A1.

Data redundancy means that there are duplicating data in the database table which is useless because there are other data that means that same thing too.

A2.

The longer service year, the higher salary.

The longer service year, the higher role you have.

A3.

Name have the same meaning with EID

Technical lead must be serviced at least 7 years & Manager must have serviced at least 10 years.

A4.

|  |  |  |
| --- | --- | --- |
| EID | RID | SID |
| D01 | P | S01 |
| D02 | P | S01 |
| D03 | P | S01 |
| D04 | P | S01 |
| D05 | P | S02 |
| D06 | P | S02 |
| D07 | TL | S03 |
| D08 | TL | S03 |
| D09 | M | S04 |
| D10 | M | S04 |

|  |  |  |
| --- | --- | --- |
| EMPLOYEE INFO | | |
| EID | **NAME** | **serviceYear** |
| D01 | Jeff | 3 |
| D02 | Lisa | 3 |
| D03 | Newton | 3 |
| D04 | Nash | 3 |
| D05 | Jordan | 5 |
| D06 | Mary | 5 |
| D07 | Geary | 7 |
| D08 | Monash | 7 |
| D09 | Kerry | 10 |
| D10 | Johnny | 10 |

|  |  |
| --- | --- |
| JOB ROLE | |
| RID | **ROLE** |
| P | Programmer |
| TL | Technical Lead |
| M | Manager |

|  |  |
| --- | --- |
| SALARY INFO | |
| SID | **SALARY** |
| S01 | 15000 |
| S02 | 20000 |
| S03 | 30000 |
| S04 | 40000 |

B1.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| patientID | firstName | lastName | dateOfBirth | streetName | City | postCode | GPID | GPName | dateOfPrescription | timeOfPrescription | medicationCode | medicationName |
| BMC-M-6651 | Paul | Mitchell | 21/03/1979 | 97 Main Street | Ballysomewhere | BT98 7ZY | 27 | Dr. Julie Millar | 12/01/2003 | 08:00 | AH02 | Antihistamine Tablets |
| 14/02/2003 | 10:00 | AH02 | Antihistamine Tablets |
| 14/02/2003 | 10:00 | FJ01 | Flu Jabs |
| 21/02/2003 | 14:00 | PK14 | Codeine Tablets (Soluble) |

B2.

1NF

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| patientID | firstName | lastName | dateOfBirth | streetName | | City | | | postCode | GPID | | GPName | dateOfPrescription | timeOfPrescription | medicationCode | medicationName |
| BMC-M-6651 | Paul | Mitchell | 21/03/1979 | | 97 Main Street | | Ballysomewhere | BT98 7ZY | | | 27 | Dr. Julie Millar | 12/01/2003 | 08:00 | AH02 | Antihistamine Tablets |
| BMC-M-6651 | Paul | Mitchell | 21/03/1979 | | 97 Main Street | | Ballysomewhere | BT98 7ZY | | | 27 | Dr. Julie Millar | 14/02/2003 | 10:00 | AH02 | Antihistamine Tablets |
| BMC-M-6651 | Paul | Mitchell | 21/03/1979 | | 97 Main Street | | Ballysomewhere | BT98 7ZY | | | 27 | Dr. Julie Millar | 14/02/2003 | 10:00 | FJ01 | Flu Jabs |
| BMC-M-6651 | Paul | Mitchell | 21/03/1979 | | 97 Main Street | | Ballysomewhere | BT98 7ZY | | | 27 | Dr. Julie Millar | 21/02/2003 | 14:00 | PK14 | Codeine Tablets (Soluble) |

2NF

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Patient | | | | | | |
| patientID | **firstName** | **lastName** | **dateOfBirth** | **streetName** | **City** | **postCode** |
| BMC-M-6651 | Paul | Mitchell | 21/03/1979 | 97 Main Street | Ballysomewhere | BT98 7ZY |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| patientID | GPID | GPName | dateOfPrescription | timeOfPrescription | medicationCode | medicationName |
| BMC-M-6651 | 27 | Dr. Julie Millar | 12/01/2003 | 08:00 | AH02 | Antihistamine Tablets |
| BMC-M-6651 | 27 | Dr. Julie Millar | 14/02/2003 | 10:00 | AH02 | Antihistamine Tablets |
| BMC-M-6651 | 27 | Dr. Julie Millar | 14/02/2003 | 10:00 | FJ01 | Flu Jabs |
| BMC-M-6651 | 27 | Dr. Julie Millar | 21/02/2003 | 14:00 | PK14 | Codeine Tablets (Soluble) |

3NF

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Patient | | | | | | |
| patientID | **firstName** | **lastName** | **dateOfBirth** | **streetName** | **City** | **postCode** |
| BMC-M-6651 | Paul | Mitchell | 21/03/1979 | 97 Main Street | Ballysomewhere | BT98 7ZY |

|  |  |
| --- | --- |
| GP | |
| GID | **GName** |
| 27 | Dr. Julie Millar |

|  |  |
| --- | --- |
| Medication | |
| MID | **MName** |
| AH02 | Antihistamine Tablets |
| FJ01 | Flu Jabs |
| PK14 | Codeine Tablets (Soluble) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Prescription | | | | |
| patientID | **GID** | **MID** | **dateOfPrescription** | **timeOfPrescription** |
| BMC-M-6651 | 27 | AH02 | 12/01/2003 | 08:00 |
| BMC-M-6651 | 27 | AH02 | 14/02/2003 | 10:00 |
| BMC-M-6651 | 27 | FJ01 | 14/02/2003 | 10:00 |
| BMC-M-6651 | 27 | PK14 | 21/02/2003 | 14:00 |

B3.

Patient(patientID, firstName, lastName, dateOfBirth, streetName, City, postCode)

GP(GID, GName)

Medication(MID,MName)

Prescription(patientID, GID, MID, dateOfPrescription, timeofPrescription)

C1.

Computer (MachineNo, MachineOwner, MachineType, MachineMaker, SoftwareLicence-No, SoftwareTitle, SoftwareSize, SoftwareCost)

C2.

3NF

|  |  |  |  |
| --- | --- | --- | --- |
| Machine | | | |
| MID | MachineOwner | MachineType | MachineMaker |
| M01 | Grayson | 486 | Dan |
| M03 | White | 286 | Opus |
| M05 | Black | 486 | IBM |
| M06 | O’ Driscoll | Pentium | Gateway |

|  |  |  |  |
| --- | --- | --- | --- |
| Software | | | |
| SID | Title | Size(k) | Cost |
| S134 | MS Access | 150 | 50 |
| S165 | Paradox | 250 | 60 |
| S187 | MS Office | 7000 | 250 |
| S193 | Lotus 123 | 200 | 150 |
| S213 | MS Backup | 25 | 19.99 |
| S234 | Lotus Notes | 340 | 450 |

|  |  |
| --- | --- |
| Computer | |
| MID | SID |
| M01 | S165 |
| M01 | S187 |
| M01 | S193 |
| M03 | S134 |
| M03 | S193 |
| M05 | S187 |
| M06 | S234 |
| M06 | S213 |

C3. Computer(MID, SID)

Machine(MID, MachineOwner, MachineType, MachineMaker)

Software(SID, Title, Size(k), Cost)