Lab Work 02 Report: Creation Relation Data Model with Online CASE Tools.

|  |  |  |
| --- | --- | --- |
| **Student Name Surname** | **Student ID** | **Date** |
| Example Variant | EV-00 | 14.03.2021. |

1. Lab Assignment.

2.0. Select Your Individual Variant of the Assignment.

2.1. Register on DbDesigner.net Site.

2.2. Work with DbDesigner RDM Scheme.

2.3. Fill in a Data Dictionary.

2.4. Create Relation Data Model Scheme.

2.5. Share and Export DbDesigner RDM Scheme to sql.

2. Select Variant Nr.

|  |  |
| --- | --- |
| Instruction:The step by step formation of an individual variant of the assignment from the surname-name to the final number. | *Example:**a)* Li Yuriy there will be LIYU*b)* 12 09 25 21*c)*(12+09+25+21)mod10+1=67mod10+1=7+1=8.d) variant Nr.=8 (CHANGE to 0) |

3. Solution.

3.1. Filled Data Dictionary Table

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Var. Nr** | **Entity** | **Attribute Description** | **Attribute Name** | **PK, FK** | **Type** | **Size** | **Auto Incr.** | **Null** | **Unique** | **Default** | **Range** |
| **0** | Teachers | Teacher Nr | teacher\_id | PK | tinyint |  | Yes |  | Yes |  | <100 |
| Teacher Name Surname | teacher\_name |  | varchar | 20 |  |  |  |  |  |
| Teacher Phone | teacher\_phone |  | int |  |  | Yes | Yes |  | 8 dig |
| Students | Student Nr | student\_id | PK | smallint |  | Yes |  | Yes |  | <10000 |
| Name Surname | student\_name |  | varchar | 20 |  |  |  |  |  |
| Birthday | student\_birthday |  | date |  |  | Yes |  | Null |  |
| Address | student\_address |  | varchar | 40 |  | Yes |  | Null |  |
| Phone | student\_phone |  | int |  |  | Yes | Yes | Null | 8 dig |
| Passport | student\_passport |  | char | 15 |  | Yes | Yes | Null |  |
| Language | language |  | enum |  |  | Yes |  | English | EnglishRussianLatvian |
| Group Nr | group\_id | FK | tinyint |  |  |  |  |  |  |
| Contracts | Contract Id | contract\_id | PK | smallint |  | Yes |  | Yes |  | <10000 |
| Number | contract\_number |  | char | 20 |  |  | Yes |  |  |
| Date | contract\_date |  | date |  |  |  |  |  |  |
| Student Nr | student\_id | FK | smallint |  |  |  | Yes |  |  |
| Courses | Course Nr | course\_id | PK | smallint |  | Yes |  |  |  | <1000 |
| Duration | course\_duration |  | tinyint |  |  | Yes |  |  |  |
| Cost Sum | course\_cost |  | decimal | 6,2 |  | Yes |  |  |  |
| Groups | Group Nr | group\_id | PK | tinyint |  | Yes |  |  |  | <120 |
| Start Date | group\_start |  | date |  |  | Yes |  |  |  |
| Finish Date | group\_finish |  | date |  |  | Yes |  |  |  |
| Course Nr | course\_id | FK | smallint |  |  |  |  |  |  |
| CoursesTeachers |  | teacher\_id | PK,FK1 | tinyint |  |  |  | Yes |  |  |
|  | course\_id | PK,FK2 | smallint |  |  |  |  |  |

3.2. Completed RDM Scheme Image.



3.3. RDM Scheme Share Link.

<https://dbdesigner.page.link/5Mt8vxhHTQzm7cBT9> (mysql)

3.4. Create.sql Script.

CREATE TABLE `Contracts` (

 `contract\_id` smallint NOT NULL,

 `contract\_number` char(20) NOT NULL UNIQUE,

 `contract\_date` DATE NOT NULL,

 `student\_id` smallint NOT NULL UNIQUE,

 PRIMARY KEY (`contract\_id`)

);

CREATE TABLE `Teachers` (

 `teacher\_id` tinyint NOT NULL,

 `teacher\_name` varchar(20) NOT NULL,

 `teacher\_phone` int UNIQUE,

 PRIMARY KEY (`teacher\_id`)

);

CREATE TABLE `Courses` (

 `course\_id` smallint NOT NULL,

 `course\_duration` tinyint,

 `course\_cost` DECIMAL(6,2),

 PRIMARY KEY (`course\_id`)

);

CREATE TABLE `Students` (

 `student\_id` smallint NOT NULL,

 `student\_name` varchar(20) NOT NULL,

 `student\_birthday` DATE,

 `student\_adress` varchar(40),

 `student\_phone` int UNIQUE,

 `student\_passport` char(15) UNIQUE,

 ~~`language` enum DEFAULT 'English',\*/~~

 `language` enum('Russian','English','Latvian') DEAFULT 'English',

 `group\_id` tinyint NOT NULL,

 PRIMARY KEY (`student\_id`)

);

CREATE TABLE `Groups` (

 `group\_id` tinyint NOT NULL,

 `group\_start` DATE,

 `group\_finish` DATE,

 `course\_id` smallint NOT NULL,

 PRIMARY KEY (`group\_id`)

);

CREATE TABLE `CoursesTeachers` (

 `course\_id` smallint NOT NULL,

 `teacher\_id` tinyint NOT NULL,

 PRIMARY KEY (`course\_id`,`teacher\_id`)

);

ALTER TABLE `Contracts` ADD CONSTRAINT `Contract\_fk0` FOREIGN KEY (`student\_id`) REFERENCES `Students`(`student\_id`);

ALTER TABLE `Students` ADD CONSTRAINT `Student\_fk0` FOREIGN KEY (`group\_id`) REFERENCES `Groups`(`group\_id`);

ALTER TABLE `Groups` ADD CONSTRAINT `Group\_fk0` FOREIGN KEY (`course\_id`) REFERENCES `Courses`(`course\_id`);

ALTER TABLE `CoursesTeachers` ADD CONSTRAINT `CoursesTeachers\_fk0` FOREIGN KEY (`course\_id`) REFERENCES `Courses`(`course\_id`);

ALTER TABLE `CoursesTeachers` ADD CONSTRAINT `CoursesTeachers\_fk1` FOREIGN KEY (`teacher\_id`) REFERENCES `Teachers`(`teacher\_id`);