1st normal form.

Source.

|  |  |
| --- | --- |
| **Firm** | **Model** |
| BMW | M5, X5M, M1 |
| Nissan | GT-R |

Cast to 1st normal form.

|  |  |
| --- | --- |
| **Firm** | **Model** |
| BMW | M5 |
| BMW | X5M |
| BMW | M1 |
| Nissan | GT-R |

2nd normal form.

Source.

|  |  |  |  |
| --- | --- | --- | --- |
| **Firm** | **Model** | **Price** | **Discount** |
| BMW | M5 | 5 500 000 | 5% |
| BMW | X5M | 6 000 000 | 5% |
| BMW | M1 | 2 500 000 | 5% |
| Nissan | GT-R | 5 000 000 | 10% |

Cast to 2nd normal form.

|  |  |  |
| --- | --- | --- |
| **Firm** | **Model** | **Price** |
| BMW | M5 | 5 500 000 |
| BMW | X5M | 6 000 000 |
| BMW | M1 | 2 500 000 |
| Nissan | GT-R | 5 000 000 |

|  |  |
| --- | --- |
| **Firm** | **Discount** |
| BMW | 5% |
| Nissan | 10% |

3rd normal form.

Source.

|  |  |  |
| --- | --- | --- |
| **Firm** | **Diller** | **Phone** |
| BMW | Rial-AUTO | 87-33-98 |
| Nissan | Next-AUTO | 94-54-12 |
| Audi | Rial-AUTO | 87-33-98 |

Cast to 3rd normal form.

|  |  |
| --- | --- |
| **Diller** | **Phone** |
| Rial-AUTO | 87-33-98 |
| Next-AUTO | 94-54-12 |

|  |  |
| --- | --- |
| **Firm** | **Diller** |
| BMW | Rial-AUTO |
| Nissan | Next-AUTO |
| Audi | Rial-AUTO |

Boyce–Codd normal form.

Source.

|  |  |  |  |
| --- | --- | --- | --- |
| **Parking** | **Start time** | **End time** | **Rate** |
| 1 | 9:30 | 10:30 | Safe |
| 1 | 11:00 | 12:00 | Safe |
| 1 | 14:00 | 15:30 | Standard |
| 2 | 10:00 | 12:00 | Premium-B |
| 2 | 12:00 | 14:00 | Premium-B |
| 2 | 15:00 | 18:00 | Premium-A |

Rate has unique name, depended from parking and availability of benefits:

* ‘Safe’: parking 1 to beneficiaries
* ‘Standard’: parking 1 to non-beneficiaries
* ‘Premium-A’: parking 2 to beneficiaries
* ‘Premium-B’: parking 2 to non-beneficiaries

Cast to Boyce–Codd normal form.

Rates.

|  |  |  |
| --- | --- | --- |
| **Rate** | **Parking** | **Benefit** |
| Safe | 1 | YES |
| Standard | 1 | NO |
| Premium-A | 2 | YES |
| Premium-A | 2 | NO |

Booking.

|  |  |  |
| --- | --- | --- |
| **Rate** | **Start time** | **End time** |
| Safe | 9:30 | 10:30 |
| Safe | 11:00 | 12:00 |
| Standard | 14:00 | 15:30 |
| Premium-B | 10:00 | 12:00 |
| Premium-B | 12:00 | 14:00 |
| Premium-A | 15:00 | 18:00 |

4th normal form

Source.

|  |  |  |
| --- | --- | --- |
| **Restaurant** | **Pizza** | **Neighbrohood** |

Cast to 4th normal form

|  |  |
| --- | --- |
| **Restaurant** | **Pizza** |

|  |  |
| --- | --- |
| **Restaurant** | **Neighbrohood** |

5th normal form

Source.

|  |  |  |
| --- | --- | --- |
| **Salesman** | **Firm** | **Product** |
| Jack Schneider | Acme | Vacuum Cleaner |
| Jack Schneider | Acme | Breadbox |
| Mary Jones | Robusto | Pruning Shears |
| Mary Jones | Robusto | Vacuum Cleaner |
| Mary Jones | Robusto | Breadbox |
| Mary Jones | Robusto | Umbrella Stand |
| Louis Ferguson | Robusto | Vacuum Cleaner |
| Louis Ferguson | Robusto | Telescope |
| Louis Ferguson | Acme | Vacuum Cleaner |
| Louis Ferguson | Acme | Lava Lamp |
| Louis Ferguson | Nimbus | Tie Rack |

Cast to 5th normal form

Products by Salesman

|  |  |
| --- | --- |
| **Salesman** | **Product** |
| Jack Schneider | Vacuum Cleaner |
| Jack Schneider | Breadbox |
| Mary Jones | Pruning Shears |
| Mary Jones | Vacuum Cleaner |
| Mary Jones | Breadbox |
| Mary Jones | Umbrella Stand |
| Louis Ferguson | Telescope |
| Louis Ferguson | Vacuum Cleaner |
| Louis Ferguson | Lava Lamp |
| Louis Ferguson | Tie Rack |

Firms by Salesman

|  |  |
| --- | --- |
| **Salesman** | **Firm** |
| Jack Schneider | Acme |
| Mary Jones | Robusto |
| Louis Ferguson | Robusto |
| Louis Ferguson | Acme |
| Louis Ferguson | Nimbus |

Products by Firms

|  |  |
| --- | --- |
| **Firm** | **Product** |
| Acme | Vacuum Cleaner |
| Acme | Breadbox |
| Acme | Lava Lamp |
| Robusto | Pruning Shears |
| Robusto | Vacuum Cleaner |
| Robusto | Breadbox |
| Robusto | Umbrella Stand |
| Robusto | Telescope |
| Nimbus | Tie Rack |