**--Database Requirement Document**

**School Database: School\_DB**

**Student table**

❖ Stud\_id: Student identification number. data type - Integer PRIMARY KEY,

❖ First\_Name: Student First Name. data type - Varchar(50) Constraint- Not Null,

❖ Last\_Name: Student last name data type - Varchar(50) Constraint- Not Null,

❖ DOB: Student Date of Birth data type - Date Constraint- Not Null,

❖ City: Student City data type- Varchar(50) Not Null,

❖ State: Student State of Residence data type - Varchar(50) Not Null,

❖ Instr\_id: Instructor ID data type - Varchar(6) Not Null,

❖ Phone: Student Phone Number data type - Varchar(10) Not Null,

❖ Gender: Student Gender data type - Varchar(1) Not Null);

**Instructor Table**

❖ Instr\_id: Instructor id data type - Varchar(6) PRIMARY KEY,

❖ First\_Name: Instructor First name data type - Varchar(50) Not Null,

❖ Last\_Name: Instructor Last name data type - Varchar(50) Not Null,

❖ Course \_id: Course id data type-Varchar(6) Not Null

**Course Table**

❖ Course\_Id: Course ID data type - Varchar(6) PRIMARY KEY,

❖ Course\_name: Course name data type - Varchar(20) Not Null,

❖ Course\_credit: Course Credit data type – Integer Not Null,

❖ Class\_size: Class Size data type – Integer Null

**Student leadership table**

❖ Stud\_exec\_id: Student Executive Id data type - Integer PRIMARY KEY,

❖ First\_Name: Student First name data type - Varchar(50) Not Null,

❖ Last\_Name: Student Last name data type - Varchar(50) Not Null,

❖ Stud\_id: student Id data type - Integer Not Null,

❖ Title: Student Title data type - Varchar(50) Not Null);

**Grade table**

❖ Letter\_Grade: letter grade data type - Varchar(1) PRIMARY KEY,

❖ Score: Score data type – **integer** Not Null

**Student\_Grade table**

❖ Stud\_id: Student id data type - Integer PRIMARY KEY,

❖ Letter\_Grade: letter Grade data type - Varchar(1) Not Null,

❖ Course\_id: Course ID data type - Varchar(6) Not Null,

❖ Instr\_id: Instructor’s ID data type - Varchar(6) Not Null

**RELATIONSHIP THROUGH FOREIGN KEYS**

**The direction of the arrows points to the table which must be altered to add the foreign key constraint.**

1. INSTRUCTOR TABLE relates to the COURSE TABLE through Course\_id

2. STUDENT TABLE relates to the INSTRUCTORS TABLE through Instr\_id

3. STUDENT LEADERHIP TABLE relates to the STUDENT table through Stud\_id

4. STUDENT GRADE TABLE relates to the GRADE TABLE through Letter\_Grade

5. STUDENT GRADE TABLE relates to the COURSE TABLE by Course Id

6. STUDENT GRADE TABLE relates INSTRUCTORS TABLE by Instr\_id

**School IT Department Day to Day work**

Before inserting our data into the tables, we realized that the score column should be a varchar(20) data type and not an integer. Write a script to change the integer data type to a varchar(20) data type.

**Grade table:**

(A, 90 - 100)

(B, 85 – 89)

(C, 80 - 84)

(D, 70 – 79)

(E, 60 - 69)

(F, 0 - 59)

**Course table:**

(Soc101, Fundamentals of Sociology, 3, 30)

(Mat102, Elementary Calculus, 3, 25)

(His304, Intermediate US History, 3, 15)

(Soc401, Advanced Sociology, 3, 40)

(Phi400, Advanced Philosophy, 3, 20)

**Instructor table:**

(In10001, Adeleye, Adewuyi, Mat102)

(In10002, Martin, Gold, Phi400)

(In10003, Fatiu, Ahmed, Soc101)

(In10004, Bharath, Mandadi, His304)

(In10005, Eric, Forson, Soc401)

**Student table:**

(1, Joseph, Ahene, 11/25/1980, Baltimore, Maryland, In10004, 4321053421, M)

(2, Precious, Owusu, 09/11/1982, Columbia, Maryland, In10003, 4321762243, F)

(3, Eni, Edo, 01/06/1979, Bronx, New York, In10002, 5011053421, F)

(4, Felix, Emeka, 12/01/1984, Newark, New Jersey, In10005, 7011762243, M)

(5, Mercy, Johnson, 04/20/1981, Wilmington, Delaware, In10005, 3011053421, F)

(6, Lilian, Asong, 08/19/1986, Owings Mills, Maryland, In10003, 4321761432, F)

(7, Prince, Williams, 06/04/1989, Silver Spring, Maryland, In10004, 4324432211, M)

(8, Grace, Bonnie, 05/13/1985, Knoxville, Tennessee, In10001, 8651762243, F)

(9, Leomie, Titus, 05/20/1986, Nashville, Tennessee, In10001, 8651053421, F)

(10, Magic, Johnson, 09/01/1978, Falls Church, Virginia, In10002, 7241762243, M)

(11, Henry, Edwards, 02/12/1983, Boston, Massachusetts, In10002, 9031053421, M)

(12, George, Phillips, 12/04/1980, San Francisco, California, In10001, 4631762241, M)

(13, Frederick, Benson, 01/01/1978, Wilmington, Delaware, In10003, 3011222411, M)

(14, Christy, Jones, 10/10/1991, Frederick, Maryland, In10005, 4321764444, F)

(15, Princess, Brown, 06/04/1989, Tulsa, Oklahoma, In10001, 4234432211, F)

(16, Hillary, Morgan, 11/13/1990, Tampa, Florida, In10001, 6411765432, F)

**Student Grade table:**

Students wrote an exam and the following are the grades. Insert these records into the Student Grade table.

|  |  |  |
| --- | --- | --- |
| Student ID | Grade | Course\_Id |
| 1 | A | Soc401 |
| 2 | B | Phi400 |
| 3 | B | His304 |
| 4 | A | Mat102 |
| 5 | C | Soc101 |
| 6 | D | His304 |
| 7 | B | Phi400 |
| 8 | A | Mat102 |
| 9 | C | Soc401 |
| 10 | A | Mat102 |
| 11 | D | His304 |
| 12 | F | Soc101 |
| 13 | A | Mat102 |
| 14 | A | His304 |
| 15 | B | Mat102 |
| 16 | C | His304 |

**Student Leadership table:**

The following students won student council election and the following are theirs executive id, student id and the position. Use this information with the appropriate students name to insert their records into the table. Student id

|  |  |  |
| --- | --- | --- |
| Student\_Id | Executive Id | Position |
| 7 | 100 | President |
| 2 | 101 | Vice President |
| 4 | 103 | Secretary |
| 3 | 104 | Treasurer |
| 11 | 105 | Advisor |
| 16 | 106 | Organizer |

1. A. You have been admitted to the school, please use your information populate your record in the student table.
2. B. A student with an id number 6 changed her last name from **Asong** to **Basong**; please update her record in the student’s table to reflect the name change.
3. C. We realized with time that the nature in which our student grade records comes to us every semester makes it difficult to identify the instructor id’s associated with the results. We decided in other to appropriately address such issue, we first have to drop the NOT NULL Constraint on the instr\_id column in the Student\_Grade table. Then insert the records of the semester results and then finally write an update script to populate the instr\_id’ s associated with the individual grades by looking it up in the Instructor table for those instructors that teaches the course.

Please use you insert script skills and your update script skills to accomplish this task for this new semester report below:

**First step is to remove all the existing records in the Student\_Grade table.**

**New semester report**

|  |  |  |
| --- | --- | --- |
| Student ID | Grade | Course ID |
| 1 | C | Mat102 |
| 2 | A | Soc401 |
| 3 | F | Mat102 |
| 4 | D | His304 |
| 5 | B | Soc101 |
| 6 | A | Mat102 |
| 7 | E | His304 |
| 8 | D | Mat102 |
| 9 | F | Soc401 |
| 10 | B | Mat102 |
| 11 | D | His304 |
| 12 | C | Soc101 |
| 13 | C | Mat102 |
| 14 | A | His304 |
| 15 | A | Mat102 |
| 16 | D | His304 |