Normalization to 3NF

Orders

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| order\_id | server\_id | customer\_id | barista\_id | completed | received | total\_bill |
| 1 | 3 | 1 | 3 | True | True | 10 |
| 2 | 2 | 2 | 3 | True | False | 20 |
| 3 | 1 | 1 | 2 | False | false | 30 |

1. It’s in 1NF, because all columns are in atomic form
2. It’s doesn’t satisfy 2NF, because attributes completed, received and total\_bill don’t depend on entire primary key. They only depend on order\_id attribute. So, we divide it into to tables.

Orders

|  |  |  |  |
| --- | --- | --- | --- |
| order\_id | server\_id | customer\_id | barista\_id |
| 1 | 3 | 1 | 3 |
| 2 | 2 | 2 | 3 |
| 3 | 1 | 1 | 2 |

Order\_Details

|  |  |  |  |
| --- | --- | --- | --- |
| order\_id | completed | received | total\_bill |
| 1 | True | True | 10 |
| 2 | True | False | 20 |
| 3 | False | false | 30 |

1. It’s in 3NF, because there is no transitive dependency among non-key attributes.

Customers

|  |  |
| --- | --- |
| customer\_id | name |
| 1 | Asset |
| 2 | Ansar |

Customers table in

1. 1NF because all columns are in atomic form
2. 2NF because all attributes depend on entire key
3. 3NF because there is no transitive dependency among non-key attributes.

Bill

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| bill\_id | order\_id | description | date | price |
| 1 | 1 | Americano | 17.04.2023 | 10 |
| 2 | 2 | Latte | 18.04.2023 | 20 |

Bill table in

1. 1NF because all columns are in atomic form
2. 2NF because all attributes depend on entire key
3. 3NF because there is no transitive dependency among non-key attributes.

Server

|  |  |  |  |
| --- | --- | --- | --- |
| server\_id | name | phone\_num | address |
| 1 | Nurdaulet | 8 771 562 32 45 | Saina 6 |
| 2 | Dias | 8 705 958 65 78 | Tole bi 56 |
| 3 | Abylai | 8 747 569 87 45 | Alfarabi 87 |

Server table in

1. 1NF because all columns are in atomic form
2. 2NF because all attributes depend on entire key
3. 3NF because there is no transitive dependency among non-key attributes.

Coffee\_shop

|  |  |  |  |
| --- | --- | --- | --- |
| shop\_id | name | phone\_num | address |
| 1 | Tea Dot | 8 771 741 85 45 | Saina 6 |
| 2 | Coffee Bum | 8 705 958 61 28 | Tole bi 56 |
| 3 | Wake cup | 8 747 569 87 95 | Alfarabi 87 |

Coffee\_shop table in

1. 1NF because all columns are in atomic form
2. 2NF because all attributes depend on entire key
3. 3NF because there is no transitive dependency among non-key attributes.

Managers

|  |  |  |  |
| --- | --- | --- | --- |
| manager\_id | name | phone\_num | address |
| 1 | Taukekhan | 8771 484 32 45 | Saina 6 |
| 2 | Yerbol | 8 705 122 65 78 | Tole bi 56 |
| 3 | Bissenbay | 8747 214 87 45 | Alfarabi 87 |

Managers table in

1. 1NF because all columns are in atomic form
2. 2NF because all attributes depend on entire key
3. 3NF because there is no transitive dependency among non-key attributes.

Barista

|  |  |  |  |
| --- | --- | --- | --- |
| barista\_id | name | phone\_num | address |
| 1 | Sherkhan | 8771 562 12 45 | Saina 6 |
| 2 | Aman | 8 705 958 12 78 | Tole bi 56 |
| 3 | Ernar | 8747 569 32 45 | Alfarabi 87 |

Barista table in

1. 1NF because all columns are in atomic form
2. 2NF because all attributes depend on entire key
3. 3NF because there is no transitive dependency among non-key attributes.

Items

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| item\_id | name | description | cost | quantity |
| 1 | Americano | Tasty hot | 10 | 80 |
| 2 | Latte | Creamy hot | 15 | 90 |
| 3 | Morocco tea | uf kefteme | 11 | 210 |

Items table in

1. 1NF because all columns are in atomic form
2. 2NF because all attributes depend on entire key
3. 3NF because there is no transitive dependency among non-key attributes.