Analysis

Following is my understanding of our database according to the shared code snipped (XML code).

1. Mainly three tables our database will contain
   1. Orders
   2. Windows
   3. sub\_elements
2. **orders** table will contain the following columns
   1. name
   2. state
3. Each **order** can have multiple **windows**. Therefore **orders** and **windows** table has one-to-many relation.
4. **windows** table will contain the following columns
   1. name
   2. quantity\_of\_widows // should be non-negative
5. Each **window** can have multiple **sub-elements**. Therefore **windows** and **sub\_elements** table has one-to-many relation.
6. I am not planning to store **total\_sub\_elements** in the database for the **windows** table, as I can easily count the total **sub\_element** for a window. Therefore, if I plan to keep it as a column (total\_sub\_elements), this column should be redundant.
7. And finally, the **sub\_elements** table will contain the following columns
   1. Element
   2. type // Can be only **Doors** and **Window**
   3. width // should be non-negative
   4. height // should be non-negative
8. I assume the **element** column value for a window can be duplicated from the given XML code snippet for the **SubElements** in the last **window** of the last **order**.

<Orders>

…

<Order Name="California Hotel AJK" State="CA">

<Windows>

…

<Window Name="OHF" QuantityOfWindows="10" TotalSubElements="2">

<SubElements>

<SubElement Element="1" Type="Window" Width="1500" Height="2000" />

<SubElement Element="1" Type="Window" Width="1500" Height="2000" />

</SubElements>

</Window>

</Windows>

</Order>

</Orders>

I would be grateful if you share your feedback regarding the previous points. I am expecting your feedback on the **red** color point at least.