offer_id} →{status}

As all the attributes on the right are uniquely determined by the composite key {invoice_no, offer_id}, it is in **BCNF**.

9. Reviews Table

Minimal FD set:

booking_id →{rating, review_comment}

As all the attributes on the right are uniquely determined by {booking_id}, it is in **BCNF**.