DBS LAB - 03

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Roll Number: **22SW028**

Section: **01**

**Normal Forms (1NF, 2NF, 3NF)**

**Tasks:**

**Task 1**

|  |  |  |  |
| --- | --- | --- | --- |
| **ITEM** | **COLORS** | **PRICE($)** | **TAX** |
| T-shirt | Red, Blue | 12.00 | 0.60 |
| Polo | Red, Yellow | 12.00 | 0.60 |
| Sweatshirt | Blue, Black | 25.00 | 1.25 |

**Convert into 1NF, 2NF and 3NF**

**Solution:**

**1NF Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| **ITEM** | **COLORS** | **PRICE** | **TAX** |
| T-Shirt | Red | 12.00 | 0.60 |
| T-Shirt | Blue | 12.00 | 0.60 |
| Polo | Red | 12.00 | 0.60 |
| Polo | Yellow | 12.00 | 0.60 |
| Sweatshirt | Blue | 25.00 | 1.25 |
| Sweatshirt | Black | 25.00 | 1.25 |

**2NF Table:**

**Item\_Color Table:**

**Pk: Item and color composite primary key.**

|  |  |
| --- | --- |
| **ITEM** | **COLORS** |
| T-Shirt | Red |
| T-Shirt | Blue |
| Polo | Red |
| Polo | Yellow |
| Sweatshirt | Blue |
| Sweatshirt | Black |

**Item\_Price Table:**

|  |  |  |
| --- | --- | --- |
| **ITEM (PK)** | **PRICE** | **TAX** |
| T-Shirt | 12.00 | 0.60 |
| Polo | 12.00 | 0.60 |
| Sweatshirt | 25.00 | 1.25 |

**3NF Table:**

**Item\_Color Table:**

|  |  |
| --- | --- |
| **ITEM** | **COLORS** |
| T-Shirt | Red |
| T-Shirt | Blue |
| Polo | Red |
| Polo | Yellow |
| Sweatshirt | Blue |
| Sweatshirt | Black |

**Item\_Price Table:**

|  |  |
| --- | --- |
| **ITEM (PK)** | **PRICE(FK)** |
| T-Shirt | 12.00 |
| Polo | 12.00 |
| Sweatshirt | 25.00 |

**Tax table:**

|  |  |
| --- | --- |
| **PRICE (PK)** | **TAX** |
| 12.00 | 0.60 |
| 25.00 | 1.25 |

**Task 2**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SUPPLIER** | **NAME** | **CITY\_ID** | **CITY** | **PART** | **QUANTITY** |
| S1 | Ali | 10 | Paris | P3 | 257 |
| S1 | Ali | 10 | Paris | P1 | 500 |
| S1 | Ali | 10 | Paris | P4 | 125 |
| S2 | James | 12 | London | P3 | 200 |
| S7 | Robert | 10 | Paris | P4 | 342 |

**Convert into 1NF, 2NF and 3NF**

**Solution:**

**1NF Table:**

**Supplier\_Part Table:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SUPPLIER** | **NAME** | **CITY\_ID** | **CITY** | **PART** | **QUANTITY** |
| S1 | Ali | 10 | Paris | P3 | 257 |
| S1 | Ali | 10 | Paris | P1 | 500 |
| S1 | Ali | 10 | Paris | P4 | 125 |
| S2 | James | 12 | London | P3 | 200 |
| S7 | Robert | 10 | Paris | P4 | 342 |

**Pk: Composite primary key supplier and part.**

**2NF Table:  
Supplier Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| **SUPPLIER (PK)** | **NAME** | **CITY\_ID** | **CITY** |
| S1 | Ali | 10 | Paris |
| S2 | James | 12 | London |
| S7 | Robert | 10 | Paris |

**Supplier\_Part Table:**

|  |  |  |
| --- | --- | --- |
| **SUPPLIER** | **PART** | **QUANTITY** |
| S1 | P3 | 257 |
| S1 | P1 | 500 |
| S1 | P4 | 125 |
| S2 | P3 | 200 |
| S7 | P4 | 342 |

**3NF Table:  
Supplier Table:**

|  |  |  |
| --- | --- | --- |
| **SUPPLIER (PK)** | **NAME** | **CITY\_ID (FK)** |
| S1 | Ali | 10 |
| S2 | James | 12 |
| S7 | Robert | 10 |

**Location Table:**

|  |  |
| --- | --- |
| **CITY\_ID (PK)** | **CITY** |
| 10 | Paris |
| 12 | London |

**Supplier\_Part Table:**

|  |  |  |
| --- | --- | --- |
| **SUPPLIER** | **PART** | **QUANTITY** |
| S1 | P3 | 257 |
| S1 | P1 | 500 |
| S1 | P4 | 125 |
| S2 | P3 | 200 |
| S7 | P4 | 342 |