| **Field Name** | **Type** | **Description / Notes** |
| --- | --- | --- |
| project\_details | STRING | General project info |
| op\_number | STRING | OP Number |
| opu\_number | STRING | OPU Number |
| edu\_number | STRING | EDU Number |
| model\_family | STRING | Model Family |
| model\_name | STRING | Model Name |
| impedance | ENUM | Choices: 50 ohms, 75 ohms, Others |
| custom\_impedance | STRING | Custom Impedance value (if 'Others' selected) |
| package | ENUM | Choices: SMT, Connectorized, Lead, Plug-in |
| case\_style | ENUM | Choices: Existing, Modify Existing, New |
| selected\_case\_style | ENUM | Choices: Case A, Case B, Case C, Case D |
| bottom\_solder\_mask | ENUM | Choices: Full solder mask, Strip solder mask, No solder mask |
| half\_moon\_requirement | BOOLEAN | Yes → true, No → false |
| via\_holes\_requirement | BOOLEAN | Yes → true, No → false |
| signal\_passing | ENUM | Choices: PCB, Lead, Pin |
| cover\_type | ENUM | Choices: Open, Closed |
| design\_rule\_violation | BOOLEAN | Yes → true, No → false |
| schematic | STRING / TEXT | Optional (e.g., file URL) |
| similar\_model | STRING / TEXT | Optional |
| can\_material | ENUM | Choices: Aluminum, Tin, Others |
| can\_custom\_material | STRING | Custom CAN material (if 'Others' selected) |
| can\_making\_process | ENUM | Choices: Deep Drawing, Impact Extrusion |
| pcb\_details | JSON | Multiple PCB records stored as JSON |
| created\_by | STRING | Created by (User info) |
| updated\_by | STRING | Updated by (User info) |
| status | ENUM | Choices: Draft, Completed, Verified, Approved |
| created\_at | TIMESTAMP | Default: Current timestamp |
| updated\_at | TIMESTAMP | Update on modification |

|  |  |  |
| --- | --- | --- |
| pcb\_details | JSON | Multiple PCB records stored as JSON array |

[

{

"pcb\_name": "Main Board",

"material": "FR4",

"thickness": "1.6mm",

"layers": 4,

"mounting\_orientation": "Horizontal",

"comments": "Standard FR4 material"

},

{

"pcb\_name": "Power Board",

"material": "Rogers",

"thickness": "0.8mm",

"layers": 2,

"mounting\_orientation": "Vertical",

"comments": "High frequency board"

}

]

|  |  |  |
| --- | --- | --- |
| aircoil\_details | JSON | Multiple AirCoil records stored as JSON array |

[

{

"has\_bp\_number": true,

"bp\_number": "BP12345",

"supplier\_available": true,

"supplier\_name": "ABC Electronics",

"supplier\_part\_number": "ABC-5678",

"qualification\_status": "Qualification"

},

{

"has\_bp\_number": false,

"supplier\_available": true,

"supplier\_name": "XYZ Components",

"supplier\_part\_number": "XYZ-4321",

"qualification\_status": "Approval"

}

]

|  |  |  |
| --- | --- | --- |
| inductor\_details | JSON | Multiple Inductor records stored as JSON array |

[

{

"has\_bp\_number": true,

"bp\_number": "IND-BP-001",

"supplier\_available": true,

"supplier\_name": "Inductor Supplier A",

"supplier\_part\_number": "ISA-1234",

"qualification\_status": "Qualification"

},

{

"has\_bp\_number": false,

"supplier\_available": false,

"qualification\_status": "Approval"

}

]

|  |  |  |
| --- | --- | --- |
| capacitor\_details | JSON | Multiple Capacitor records stored as JSON array |

[

{

"has\_bp\_number": true,

"bp\_number": "CAP-BP-001",

"supplier\_available": true,

"supplier\_name": "Capacitor Supplier A",

"supplier\_part\_number": "CSA-5678",

"qualification\_status": "Qualification"

},

{

"has\_bp\_number": false,

"supplier\_available": false,

"qualification\_status": "Approval"

}

]

|  |  |  |
| --- | --- | --- |
| resistor\_details | JSON | Multiple Resistor records stored as JSON array |

[

{

"has\_bp\_number": true,

"bp\_number": "RES-BP-001",

"supplier\_available": true,

"supplier\_name": "Resistor Supplier A",

"supplier\_part\_number": "RSA-1234",

"qualification\_status": "Qualification"

},

{

"has\_bp\_number": false,

"supplier\_available": false,

"qualification\_status": "Approval"

}

]

|  |  |  |
| --- | --- | --- |
| transformer\_details | JSON | Multiple Transformer records stored as JSON array |

[

{

"core\_type": "Single Core",

"core\_bp\_number": "TRANS-BP-001",

"wire\_type": "Single Wire",

"wire\_gauge": "18 AWG",

"number\_of\_turns": 100

},

{

"core\_type": "Double Core",

"core\_bp\_number\_1": "TRANS-BP-002",

"core\_bp\_number\_2": "TRANS-BP-003",

"wire\_type": "Double Wire",

"wire\_gauge\_1": "16 AWG",

"wire\_gauge\_2": "14 AWG",

"number\_of\_turns": 200

}

]

|  |  |  |
| --- | --- | --- |
| shield\_details | JSON | Multiple Shield records stored as JSON array |

[

{

"shield\_required": true,

"number\_of\_shields": 3

},

{

"shield\_required": false

}

]

|  |  |  |
| --- | --- | --- |
| finger\_details | JSON | Multiple Finger records stored as JSON array |

[

{

"finger\_required": true,

"number\_of\_fingers": 5

},

{

"finger\_required": false

}

]

|  |  |  |
| --- | --- | --- |
| copper\_flaps\_details | JSON | Multiple Copper Flaps records stored as JSON array |

[

{

"existing\_bpn": "COP-BP-001",

"new\_bpn": "COP-BP-002",

"length": 20.5,

"width": 10.2,

"thickness": 0.5

},

{

"existing\_bpn": "COP-BP-003",

"new\_bpn": "COP-BP-004",

"length": 25.0,

"width": 15.0,

"thickness": 0.7

}

]

|  |  |  |
| --- | --- | --- |
| resonator\_details | JSON | Multiple Resonator records stored as JSON array |

[

{

"type": "existing",

"bp\_number": "RES-BP-001",

"resonator\_size": "Size A",

"dielectric\_constant": 3.5,

"resonator\_length": 15.0,

"resonator\_frequency": 2.4,

"comments": "Standard size"

},

{

"type": "new",

"bp\_number": "RES-BP-002",

"resonator\_size": "Size B",

"dielectric\_constant": 4.0,

"resonator\_length": 20.0,

"resonator\_frequency": 5.0,

"comments": "Custom size"

}

]

|  |  |  |
| --- | --- | --- |
| ltcc\_details | JSON | Multiple LTCC records stored as JSON array |

[

{

"model\_name": "LTCC Model A",

"comments": "Standard model for high-frequency applications"

},

{

"model\_name": "LTCC Model B",

"comments": "Custom model designed for specialized use cases"

}

]

Full table sql qurie

CREATE TABLE project\_info (

id INT AUTO\_INCREMENT PRIMARY KEY,

project\_details VARCHAR(255),

op\_number VARCHAR(255),

opu\_number VARCHAR(255),

edu\_number VARCHAR(255),

model\_family VARCHAR(255),

model\_name VARCHAR(255),

impedance ENUM('50 ohms', '75 ohms', 'Others'),

custom\_impedance VARCHAR(255),

package ENUM('SMT', 'Connectorized', 'Lead', 'Plug-in'),

case\_style ENUM('Existing', 'Modify Existing', 'New'),

selected\_case\_style ENUM('Case A', 'Case B', 'Case C', 'Case D'),

bottom\_solder\_mask ENUM('Full solder mask', 'Strip solder mask', 'No solder mask'),

half\_moon\_requirement BOOLEAN,

via\_holes\_requirement BOOLEAN,

signal\_passing ENUM('PCB', 'Lead', 'Pin'),

cover\_type ENUM('Open', 'Closed'),

design\_rule\_violation BOOLEAN,

schematic TEXT,

similar\_model TEXT,

can\_material ENUM('Aluminum', 'Tin', 'Others'),

can\_custom\_material VARCHAR(255),

can\_making\_process ENUM('Deep Drawing', 'Impact Extrusion'),

pcb\_details JSON,

aircoil\_details JSON,

inductor\_details JSON,

capacitor\_details JSON,

resistor\_details JSON,

transformer\_details JSON,

shield\_details JSON,

finger\_details JSON,

copper\_flaps\_details JSON,

resonator\_details JSON,

ltcc\_details JSON,

created\_by VARCHAR(255),

updated\_by VARCHAR(255),

status ENUM('Draft', 'Completed', 'Verified', 'Approved'),

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

updated\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

stepcomplete INT DEFAULT 0 -- This will now store numeric values (1, 2, 3, 4, etc.)

);

Improved Version with Adjustments:

CREATE TABLE project\_info (

id INT AUTO\_INCREMENT PRIMARY KEY,

project\_details VARCHAR(500), -- Increased length for detailed project info

op\_number VARCHAR(100) NOT NULL, -- Assuming op\_number is required

opu\_number VARCHAR(100) NOT NULL, -- Assuming opu\_number is required

edu\_number VARCHAR(100) NOT NULL, -- Assuming edu\_number is required

model\_family VARCHAR(100), -- Reduced size

model\_name VARCHAR(100) NOT NULL, -- Assuming model\_name is always provided

impedance ENUM('50 ohms', '75 ohms', 'Others') NOT NULL, -- Assuming impedance is required

custom\_impedance VARCHAR(100) DEFAULT NULL, -- Custom impedance optional

package ENUM('SMT', 'Connectorized', 'Lead', 'Plug-in') NOT NULL,

case\_style ENUM('Existing', 'Modify Existing', 'New') NOT NULL,

selected\_case\_style ENUM('Case A', 'Case B', 'Case C', 'Case D') NOT NULL,

bottom\_solder\_mask ENUM('Full solder mask', 'Strip solder mask', 'No solder mask') NOT NULL,

half\_moon\_requirement BOOLEAN NOT NULL DEFAULT false,

via\_holes\_requirement BOOLEAN NOT NULL DEFAULT false,

signal\_passing ENUM('PCB', 'Lead', 'Pin') NOT NULL,

cover\_type ENUM('Open', 'Closed') NOT NULL,

design\_rule\_violation BOOLEAN NOT NULL DEFAULT false,

schematic TEXT DEFAULT NULL, -- Optional for URLs or extra info

similar\_model TEXT DEFAULT NULL, -- Optional

can\_material ENUM('Aluminum', 'Tin', 'Others') NOT NULL,

can\_custom\_material VARCHAR(100) DEFAULT NULL, -- Custom material optional

can\_making\_process ENUM('Deep Drawing', 'Impact Extrusion') NOT NULL,

pcb\_details JSON DEFAULT NULL,

aircoil\_details JSON DEFAULT NULL,

inductor\_details JSON DEFAULT NULL,

capacitor\_details JSON DEFAULT NULL,

resistor\_details JSON DEFAULT NULL,

transformer\_details JSON DEFAULT NULL,

shield\_details JSON DEFAULT NULL,

finger\_details JSON DEFAULT NULL,

copper\_flaps\_details JSON DEFAULT NULL,

resonator\_details JSON DEFAULT NULL,

ltcc\_details JSON DEFAULT NULL,

created\_by VARCHAR(255) NOT NULL, -- User ID or Name, assuming this is mandatory

updated\_by VARCHAR(255) NOT NULL, -- User ID or Name, assuming this is mandatory

status ENUM('Draft', 'Completed', 'Verified', 'Approved') NOT NULL DEFAULT 'Draft',

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

updated\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

stepcomplete INT NOT NULL DEFAULT 0, -- Numeric values for step completion (0 = Not Started)

INDEX(status), -- Index on status for performance optimization

INDEX(stepcomplete) -- Index on stepcomplete for filtering progress

);

To store these fields with numeric values in the project\_info table, we can follow the same approach as discussed earlier, i.e., create an enum\_values table for each of the ENUM fields, and store numeric references to those values in the project\_info table.

Let's go step-by-step for each of these fields.

### **1. Create enum\_values for each field:**

Each of the ENUM fields can be stored with numeric codes in a dedicated enum\_values table. Here is how you can handle each field.

#### **1.1. selected\_case\_style ENUM ('Case A', 'Case B', 'Case C', 'Case D')**

First, insert the possible values in the enum\_values table:

INSERT INTO enum\_values (category, enum\_key, enum\_value)

VALUES

('selected\_case\_style', 1, 'Case A'),

('selected\_case\_style', 2, 'Case B'),

('selected\_case\_style', 3, 'Case C'),

('selected\_case\_style', 4, 'Case D');

Then, modify the project\_info table to store the numeric values (referencing enum\_values):

ALTER TABLE project\_info ADD COLUMN selected\_case\_style INT NOT NULL;

#### **1.2. bottom\_solder\_mask ENUM ('Full solder mask', 'Strip solder mask', 'No solder mask')**

Insert the possible values into the enum\_values table:

INSERT INTO enum\_values (category, enum\_key, enum\_value)

VALUES

('bottom\_solder\_mask', 1, 'Full solder mask'),

('bottom\_solder\_mask', 2, 'Strip solder mask'),

('bottom\_solder\_mask', 3, 'No solder mask');

And modify the table:

ALTER TABLE project\_info ADD COLUMN bottom\_solder\_mask INT NOT NULL;

#### **1.3. signal\_passing ENUM ('PCB', 'Lead', 'Pin')**

Insert values for signal\_passing:

INSERT INTO enum\_values (category, enum\_key, enum\_value)

VALUES

('signal\_passing', 1, 'PCB'),

('signal\_passing', 2, 'Lead'),

('signal\_passing', 3, 'Pin');

And modify the table:

ALTER TABLE project\_info ADD COLUMN signal\_passing INT NOT NULL;

#### **1.4. cover\_type ENUM ('Open', 'Closed')**

Insert values for cover\_type:

INSERT INTO enum\_values (category, enum\_key, enum\_value)

VALUES

('cover\_type', 1, 'Open'),

('cover\_type', 2, 'Closed');

And modify the table:

ALTER TABLE project\_info ADD COLUMN cover\_type INT NOT NULL;

#### **1.5. can\_material ENUM ('Aluminum', 'Tin', 'Others')**

Insert values for can\_material:

INSERT INTO enum\_values (category, enum\_key, enum\_value)

VALUES

('can\_material', 1, 'Aluminum'),

('can\_material', 2, 'Tin'),

('can\_material', 3, 'Others');

And modify the table:

ALTER TABLE project\_info ADD COLUMN can\_material INT NOT NULL;

#### **1.6. can\_making\_process ENUM ('Deep Drawing', 'Impact Extrusion')**

Insert values for can\_making\_process:

INSERT INTO enum\_values (category, enum\_key, enum\_value)

VALUES

('can\_making\_process', 1, 'Deep Drawing'),

('can\_making\_process', 2, 'Impact Extrusion');

And modify the table:

ALTER TABLE project\_info ADD COLUMN can\_making\_process INT NOT NULL;

### **2. Modify the project\_info Table**

Here’s how the modified project\_info table will look after adding these numeric references for the ENUM fields:

CREATE TABLE project\_info (

id INT AUTO\_INCREMENT PRIMARY KEY,

project\_details VARCHAR(500), -- Increased length for detailed project info

op\_number VARCHAR(100) NOT NULL, -- Assuming op\_number is required

opu\_number VARCHAR(100) NOT NULL, -- Assuming opu\_number is required

edu\_number VARCHAR(100) NOT NULL, -- Assuming edu\_number is required

model\_family VARCHAR(100), -- Reduced size

model\_name VARCHAR(100) NOT NULL, -- Assuming model\_name is always provided

impedance INT NOT NULL, -- Numeric value (1, 2, 3, etc.) referencing enum\_values

custom\_impedance VARCHAR(100) DEFAULT NULL, -- Custom impedance optional

package INT NOT NULL, -- Numeric value (1, 2, 3, etc.) referencing enum\_values

case\_style INT NOT NULL, -- Numeric value (1, 2, 3, etc.) referencing enum\_values

selected\_case\_style INT NOT NULL, -- Numeric value (1, 2, 3, 4) referencing enum\_values

bottom\_solder\_mask INT NOT NULL, -- Numeric value (1, 2, 3) referencing enum\_values

half\_moon\_requirement BOOLEAN NOT NULL DEFAULT false,

via\_holes\_requirement BOOLEAN NOT NULL DEFAULT false,

signal\_passing INT NOT NULL, -- Numeric value (1, 2, 3) referencing enum\_values

cover\_type INT NOT NULL, -- Numeric value (1, 2) referencing enum\_values

design\_rule\_violation BOOLEAN NOT NULL DEFAULT false,

schematic TEXT DEFAULT NULL, -- Optional for URLs or extra info

similar\_model TEXT DEFAULT NULL, -- Optional

can\_material INT NOT NULL, -- Numeric value (1, 2, 3) referencing enum\_values

can\_custom\_material VARCHAR(100) DEFAULT NULL, -- Custom material optional

can\_making\_process INT NOT NULL, -- Numeric value (1, 2) referencing enum\_values

pcb\_details JSON DEFAULT NULL,

aircoil\_details JSON DEFAULT NULL,

inductor\_details JSON DEFAULT NULL,

capacitor\_details JSON DEFAULT NULL,

resistor\_details JSON DEFAULT NULL,

transformer\_details JSON DEFAULT NULL,

shield\_details JSON DEFAULT NULL,

finger\_details JSON DEFAULT NULL,

copper\_flaps\_details JSON DEFAULT NULL,

resonator\_details JSON DEFAULT NULL,

ltcc\_details JSON DEFAULT NULL,

created\_by VARCHAR(255) NOT NULL, -- User ID or Name, assuming this is mandatory

updated\_by VARCHAR(255) NOT NULL, -- User ID or Name, assuming this is mandatory

status INT NOT NULL, -- Numeric value (1, 2, 3, etc.) referencing enum\_values

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

updated\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

stepcomplete INT NOT NULL DEFAULT 0, -- Numeric values for step completion (0 = Not Started)

INDEX(status), -- Index on status for performance optimization

INDEX(stepcomplete) -- Index on stepcomplete for filtering progress

);

### **3. Benefits of This Approach**

* **Centralized Enum Management**: The enum\_values table keeps all enum options in one place, which is easier to maintain.
* **Consistency and Flexibility**: By using numeric codes for ENUM values, it’s easier to add, remove, or modify enum values without altering the project\_info table schema.
* **Improved Performance**: Storing numeric values is more efficient than text-based ENUM types in large-scale applications.
* **Data Integrity**: Ensures that only valid values can be stored in project\_info, preventing invalid enum values from being inserted.

Let me know if you need further modifications or additional queries!