

Course work

“Question 3”

Student: Pazyl Y. S.

CS username: 26244

Group: IS-1808K

**Question 3 [30 marks].**

1. Convert the following table about registration in a volunteering organisation into first, second and third normal forms; identify functional dependencies; highlight primary keys for all relations you create.

**Answer:**

Is not primary key.

* RegNumber 🡪 { RegDate }
* VolOrgID 🡪 { VolOrgName }
* DisabledNum 🡪 { DisabledName }

**First Normal Form(1NF):**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **RegNumber** | **RegDate** | **VolOrgID** | **VolOrgName** | **DisabledNum** | **DisabledName** |
| R001 | 3/4/2020 | S12 | Auezov | D104 | Sasha |
| R001 | 3/4/2020 | S12 | Auezov | D105 | Karim |
| R002 | 1/6/2019 | S23 | Almali | D106 | Alma |
| R002 | 1/6/2019 | S45 | Bostandik | D106 | Alma |
| R003 | 9/9/2019 | S12 | Auezov | D106 | Alma |
| R004 | 10/11/2019 | S23 | Almali | D105 | Karim |
| R004 | 10/11/2019 | S12 | Auezov | D106 | Alma |

**Second Normal Form (2NF):**

Primary Key: { DisabledNum }

|  |  |
| --- | --- |
| **DisabledNum** | **DisabledName** |
| D104 | Sasha |
| D105 | Karim |
| D106 | Alma |

Primary Key: { VolOrgID }

|  |  |
| --- | --- |
| **VolOrgID** | **VolOrgName** |
| S12 | Auezov |
| S23 | Almali |
| S45 | Bostandik |

Primary Key: { RegNumber**,** VolOrgID, DisabledNum }

|  |  |  |  |
| --- | --- | --- | --- |
| **RegNumber** | **RegDate** | **VolOrgID** | **DisabledNum** |
| R001 | 3/4/2020 | S12 | D104 |
| R001 | 3/4/2020 | S12 | D105 |
| R002 | 1/6/2019 | S23 | D106 |
| R002 | 1/6/2019 | S45 | D106 |
| R003 | 9/9/2019 | S12 | D106 |
| R004 | 10/11/2019 | S23 | D105 |
| R004 | 10/11/2019 | S12 | D106 |

**Third Normal Form (3NF):**

Primary Key: { DisabledNum }

|  |  |
| --- | --- |
| **DisabledNum** | **DisabledName** |
| D104 | Sasha |
| D105 | Karim |
| D106 | Alma |

Primary Key: { VolOrgID }

|  |  |
| --- | --- |
| **VolOrgID** | **VolOrgName** |
| S12 | Auezov |
| S23 | Almali |
| S45 | Bostandik |

Primary Key: { RegNumber }

|  |  |
| --- | --- |
| **RegNumber** | **RegDate** |
| R001 | 3/4/2020 |
| R002 | 1/6/2019 |
| R003 | 9/9/2019 |
| R004 | 10/11/2019 |

Primary Key: { RegID**,** VolOrgID, DisabledNum }

|  |  |  |
| --- | --- | --- |
| **RegNumber** | **VolOrgID** | **DisabledNum** |
| R001 | S12 | D104 |
| R001 | S12 | D105 |
| R002 | S23 | D106 |
| R002 | S45 | D106 |
| R003 | S12 | D106 |
| R004 | S23 | D105 |
| R004 | S12 | D106 |