***AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH (AIUB)***



# PROJECT: University Management System

## PREPARED FOR

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Course Name: Introduction to Database

***Prepared by***

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**Proposal of Our System:**

The name of the system is university management. It is created to help users to get required information from the created database tables.

**Introduction of Our System:**

Our university management system will allow for users to do the following:

* The system will allow faculty members to find out information about the courses they have been assigned and also information about the students they are going to teach.
* Allow students to see offered courses they can enroll in, being able to see the various sections open for a particular course and also the timing. They can also view faculty’s email address and phone number.
* Allow administration personnel to view faculty information such as salary, consulting time and the section(s) each faculty is currently assigned etc, all student information and table schema.
* Allow students to see faculty consultation times and the sections they are currently taking.
* Higher authority can also monitor extra-curricular activities of each student by seeing what clubs they have joined.

The system is intended for the following users:

* Students
* Faculty Members
* Administrative Staff

**De-normalized schema**

**STUDENT** (SID, AID, SNAME, AMOUNT, DOB, DID, DNAME, TOTAL\_CREDIT\_COMPLETED, CGPA, CID, PHONE\_NUMBER, EMAIL\_ADDRESS)

**FACULTY** (FID, FNAME, DID, DNAME, CONSULTING TIME, HIREDATE, SALARY, COURSEID, SEC, PHONE\_NUMBER, EMAIL\_ADDRESS)

**COURSE** (COURSEID, COURSENAME, SEC, TIME, ROOM)

**CLUB** (CID, CNAME, HEADNAME)

**REGISTRATION** (SID, COURSEID, SEC)

**Normalization:**

**0-NF (STUDENT TABLE)**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SID** | **AID** | SNAME | AMOUNT | DOB | DID | DNAME | TOTAL\_  CREDITS\_  COMPLETED | CGPA | CID | PHONE\_NUMBER | EMAIL\_ADDRESS |

Multivalued Attribute

This is 0-NF form. Because there are multivalued attributes. After removing multivalued attributes it will be in 1st normal form.

**1-NF (STUDENT TABLE)**

Dependency on entire primary key

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SID** | **AID** | SNAME | AMOUNT | DOB | DID | DNAME | TOTAL\_  CREDIT\_  COMPLETED | CGPA |

Dependency on part of a primary key

(MEMBER\_LIST Table) (EMAIL\_ADDRESS Table) (PHONE\_NUMBER Table)

|  |  |
| --- | --- |
| **SID** | **CID** |

|  |  |
| --- | --- |
| **SID** | **EMAIL\_ADDRESS** |

|  |  |
| --- | --- |
| **SID** | **PHONE\_NUMBER** |

This is in 1st normal form because it has partial dependencies. So, after removing the partial dependencies it will be in 2nd normal form.

2-NF (STUDENT TABLE)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SID** | SNAME | DOB | DID | DNAME | TOTAL\_  CREDIT\_  COMPLETED | CGPA |

|  |  |  |
| --- | --- | --- |
| **AID** | **SID** | AMOUNT |

This is in 2nd normal form because it has transitive dependencies. So, after removing transitive dependencies it will be in 3rd normal form.

(ACCOUNT Table)

**3-NF(STUDENT TABLE)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SID** | SNAME | **DID** | **TOTAL\_**  **CREDIT\_**  **COMPLETED** | **CGPA** |

(DEPARTMENT Table)

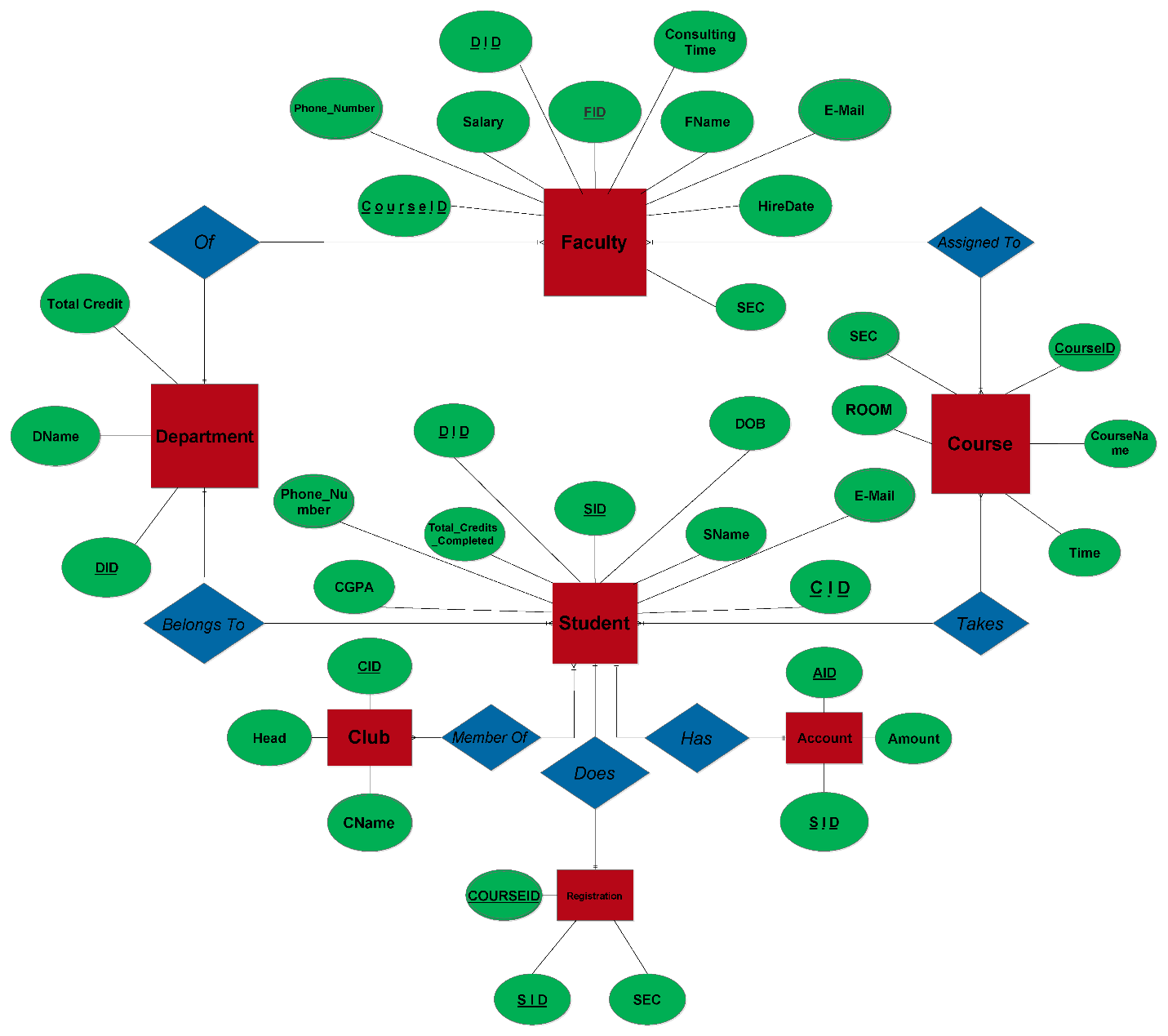
|  |  |
| --- | --- |
| **DID** | DNAME |

**ANOMALIES:**

Update Anomaly: If DID value is changed a lot of problems will be caused. DNAME will also have to be changed.

Deletion Anomaly: if a student decides to leave a club. In order to do that the value of CID column for that student will have to be deleted which in turn will also delete the row.

Insertion Anomaly: A freshman has not gotten an account yet so he does not have an AID. Since AID is part of a primary key so his other information also cannot be entered.



**Table Insertion and Query:**

|  |  |  |
| --- | --- | --- |
| **DID** | DNAME | TOTAL\_CREDIT |
| 10 | CS | 148 |
| 20 | EEE | 162 |
| 30 | ARCHITECTURE | 206 |
| 40 | BBA | 124 |

CREATE TABLE DEPARTMENT

(

DID NUMBER(2) PRIMARY KEY,

DNAME VARCHAR2(20),

TOTAL\_CREDIT NUMBER(3)

);

INSERT INTO DEPARTMENT

VALUES (10,'CS',148);

INSERT INTO DEPARTMENT

VALUES (20,'EEE',162);

INSERT INTO DEPARTMENT

VALUES (30,'ARCHITECTURE',206);

INSERT INTO DEPARTMENT

VALUES (40,'BBA',124);

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SID** | SNAME | DOB | **DID** | TOTAL\_CREDITS COMPLETED | CGPA |
| S15-23456-2 | FAHIM KHAN | 02-DEC-96 | 30 | 0 | 0.00 |
| S14-23985-1 | RAFIA TABASSUM | 08-JUL-94 | 40 | 65 | 3.92 |
| S14-26642-2 | RIFAT CHOWDHURY | 21-APR-95 | 10 | 53 | 3.74 |
| S14-26668-2 | SHAMS ADNAN | 10-JAN-95 | 10 | 53 | 3.53 |
| S14-25634-3 | AHOHA AFRIN | 1-JUN-95 | 10 | 42 | 3.12 |
| S13-27569-1 | MIM ISLAM | 14-MAR-94 | 20 | 92 | 3.66 |
| S13-26531-3 | SAKIB CHOWDHURY | 25-MAY-94 | 20 | 74 | 3.56 |
| S12-24653-1 | NADIM RAHMAN | 25-MAY-94 | 10 | 142 | 3.81 |
| S12-21985-2 | MEHDI HASAN | 16-AUG-93 | 30 | 138 | 3.35 |
| S12-25342-3 | RAJIB AHMED | 28-FEB-93 | 40 | 97 | 3.78 |
| S11-28654-3 | TAREK ISLAM | 03-NOV-92 | 40 | 115 | 3.26 |
| S13-26453-2 | ASHIK MAHMUD | 18-SEP-94 | 40 | 83 | 3.40 |

CREATE TABLE STUDENT

(

SID VARCHAR2(11) PRIMARY KEY,

SNAME VARCHAR2(30),

DOB DATE,

DID NUMBER(2) REFERENCES DEPARTMENT(DID),

TOTAL\_CREDITS\_COMPLETED NUMBER(3),

CGPA NUMBER(3,2) CHECK(CGPA<=4.00)

);

INSERT INTO STUDENT

VALUES ('S15-23456-2','FAHIM KHAN','02-DEC-96',30,0,0.00);

INSERT INTO STUDENT

VALUES ('S14-23985-1','RAFIA TABASSUM','08-JUL-94',40,65,3.92);

INSERT INTO STUDENT

VALUES ('S14-26642-2','RIFAT CHOWDHURY','21-APR-95',10,53,3.74);

INSERT INTO STUDENT

VALUES ('S14-26668-2','SHAMS ADNAN','10-JAN-95',10,53,3.53);

INSERT INTO STUDENT

VALUES ('S14-25634-3','AHONA AFRIN','16-JUN-95',10,42,3.12);

INSERT INTO STUDENT

VALUES ('S13-27569-1','MIM ISLAM','14-MAR-94',20,92,3.66);

INSERT INTO STUDENT

VALUES ('S13-26531-3','SAKIB CHOWDHURY','25-MAY-94',20,74,3.56);

INSERT INTO STUDENT

VALUES ('S12-24653-1','NADIM RAHMAN','24-OCT-93',10,142,3.81);

INSERT INTO STUDENT

VALUES ('S12-21985-2','MEHDI HASAN','16-AUG-93',30,138,3.35);

INSERT INTO STUDENT

VALUES ('S12-25342-3','RAJIB AHMED','28-FEB-93',40,97,3.78);

INSERT INTO STUDENT

VALUES ('S11-28654-3','TAREK ISLAM','03-NOV-92',40,115,3.26);

INSERT INTO STUDENT

VALUES ('S13-26453-2','ASHIK MAHMUD','18-SEP-94',40,83,3.40);

|  |  |  |
| --- | --- | --- |
| **CID** | CNAME | HEAD\_NAME |
| 11 | COMPUTER CLUB | NADIM RAHMAN |
| 22 | PHOTOGRAPHY CLUB | MEHDI HASAN |
| 33 | FILM CLUB | RAJIB AHMED |
| 44 | DEBATE CLUB | TAREK MAHMUD |
| 55 | SHOMOY CLUB | ASHIK MAHMUD |
| 66 | ROBOTICS CLUB | SAKIB CHOWDHURY |

CREATE TABLE CLUB

(

CID NUMBER(2) PRIMARY KEY,

CNAME VARCHAR2(20),

HEAD\_NAME VARCHAR2(30)

);

INSERT INTO CLUB

VALUES (11,'COMPUTER CLUB','NADIM RAHMAN');

INSERT INTO CLUB

VALUES (22,'PHOTOGRAPHY CLUB','MEHDI HASAN');

INSERT INTO CLUB

VALUES (33,'FILM CLUB','RAJIB AHMED');

INSERT INTO CLUB

VALUES (44,'DEBATE CLUB','TAREK ISLAM');

INSERT INTO CLUB

VALUES (55,'SHOMOY CLUB','ASHIK MAHMUD');

INSERT INTO CLUB

VALUES (66,'ROBOTICS CLUB','SAKIB CHOWDHURY');

|  |  |
| --- | --- |
| **SID** | **CID** |
| S14-23985-1 | 33 |
| S14-23985-1 | 44 |
| S14-26642-2 | 11 |
| S14-26642-2 | 11 |
| S14-26668-2 | 22 |
| S14-25634-3 | 11 |
| S14-25634-3 | 55 |
| S13-27569-1 | 22 |
| S13-26531-3 | 22 |
| S12-24653-1 | 11 |
| S12-24653-1 | 55 |
| S12-21985-2 | 22 |
| S12-25342-3 | 33 |
| S11-28654-3 | 44 |
| S13-26453-2 | 55 |

CREATE TABLE MEMBER\_LIST

(

SID VARCHAR2(11) REFERENCES STUDENT(SID),

CID NUMBER(2) REFERENCES CLUB(CID),

CONSTRAINT PK\_M PRIMARY KEY (SID,CID)

);

INSERT INTO MEMBER\_LIST

VALUES('S14-23985-1',33);

INSERT INTO MEMBER\_LIST

VALUES('S14-23985-1',44);

INSERT INTO MEMBER\_LIST

VALUES('S14-26642-2',11);

INSERT INTO MEMBER\_LIST

VALUES('S14-26668-2',11);

INSERT INTO MEMBER\_LIST

VALUES('S14-26668-2',22);

INSERT INTO MEMBER\_LIST

VALUES('S14-25634-3',11);

INSERT INTO MEMBER\_LIST

VALUES('S14-25634-3',55);

INSERT INTO MEMBER\_LIST

VALUES('S13-27569-1',22);

INSERT INTO MEMBER\_LIST

VALUES('S13-26531-3',22);

INSERT INTO MEMBER\_LIST

VALUES('S12-24653-1',11);

INSERT INTO MEMBER\_LIST

VALUES('S12-24653-1',55);

INSERT INTO MEMBER\_LIST

VALUES('S12-21985-2',22);

INSERT INTO MEMBER\_LIST

VALUES('S12-25342-3',33);

INSERT INTO MEMBER\_LIST

VALUES('S11-28654-3',44);

INSERT INTO MEMBER\_LIST

VALUES('S13-26453-2',55);

|  |  |  |
| --- | --- | --- |
| **AID** | SID | AMOUNT |
| A-23456 | S15-23456-2 | 101500 |
| A-23985 | S14-23985-1 | 82500 |
| A-26642 | S14-26642-2 | 87500 |
| A-26668 | S14-26668-2 | 76400 |
| A-25634 | S14-25634-3 | 57800 |
| A-27569 | S13-27569-1 | 94600 |
| A-26531 | S13-26531-3 | 67100 |
| A-24653 | S12-24653-1 | 54500 |
| A-21985 | S12-21985-2 | 78900 |
| A-25342 | S12-25342-3 | 34200 |
| A-28654 | S11-28654-3 | 64500 |
| A-26453 | S13-26453-2 | 74200 |

CREATE TABLE ACCOUNT

(

AID VARCHAR2(7) PRIMARY KEY,

SID VARCHAR2(11) REFERENCES STUDENT(SID),

AMOUNT NUMBER (7));

INSERT INTO ACCOUNT

VALUES ('A-23456','S15-23456-2',101500);

INSERT INTO ACCOUNT

VALUES ('A-23985','S14-23985-1',82500);

INSERT INTO ACCOUNT

VALUES ('A-26642','S14-26642-2',87500);

INSERT INTO ACCOUNT

VALUES ('A-26668','S14-26668-2',76400);

INSERT INTO ACCOUNT

VALUES ('A-25634','S14-25634-3',57800);

INSERT INTO ACCOUNT

VALUES ('A-27569','S13-27569-1',94600);

INSERT INTO ACCOUNT

VALUES ('A-26531','S13-26531-3',67100);

INSERT INTO ACCOUNT

VALUES ('A-24653','S12-24653-1',54500);

INSERT INTO ACCOUNT

VALUES ('A-21985','S12-21985-2',78900);

INSERT INTO ACCOUNT

VALUES ('A-25342','S12-25342-3',34200);

INSERT INTO ACCOUNT

VALUES ('A-28654','S11-28654-3',64500);

INSERT INTO ACCOUNT

VALUES ('A-26453','S13-26453-2',74200);

|  |  |
| --- | --- |
| **COURSEID** | COURSENAME |
| C-1006 | DATA STRUCTURE |
| C-1009 | INTRODUCTION TO DATABASE |
| C-1012 | ALGORITHM |
| C-1015 | OPERATING SYSTEM |
| C-2003 | ELECTRICAL CIRCUITS-1(DC) |
| C-2009 | MACHINE |
| C-2015 | ELECTRONIC DEVICE |
| C-3005 | BUILDING AND FINISH MATERIALS |
| C-3012 | CONSTRUCTION METHODS |
| C-3022 | BASIC PLANNING |
| C-4005 | PRINCIPLES OF ACCOUNTING |
| C-4012 | STATISTICS AND PROBABILITY |
| C-4017 | MICRO ECONOMICS |

CREATE TABLE COURSE

(

COURSEID VARCHAR2(6) PRIMARY KEY,

COURSENAME VARCHAR2(100)

);

INSERT INTO COURSE

VALUES ('C-1006','DATA STRUCTURE');

INSERT INTO COURSE

VALUES ('C-1009','INTRODUCTION TO DATABASE');

INSERT INTO COURSE

VALUES ( 'C-1012','ALGORITHM');

INSERT INTO COURSE

VALUES ('C-1015','OPERATING SYSTEM');

INSERT INTO COURSE

VALUES ('C-2003','ELECTRICAL CIRCUIT-1(DC)');

INSERT INTO COURSE

VALUES ('C-2009','MACHINE');

INSERT INTO COURSE

VALUES('C-2015','ELECTRONIC DEVICE');

INSERT INTO COURSE

VALUES ('C-3005','BUILDING AND FINISH MATERIALS');

INSERT INTO COURSE

VALUES ('C-3012','CONSTRUCTION METHODS');

INSERT INTO COURSE

VALUES ('C-3022','BASIC PLANNING');

INSERT INTO COURSE

VALUES ('C-4005','PRINCIPALS OF ACCOUNTING');

INSERT INTO COURSE

VALUES ('C-4012','STATISTICS AND PROBABILITY');

INSERT INTO COURSE

VALUES ('C-4017','MICRO ECONOMICS');

|  |  |  |  |
| --- | --- | --- | --- |
| **COURSEID** | **SEC** | TIME | ROOM |
| C-1006 | A | SUN/TUE: 10AM-2PM | 422 |
| C-1006 | B | MON/WED: 2PM-4PM | 423 |
| C-1009 | C | MON/WED: 2PM-4PM | 432 |
| C-1009 | D | SUN/TUE: 10AM-2PM | 433 |
| C-1012 | E | SUN/TUE: 2PM-4PM | 431 |
| C-1012 | F | MON/WED: 8AM-10M | 421 |
| C-1015 | A | SUN/TUE: 8AM-10AM | 422 |
| C-1015 | B | MON/WED: 4PM-6PM | 432 |
| C-2003 | E | SUN/MON: 8AM-9:30AM | 243 |
| C-2009 | A | MON/WED: 9:30AM-11AM | 242 |
| C-2015 | B | SUN/MON: 11AM-12:30PM | 234 |
| C-3005 | D | SUN/MON: 11AM-12:30PM | 7181 |
| C-3012 | A | SUN/MON: 11AM-12:30PM | 7192 |
| C-3022 | A | SUN/MON: 2PM-3:30PM | 7202 |
| C-4005 | B | MON/WED: 9:30AM-11AM | 123 |
| C-4012 | C | SUN/MON: 11AM-12:30PM | 514 |
| C-4017 | C | SUN/MON: 2PM-3:30PM | 522 |

CREATE TABLE TIME

(

COURSEID VARCHAR2(6) REFERENCES COURSE(COURSEID),

SEC VARCHAR2(1) NOT NULL,

TIME VARCHAR2(50) NOT NULL,

ROOM NUMBER(4) NOT NULL,

CONSTRAINT PK\_K PRIMARY KEY (COURSEID,SEC)

);

INSERT INTO TIME

VALUES ('C-1006','A','SUN/TUE: 10AM-2PM',422);

INSERT INTO TIME

VALUES ('C-1006','B','MON/WED: 2PM-4PM',423);

INSERT INTO TIME

VALUES ('C-1009','C','MON/WED: 2PM-4PM',432);

INSERT INTO TIME

VALUES ('C-1009','D','SUN/TUE: 10AM-2PM',433);

INSERT INTO TIME

VALUES ('C-1012','E','SUN/TUE: 2PM-4PM',431);

INSERT INTO TIME

VALUES ('C-1012','F','MON/WED: 8AM-10M',421);

INSERT INTO TIME

VALUES ('C-1015','A','SUN/TUE: 8AM-10AM',422);

INSERT INTO TIME

VALUES('C-1015','B','MON/WED: 4PM-6PM',432);

INSERT INTO TIME

VALUES ('C-2003','E','SUN/MON: 8AM-9:30AM',243);

INSERT INTO TIME

VALUES ('C-2009','A','MON/WED: 9:30AM-11AM',242);

INSERT INTO TIME

VALUES ('C-2015','B','SUN/MON: 11AM-12:30PM',234);

INSERT INTO TIME

VALUES ('C-3005','C','MON/WED: 9:30AM-11AM',7181);

INSERT INTO TIME

VALUES ('C-3012','D','SUN/MON: 11AM-12:30PM',7192);

INSERT INTO TIME

VALUES ('C-3022','A','SUN/MON: 2PM-3:30PM',7202);

INSERT INTO TIME

VALUES ('C-4005','A','MON/WED: 9:30AM-11AM',123);

INSERT INTO TIME

VALUES ('C-4012','B','SUN/MON: 11AM-12:30PM',514);

INSERT INTO TIME

VALUES ('C-4017','C','SUN/MON: 2PM-3:30PM',522);

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FID** | FNAME | **DID** | CONSULTING\_TIME | HIREDATE | SALARY |
| F-10563 | EZAZUL ISLAM | 10 | MON/WED: 4-5PM | 12-JUN-12 | 125000 |
| F-10541 | FAHAD AHMED | 10 | SUN/TUE: 10-11AM | 25-DEC-11 | 100000 |
| F-20531 | ISHRAT KABIR | 20 | SUN: 12-1:30PM | 4-JAN-10 | 80000 |
| F-20915 | NAZIBUR RAHMAN | 20 | MON: 2-3:30PM | 29-OCT-09 | 75000 |
| F-30452 | AVISHEK AHMED | 30 | TUE: 5-6PM | 26-AUG-10 | 120000 |
| F-30628 | RAQIF BASSAM | 30 | WED: 4-5PM | 14-MAY-11 | 130000 |
| F-40356 | ZIAUR RAHMAN | 40 | SUN: 3-4PM | 30-JUL-13 | 65000 |
| F-40935 | ZANNATUL FERDOUS | 40 | MON: 4-5PM | 13-APR-14 | 70000 |

CREATE TABLE FACULTY

(

FID VARCHAR2(7) PRIMARY KEY,

FNAME VARCHAR2(30) NOT NULL,

DID NUMBER(2) REFERENCES DEPARTMENT(DID),

CONSULTING\_TIME VARCHAR2(40),

HIREDATE DATE,

SALARY NUMBER(6)

);

INSERT INTO FACULTY

VALUES ('F-10563','EZAZUL ISLAM',10,'MON/WED: 4-5PM','12-JUN-12',125000);

INSERT INTO FACULTY

VALUES ('F-10541','FAHAD AHMED',10,'SUN/TUE: 10-11AM','25-DEC-11',100000);

INSERT INTO FACULTY

VALUES ('F-20531','ISHRAT KABIR',20,'SUN: 12-1:30PM','04-JAN-10',80000);

INSERT INTO FACULTY

VALUES ('F-20915','NAZIBUR RAHMAN',20,'MON: 2-3:30PM','29-OCT-09',75000);

INSERT INTO FACULTY

VALUES ('F-30452','AVISHEK AHMED',30,'TUE: 5-6PM','26-AUG-10',120000);

INSERT INTO FACULTY

VALUES ('F-30628','RAQIF BASSAM',30,'WED: 4-5PM','14-MAY-11',130000);

INSERT INTO FACULTY

VALUES ('F-40356','ZIAUR RAHMAN',40,'SUN: 3-4pm','30-JUL-13',65000);

INSERT INTO FACULTY

VALUES ('F-40935','ZANNATUL FERDOUS',40,'MON: 4-5PM','13-APR-14',70000);

|  |  |  |
| --- | --- | --- |
| **FID** | **COURSEID** | SEC |
| F-10563 | C-1009 | D |
| F-10563 | C-1015 | A |
| F-10541 | C-1006 | B |
| F-10541 | C-1009 | C |
| F-20531 | C-2003 | E |
| F-20915 | C-2009 | A |
| F-20915 | C-2015 | B |
| F-30452 | C-3012 | D |
| F-30628 | C-3005 | C |
| F-30628 | C-3022 | A |
| F-40356 | C-4012 | B |
| F-40935 | C-4005 | A |
| F-40935 | C-4017 | C |

CREATE TABLE ASSIGNED\_COURSES

(

FID VARCHAR2(7) REFERENCES FACULTY(FID),

COURSEID VARCHAR2(6) REFERENCES COURSE(COURSEID),

SEC VARCHAR2(1),

CONSTRAINT PK\_A PRIMARY KEY (COURSEID,SEC)

);

INSERT INTO ASSIGNED\_COURSES

VALUES ('F-10563','C-1009','D');

INSERT INTO ASSIGNED\_COURSES

VALUES ('F-10563','C-1015','A');

INSERT INTO ASSIGNED\_COURSES

VALUES ('F-10541','C-1006','B');

INSERT INTO ASSIGNED\_COURSES

VALUES ('F-10541','C-1009','C');

INSERT INTO ASSIGNED\_COURSES

VALUES ('F-20531','C-2003','E');

INSERT INTO ASSIGNED\_COURSES

VALUES ('F-20915','C-2009','A');

INSERT INTO ASSIGNED\_COURSES

VALUES ('F-20915','C-2015','B');

INSERT INTO ASSIGNED\_COURSES

VALUES ('F-30452','C-3012','D');

INSERT INTO ASSIGNED\_COURSES

VALUES ('F-30628','C-3005','C');

INSERT INTO ASSIGNED\_COURSES

VALUES ('F-30628','C-3022','A');

INSERT INTO ASSIGNED\_COURSES

VALUES ('F-40356','C-4012','B');

INSERT INTO ASSIGNED\_COURSES

|  |  |
| --- | --- |
| **PID** | **PHONE\_NUMBER** |
| S15-23456-2 | 01715458917 |
| S14-23985-1 | 01712012006 |
| S14-26642-2 | 01620614444 |
| S14-26642-2 | 01720615554 |
| S14-26668-2 | 01614756214 |
| S14-25634-3 | 01813542694 |
| S13-27569-1 | 01559753164 |
| S13-26531-3 | 01924563278 |
| S13-26531-3 | 01524349528 |
| S12-24653-1 | 01715663897 |
| S12-21985-2 | 01915324775 |
| S12-25342-3 | 01716452398 |
| S11-28654-3 | 01522349785 |
| S13-26453-2 | 01813265563 |
| F-10563 | 01712458917 |
| F-10541 | 01813549871 |
| F-10541 | 01613565471 |
| F-20531 | 01915321654 |
| F-20915 | 01814236578 |
| F-30452 | 01566324851 |
| F-30628 | 01985324596 |
| F-30628 | 01713624589 |
| F-40356 | 01670012552 |
| F-40935 | 01523987456 |

VALUES ('F-40935','C-4005','A');

INSERT INTO ASSIGNED\_COURSES

VALUES ('F-40935','C-4017','C');

CREATE TABLE PHONE\_NUMBER

(

PID VARCHAR2(11),

PHONE\_NUMBER VARCHAR2(11),

CONSTRAINT PK\_P PRIMARY KEY (PID,PHONE\_NUMBER)

);

INSERT INTO PHONE\_NUMBER

VALUES ('S15-23456-2','01715458917');

INSERT INTO PHONE\_NUMBER

VALUES ('S14-23985-1','01712012006');

INSERT INTO PHONE\_NUMBER

VALUES ('S14-26642-2','01620614444');

INSERT INTO PHONE\_NUMBER

VALUES ('S14-26642-2','01720615554');

INSERT INTO PHONE\_NUMBER

VALUES ('S14-26668-2','01614756214');

INSERT INTO PHONE\_NUMBER

VALUES ('S14-25634-3','01813542694');

INSERT INTO PHONE\_NUMBER

VALUES ('S13-27569-1','01559753164');

INSERT INTO PHONE\_NUMBER

VALUES ('S13-26531-3','01924563278');

INSERT INTO PHONE\_NUMBER

VALUES ('S13-26531-3','01524349528');

INSERT INTO PHONE\_NUMBER

VALUES ('S12-24653-1','01715663897');

INSERT INTO PHONE\_NUMBER

VALUES ('S12-21985-2','01915324775');

INSERT INTO PHONE\_NUMBER

VALUES ('S12-25342-3','01716452398');

INSERT INTO PHONE\_NUMBER

VALUES ('S11-28654-3','01522349785');

INSERT INTO PHONE\_NUMBER

VALUES ('S13-26453-2','01813265563');

INSERT INTO PHONE\_NUMBER

VALUES ('F-10563','01712458917');

INSERT INTO PHONE\_NUMBER

VALUES ('F-10541','01813549871');

INSERT INTO PHONE\_NUMBER

VALUES ('F-10541','01613565471');

INSERT INTO PHONE\_NUMBER

VALUES ('F-20531','01915321654');

INSERT INTO PHONE\_NUMBER

VALUES ('F-20915','01814236578');

INSERT INTO PHONE\_NUMBER

VALUES ('F-30452','01566324851');

INSERT INTO PHONE\_NUMBER

VALUES ('F-30628','01985324596');

INSERT INTO PHONE\_NUMBER

VALUES ('F-30628','01713624589');

INSERT INTO PHONE\_NUMBER

VALUES ('F-40356','01670012552');

INSERT INTO PHONE\_NUMBER

VALUES ('F-40935','01523987456');

|  |  |
| --- | --- |
| **EID** | **EMAIL\_ADDRESS** |
| S15-23456-2 | [FAHIMKHAN@GMAIL.COM](mailto:FAHIMKHAN@GMAIL.COM) |
| S14-23985-1 | [RAFIA.TABASSUM@HOTMAIL.COM](mailto:RAFIA.TABASSUM@HOTMAIL.COM) |
| S14-26642-2 | [ARA.RIFAT@GMAIL.COM](mailto:ARA.RIFAT@GMAIL.COM) |
| S14-26642-2 | [CHOWDHURY.RIFAT@YMAIL.COM](mailto:CHOWDHURY.RIFAT@YMAIL.COM) |
| S14-26668-2 | [SHAMSADNAN@GMAIL.COM](mailto:SHAMSADNAN@GMAIL.COM) |
| S14-25634-3 | [AFRINRAHMAN@GMAIL.COM](mailto:AFRINRAHMAN@GMAIL.COM) |
| S13-27569-1 | [ISLAMMIM@GMAIL.COM](mailto:ISLAMMIM@GMAIL.COM) |
| S13-26531-3 | [SKCHY@LIVE.COM](mailto:SKCHY@LIVE.COM) |
| S13-26531-3 | [SAKIBCHY@GMAIL.COM](mailto:SAKIBCHY@GMAIL.COM) |
| S12-24653-1 | [NADIM.R@ROCKETMAIL.COM](mailto:NADIM.R@ROCKETMAIL.COM) |
| S12-21985-2 | [MEHEDIHS@GMAIL.COM](mailto:MEHEDIHS@GMAIL.COM) |
| S12-25342-3 | [R.AHMED93@GMAIL.COM](mailto:R.AHMED93@GMAIL.COM) |
| S11-28654-3 | [TISLAM@YAHOO.COM](mailto:TISLAM@YAHOO.COM) |
| S13-26453-2 | [ASHIK.M@YMAIL.COM](mailto:ASHIK.M@YMAIL.COM) |
| F-10563 | [EZAZUL@AIUB.EDU](mailto:EZAZUL@AIUB.EDU) |
| F-10541 | [FAHAD.AHMED@AIUB.EDU](mailto:FAHAD.AHMED@AIUB.EDU) |
| F-10541 | [FAHADAHMED@GMAIL.COM](mailto:FAHADAHMED@GMAIL.COM) |
| F-20531 | [ISHRAT@AIUB.EDU](mailto:ISHRAT@AIUB.EDU) |
| F-20915 | [RAHMAN.NAZIBUR@AIUB.EDU](mailto:RAHMAN.NAZIBUR@AIUB.EDU) |
| F-30452 | [AVISHEK@AIUB.EDU](mailto:AVISHEK@AIUB.EDU) |
| F-30628 | [RAQIF@AIUB.EDU](mailto:RAQIF@AIUB.EDU) |
| F-30628 | [R.BASSAM@GMAIL.COM](mailto:R.BASSAM@GMAIL.COM) |
| F-40356 | [ZIAUR@AIUB.EDU](mailto:ZIAUR@AIUB.EDU) |
| F-40935 | [FERDOUSJANNAT@AIUB.EDU](mailto:FERDOUSJANNAT@AIUB.EDU) |

CREATE TABLE EMAIL\_ADDRESS

(

EID VARCHAR2(11),

EMAIL\_ADDRESS VARCHAR2(30),

CONSTRAINT PK\_E PRIMARY KEY (EID,EMAIL\_ADDRESS)

);

INSERT INTO EMAIL\_ADDRESS

VALUES ('S15-23456-2','FAHIMKHAN@GMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('S14-23985-1','RAFIA.TABASSUM@HOTMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('S14-26642-2','ARA.RIFAT@GMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('S14-26642-2','CHOWDHURY.RIFAT@YMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('S14-26668-2','SHAMSADNAN@GMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('S14-25634-3','AFRINRAHMAN@GMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('S13-27569-1','ISLAMMIM@GMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('S13-26531-3','SKCHY@LIVE.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('S13-26531-3','SAKIBCHY@GMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('S12-24653-1','NADIM.R@ROCKETMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('S12-21985-2','MEHDIHS@GMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('S12-25342-3','R.AHMED93@GMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('S11-28654-3','TISLAM@YAHOO.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('S13-26453-2','ASHIK.M@YMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('F-10563','EZAZUL@AIUB.EDU');

INSERT INTO EMAIL\_ADDRESS

VALUES ('F-10541','FAHAD.AHMED@AIUB.EDU');

INSERT INTO EMAIL\_ADDRESS

VALUES ('F-10541','FAHADAHMED@GMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('F-20531','ISHRAT@AIUB.EDU');

INSERT INTO EMAIL\_ADDRESS

VALUES ('F-20915','RAHMAN.NAZIBUR@AIUB.EDU');

INSERT INTO EMAIL\_ADDRESS

VALUES ('F-30452','AVISHEK@AIUB.EDU');

INSERT INTO EMAIL\_ADDRESS

VALUES ('F-30628','RAQIF@AIUB.EDU');

INSERT INTO EMAIL\_ADDRESS

VALUES ('F-30628','R.BASSAM@GMAIL.COM');

INSERT INTO EMAIL\_ADDRESS

VALUES ('F-40356','ZIAUR@AIUB.EDU');

INSERT INTO EMAIL\_ADDRESS

VALUES ('F-40935','FERDOUSJANNAT@AIUB.EDU');

|  |  |  |
| --- | --- | --- |
| **SID** | **COURSEID** | SEC |
| S15-23456-2 | C-1006 | A |
| S15-23456-2 | C-1009 | C |
| S14-23985-1 | C-4005 | A |
| S14-23985-1 | C-4012 | B |
| S14-26642-2 | C-1009 | D |
| S14-26642-2 | C-1012 | E |
| S14-26668-2 | C-1009 | D |
| S14-26668-2 | C-1012 | F |
| S14-25634-3 | C-1015 | A |
| S14-25634-3 | C-1009 | C |
| S13-27569-1 | C-2003 | E |
| S13-26531-3 | C-2009 | A |
| S13-26531-3 | C-2015 | B |
| S12-24653-1 | C-1015 | B |
| S12-21985-2 | C-3022 | A |
| S12-21985-2 | C-3012 | D |
| S12-25342-3 | C-4005 | A |
| S12-25342-3 | C-4012 | B |
| S11-28654-3 | C-4017 | C |
| S13-26453-2 | C-4012 | B |
| S13-26453-2 | C-4017 | C |

CREATE TABLE REGISTRATION

(

SID VARCHAR2(11) REFERENCES STUDENT(SID),

COURSEID VARCHAR2(6) REFERENCES COURSE(COURSEID),

SEC VARCHAR2(1),

CONSTRAINT PK\_R PRIMARY KEY (SID,COURSEID)

);

INSERT INTO REGISTRATION

VALUES ('S15-23456-2','C-1006','A');

INSERT INTO REGISTRATION

VALUES ('S15-23456-2','C-1009','C');

INSERT INTO REGISTRATION

VALUES ('S14-23985-1','C-4005','A');

INSERT INTO REGISTRATION

VALUES ('S14-23985-1','C-4012','B');

INSERT INTO REGISTRATION

VALUES ('S14-26642-2','C-1009','D');

INSERT INTO REGISTRATION

VALUES ('S14-26642-2','C-1012','E');

INSERT INTO REGISTRATION

VALUES ('S14-26668-2','C-1009','D');

INSERT INTO REGISTRATION

VALUES ('S14-26668-2','C-1012','F');

INSERT INTO REGISTRATION

VALUES ('S14-25634-3','C-1015','A');

INSERT INTO REGISTRATION

VALUES ('S14-25634-3','C-1009','C');

INSERT INTO REGISTRATION

VALUES ('S13-27569-1','C-2003','E');

INSERT INTO REGISTRATION

VALUES ('S13-26531-3','C-2009','A');

INSERT INTO REGISTRATION

VALUES ('S13-26531-3','C-2015','B');

INSERT INTO REGISTRATION

VALUES ('S12-24653-1','C-1015','B');

INSERT INTO REGISTRATION

VALUES ('S12-21985-2','C-3022','A');

INSERT INTO REGISTRATION

VALUES ('S12-21985-2','C-3012','D');

INSERT INTO REGISTRATION

VALUES ('S12-25342-3','C-4005','A');

INSERT INTO REGISTRATION

VALUES ('S12-25342-3','C-4012','B');

INSERT INTO REGISTRATION

VALUES ('S11-28654-3','C-4017','C');

INSERT INTO REGISTRATION

VALUES ('S13-26453-2','C-4012','B');

INSERT INTO REGISTRATION

VALUES ('S13-26453-2','C-4017','C');

**Sample Questionnaire:**

1. Adnan wants to know who the head of the photography club is.
2. Admin wants to know the student(S) ID who are freshmen.
3. Increase salary of those faculty members who work for CS department.
4. Rifat wants to know the consulting time of her faculty Ezazul Islam.
5. Ahona wants to see the total number of credits of her department.
6. Admin wants to see the department wise average CGPA.
7. Admin wants to see all information about accounts.
8. Admin wants to change column name from CID to CLUBID.
9. Rifat wants to see her faculty Ezazul Islam’s consulting time.
10. Show department wise student number.
11. Add 12 credits to TOTAL\_CREDITS\_COMPLETED for SHAMS ADNAN and RIFAT CHOWDHURY.
12. Change the head of photography club to SHAMS ADNAN.
13. Admin wants to see the employees who joined before 2010.

14. SHAMS ADNAN has left the university. Delete all his information from the student table.

**SQL Query for Questionnaire:**

1. SELECT HEAD\_NAME

FROM CLUB;

1. SELECT \*

FROM STUDENT

WHERE TOTAL\_CREDITS\_COMPLETED=0;

1. UPDATE FACULTY

SET SALARY=SALARY+20000

WHERE DID=10;

1. SELECT CONSULTING\_TIME

FROM FACULTY

WHERE FNAME=”EZAZUL ISLAM”;

1. SELECT COUNT(SID) AS TOTAL\_STUDENTS,DID

FROM STUDENT

GROUP BY DID;

1. SELECT DID,AVG(CGPA) AS AVG\_CGPA

FROM STUDENT

GROUP BY DID;

1. SELECT \*

FROM ACCOUNT;

1. ALTER CLUB

RENAME HEAD\_NAME TO PRESIDENT;

1. SELECT EMAIL\_ADDRESS

FROM FACULTY F,EMAIL\_ADDRESS E

WHERE F.FID=E.EID

AND FNAME= ‘EZAZUL ISLAM’;

1. SELECT DID,COUNT(SID) AS TOTAL STUDENTS

FROM STUDENT

GROUP BY DID;

1. UPDATE STUDENT

SET TOTAL\_CREDITS\_COMPLETED= TOTAL\_CREDITS\_COMPLETED+12

WHERE SNAME= ‘SHAMS ADNAN’

OR SNAME= ‘RIFAT CHOWDHURY’;

1. UPDATE CLUB

SET HEAD\_NAME = ‘SHAMS ADNAN’

WHERE CNAME = ‘PHOTOGRAPHY CLUB’;

1. SELECT \*

FROM FACULTY

WHERE SUBSTR (HIREDATE,-2,2)<10;

14. DELETE FROM STUDENT WHERE SNAME= ‘SHAMS ADNAN’

**Relational Algebra for Questionnaire:**

1. ΠHEAD\_NAME(**σ**CNAME= ‘PHOTOGRAPHY CLUB’ (CLUB))
2. ΠSID,SNAME(**σ**TOTAL\_CREDIT\_COMPLETED = 0 (STUDENT))

4. ΠCONSULTING\_TIME(**σ**FNAME = ‘EZAZUL ISLAM’ (FACULTY))

5. ΠTOTAL\_CREDITS(**σ**STUDENT.DID =’AHONA AFRIN’ (STUDENT\bowtieDEPARTMENT))

6. DID *g*AVG(CGPA) (STUDENT)

7. Π(ACCOUNT)

8. *ρ*PRESIDENT/HEAD\_NAME (CLUB)

9. ΠEMAIL\_ADDRESS (**σ**FNAME = ‘EZAZUL ISLAM’ (FACULTY\bowtie EMAIL\_ADDRESS))

10. DID *gCOUNT(SID)(STUDENT)*

**Why Users Should Adopt This System:**

* Public Universities in Bangladesh are yet to adopt computerized systems for recording of university data. This system will indeed help them step into the future.
* It will be cost effective to use our system as less storage space will be required to store all the data. A reasonably powerful computer can handle all the processes.
* It is time efficient as well since the procedure of looking through record books is eliminated.
* Backup facility will allow Administration personnel to keep copies of records easily should an unfortunate situation occur.