**RELATIONAL DATABASE PROJECT**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Customer\_ID** | **First Name** | **Last Name** | **Address** | **Date** | **Trip\_Type** |
| 159 | Eliud | Kipchoge | LK, Limerick | October | safari |
| 234 | Laura | Muir | LK, Limerick | January | round\_the\_world |
| 159 | Eliud | Kipchoge | LK, Limerick | October | cultural\_trip |
| 182 | Keith | Fallon | CE, Clare | October | safari |
| 159 | Eliud | Kipchoge | LK, Limerick | November | cultural\_trip |
| 199 | Molly | Huddle | DN, Dublin | July | ski\_break |
| 234 | Laura | Muir | LK, Limerick | November | cultural\_trip |
| 536 | Steve | Jones | MH, Meath | June | cruise |

**Un-normalized data**

**First normal form table**

**1NF (first normal form) rules:**

* Each table cell should contain a single value.
* Each record needs to be unique.

we create a new column (county) to transform this table into 1NF

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Customer ID** | **First Name** | **Last Name** | **County** | **Address** | **Date** | **Trip Type** |
| 159 | Eliud | Kipchoge | LK | Limerick | October | safari |
| 159 | Eliud | Kipchoge | LK | Limerick | October | cultural trip |
| 159 | Eliud | Kipchoge | LK | Limerick | November | cultural trip |
| 182 | Keith | Fallon | CE | Clare | October | safari |
| 199 | Molly | Huddle | DN | Dublin | July | ski\_break |
| 234 | Laura | Muir | LK | Limerick | January | round\_the\_world |
| 234 | Laura | Muir | LK | Limerick | November | cultural\_trip |
| 536 | Steve | Jones | MH | Meath | June | cruise |

**Table 1: Customer table**

**Second normal form(2NF)**

Here I divided our 1NF table into two tables viz customer table and Trip table. The customer table contains the customer’s information. The trip table contains information on the type of trip embarked on by the customers and which month of the year it was embarked on. I also introduced a new column called Trip\_id which uniquely identified the different trip types embarked on by various customers.

**Table 2:**

**Customer table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Customer\_ID** | **First Name** | **Last Name** | **County** | **Address** |
| 159 | Eliud | Kipchoge | LK | Limerick |
| 182 | Keith | Fallon | CE | Clare |
| 199 | Molly | Huddle | DN | Dublin |
| 234 | Laura | Muir | LK | Limerick |
| 536 | Steve | Jones | MH | Meath |

**Table:3 Trip table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Trip\_ID** | **Trip\_type** | **Date** | **Customer\_ID** |
| 50 | safari | October | 159 |
| 55 | cultural trip | October | 159 |
| 60 | cultural trip | November | 159 |
| 65 | safari | October | 182 |
| 70 | ski break | July | 199 |
| 75 | round\_the\_world | January | 234 |
| 80 | cultural trip | November | 234 |
| 85 | cruise | June | 536 |

**Third Normal form(3NF)**

Here, I created a monthly subscription column for each customer. The reason was to account for the monthly payments made by each customer towards the various trips they intend to embark on.

Secondly, I made a table for trip details that included the various trip types and trip IDs. The booking details table references the booking information for each trip embarked on by each customer.

**Table 4**

**Customer table Monthly Subscription**

|  |  |  |  |
| --- | --- | --- | --- |
| **Customer\_ID** | **First Name** | **Last Name** | **Monthly subscription id** |
| 159 | Eliud | Kipchoge | 2221 |
| 182 | Keith | Fallon | 1223 |
| 199 | Molly | Huddle | 3223 |
| 234 | Laura | Muir | 2225 |
| 536 | Steve | Jones | 2207 |

|  |  |  |
| --- | --- | --- |
| **Monthly Subscription Id** | **Address** | **County** |
| 2221 | Limerick | LK |
| 1223 | Clare | CE |
| 3223 | Dublin | DN |
| 2225 | Limerick | LK |
| 2207 | Meath | MH |

**Table 6.** Booking details

|  |  |  |  |
| --- | --- | --- | --- |
| **Booking\_number\_index** | **Trip ID** | **Customer**  **ID** | **Date** |
| K002726 | 50 | 159 | October |
| K378349 | 55 | 159 | October |
| K285674 | 60 | 159 | November |
| K002398 | 65 | 182 | October |
| K987542 | 70 | 199 | July |
| K550021 | 75 | 234 | January |
| K271378 | 80 | 234 | November |
| K112233 | 85 | 536 | June |

**Table 5**

**Trip-details**

|  |  |
| --- | --- |
| **Trip ID** | **Trip type** |
| 50 | safari |
| 55 | cultural trip |
| 60 | cultural trip |
| 65 | safari |
| 70 | Ski break |
| 75 | Round the world |
| 80 | Cultural trip |
| 85 | cruise |

**Physical data model(schema) for the travel agency**

