Keys in RDBMS

Keys in Relational data model play an important role. Keys help to identify records uniquely in a table/relation. It also used to establish relationships between tables.

“A key is an attribute or set of attributes in a table/relation which helps to identify a row/tuple or record uniquely.”

There are following types of keys in RDBMS:
**Super Key:**

Super key is defined as attribute or set of attributes within a table that can identify each record uniquely within a table.

Super key is a superset of candidate key.

A super key may have additional attribute (s) that are not needed for unique identification.

Let us suppose following relation/table:

Table: employee_info

\[(\text{emp_id, emp_name, emp_fname, emp_dob, emp_address, emp_city, emp_adhaar, emp_mobile, emp_email})\]

Super keys in above table are:

1. \{emp_id\},
2. \{emp_id, emp_name\},
3. \{emp_id, emp_dob\},
4. \{emp_id, emp_city\},
5. \{emp_adhaar\},
6. \{emp_adhaar, emp_city, emp_dob\}
   and many more …

Here, we can see that above attribute or set of attributes are super key because these are able to identify each record uniquely in a table.

The following attribute or set of attributes are not super key:

1. \{emp_name\}
2. \{emp_name, emp_fname\},
3. \{emp_city, emp_dob\},
4. \{emp_dob, emp_fname\}
   and many more ….

because:

In sr. no 1 two or more employees may have same name
In sr. no 2 two or more employees may have same name and father’s name
In sr. no 3 two or more employees may have same dob and they may belong to same city
In sr. no 4 two or more employees may have same dob and father’s name
Exercises:

1. Identify all possible super keys in following table:

<table>
<thead>
<tr>
<th>dept_id</th>
<th>dept_name</th>
<th>dept_location</th>
<th>dept_budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>IT</td>
<td>GF-20</td>
<td>500000</td>
</tr>
<tr>
<td>102</td>
<td>Electronics</td>
<td>GF-23</td>
<td>400000</td>
</tr>
<tr>
<td>103</td>
<td>Admin</td>
<td>FF-23</td>
<td>350000</td>
</tr>
<tr>
<td>104</td>
<td>Accounts</td>
<td>FF-24</td>
<td>250000</td>
</tr>
</tbody>
</table>

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