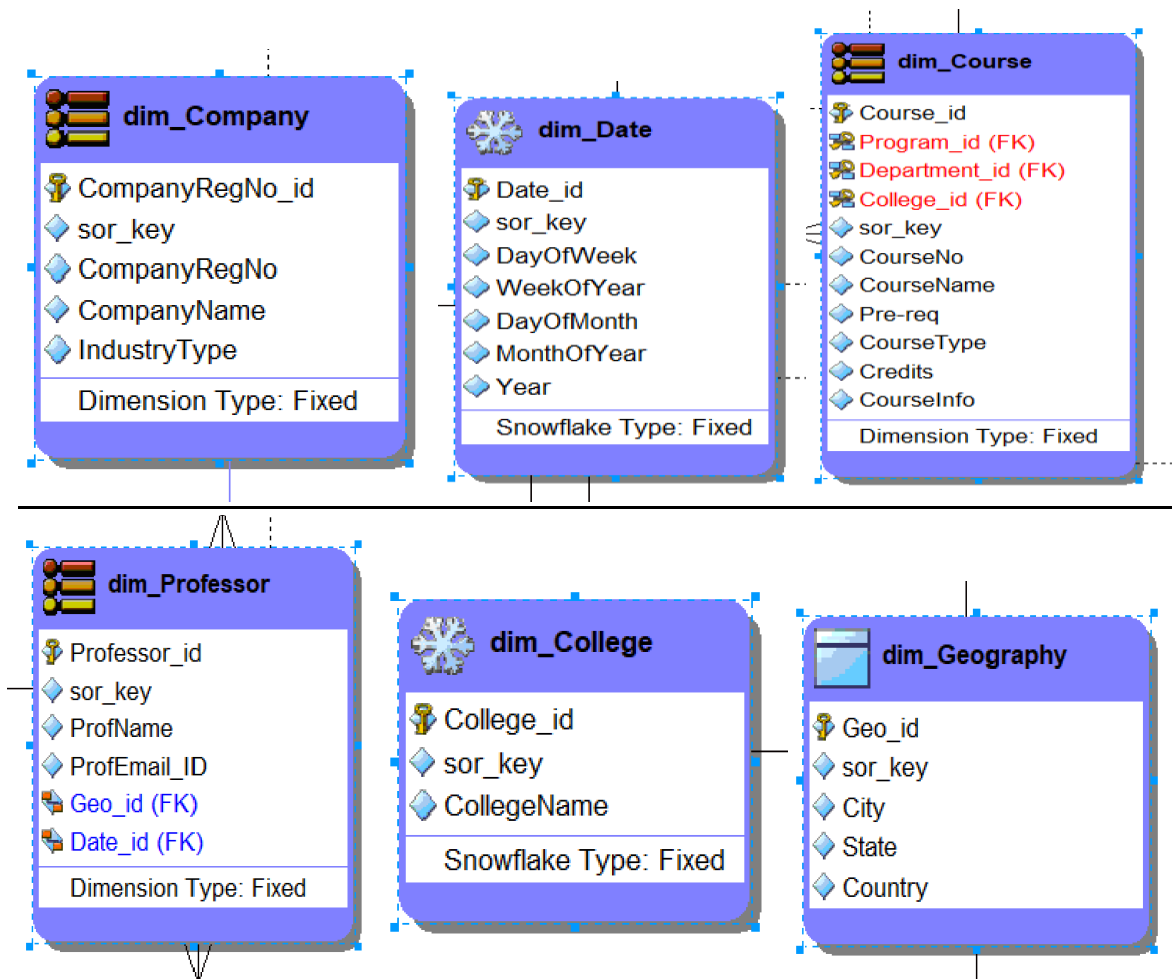
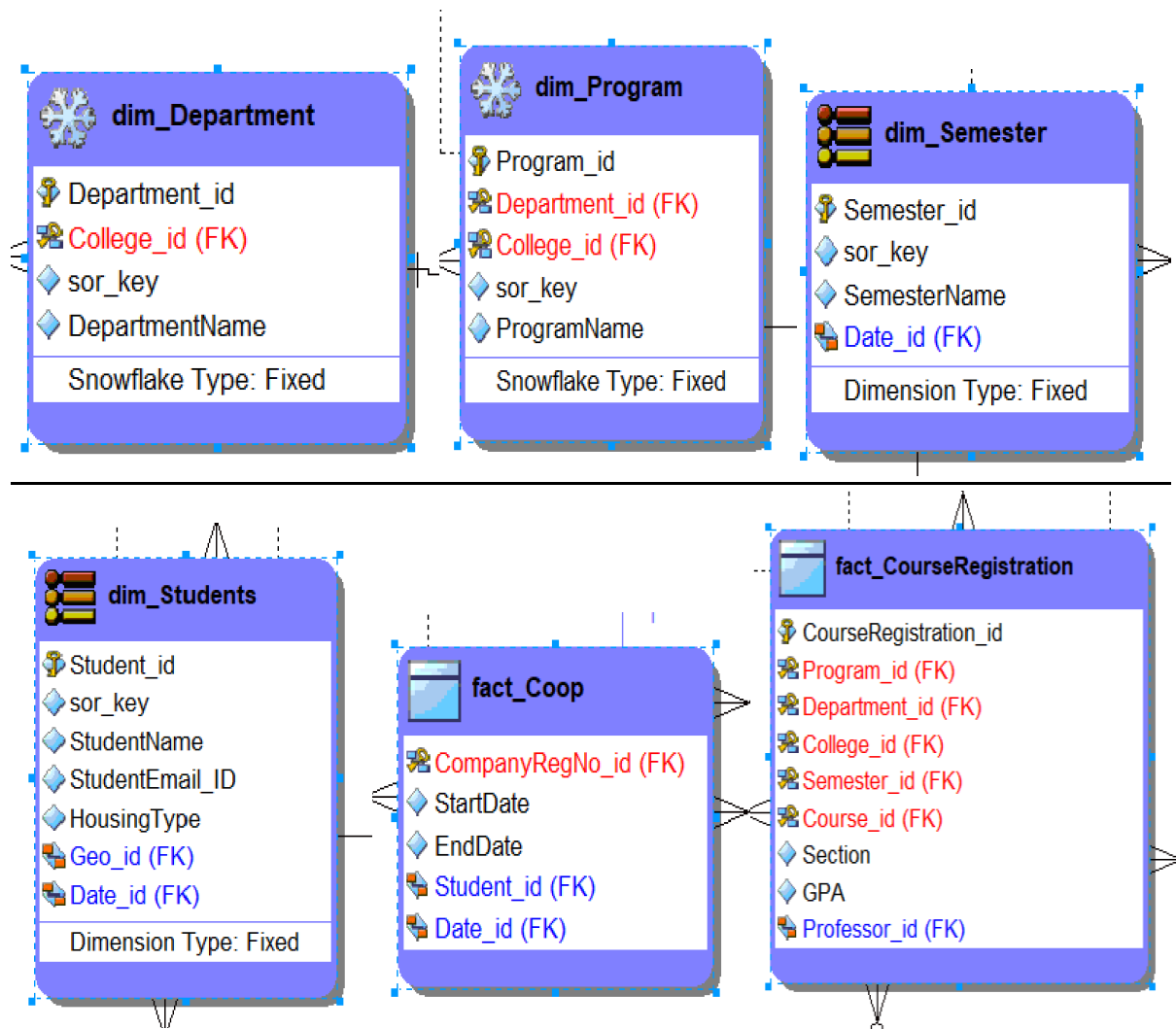


University Degree Program

Dimensions and Facts –





The diagram illustrates a data warehouse schema for a university database. The central fact table, **Fact_CourseRegistration**, is connected to several dimension tables. The dimensions are:

- dim_Student**: Attributes include Student ID (PK), Student Name, Student Email ID, Studying Type, Geo ID (FK), and Date ID (FK). Dimension Type: Fixed.
- dim_College**: Attributes include College ID (PK) and College Name. Snowflake Type: Fixed.
- dim_Department**: Attributes include Department ID (PK), College ID (FK), and Department Name. Snowflake Type: Fixed.
- dim_Program**: Attributes include Program ID (PK), Department ID (FK), and Program Name. Snowflake Type: Fixed.
- dim_Course**: Attributes include Course ID (PK), Program ID (FK), Department ID (FK), College ID (FK), Course Name, Credits, and Course Info. Dimension Type: Fixed.
- dim_Professor**: Attributes include Professor ID (PK), Prof Name, Prof Email ID, Geo ID (FK), Date ID (FK), and Department ID (FK). Dimension Type: Fixed.
- dim_Semester**: Attributes include Semester ID (PK), Course ID (FK), Semester Name, and Date ID (FK). Dimension Type: Read.
- dim_Date**: Attributes include Date ID (PK), Day Of Week, Week Of Year, Day Of Month, Month Of Year, and Year. Snowflake Type: Read.
- dim_Company**: Attributes include Company Reg No (PK), Company Reg No, Company Name, and Industry Type. Dimension Type: Fixed.
- dim_CoOp**: Attributes include Company Reg No (FK), Start Date, Student ID (FK), Date ID (FK), and College ID (FK). Dimension Type: Read.
- dim_EmployeeGrade**: Attributes include Employee ID (PK), Prof Name, Day Of Week, Day Of Month, Year, Week Of Year, Month Of Year, and Hour Key. Dimension Type: Read/Write.
- dim_Course_Info**: Attributes include Semester Name, Course Info, and Course Name. Dimension Type: Read/Write.

The schema uses a snowflake design, with dimension tables further normalized into sub-dimensions where applicable (e.g., **dim_College** links to **dim_Department**, which links to **dim_Program**, which links to **dim_Course**). The central fact table **Fact_CourseRegistration** contains the primary data, with foreign keys linking to the primary keys of the dimension tables.

The screenshot displays the Alteryx Designer x64 interface. At the top, there's a menu bar with options like File, Edit, View, Options, and Help. Below the menu is a toolbar with icons for various functions. The main workspace shows a workflow named 'New Workflow3'. The workflow is organized into two columns of data sources, connected by join tools. The left column contains 'University.xlsx' files with queries like 'dim_colle', 'dim_coun', 'dim_date', 'dim_dep', 'dim_gro', 'dim_prog', 'dim_sam', 'fact_coop', 'dim_stat', and 'dim_stud'. The right column contains 'DSN-A-university' files with queries like 'dim_colle', 'dim_dep', 'dim_gro', 'dim_prog', 'dim_sam', 'fact_coop', 'dim_stat', and 'dim_stud'. The workflow is set to 'Horizontal' layout and 'Show' annotations. A sidebar on the left shows 'Canvas Options' and 'Workflow - Configuration'.

DDL –

--

-- ER/Studio Data Architect SQL Code Generation

-- Project : University.DM1

--

-- Date Created : Friday, April 08, 2022 14:52:38

-- Target DBMS : MySQL 8.x

--

--

-- TABLE: dim_College

--

```
CREATE TABLE dim_College(  
    College_id INT NOT NULL,  
    sor_key INT NOT NULL,  
    CollegeName VARCHAR(50) NOT NULL,  
    PRIMARY KEY (College_id)  
)ENGINE=MYISAM  
;
```

--

-- TABLE: dim_Company

--

```
CREATE TABLE dim_Company(  
    CompanyRegNo_id INT NOT NULL,
```

```

sor_key      INT      NOT NULL,
CompanyRegNo INT      NOT NULL,
CompanyName  VARCHAR(50),
IndustryType VARCHAR(50),
PRIMARY KEY (CompanyRegNoSK)
)ENGINE=MYISAM
;

```

```

--
-- TABLE: dim_Course
--

```

```

CREATE TABLE dim_Course(
  Course_id    INT      NOT NULL,
  Program_id   INT      NOT NULL,
  Department_id INT      NOT NULL,
  College_id   INT      NOT NULL,
  sor_key      INT      NOT NULL,
  CourseNo     INT      NOT NULL,
  CourseName   VARCHAR(50) NOT NULL,
  `Pre-req`    VARCHAR(50),
  CourseType   VARCHAR(50) NOT NULL,
  Credits      INT      NOT NULL,
  CourseInfo   VARCHAR(45),
  PRIMARY KEY (CourseNoSK, Program_id, Department_id, College_id)
)ENGINE=MYISAM
;

```

--

-- TABLE: dim_Date

--

```
CREATE TABLE dim_Date(  
    Date_id      INT      NOT NULL,  
    sor_key      CHAR(10),  
    DayOfWeek    INT      NOT NULL,  
    WeekNumberOfYear INT    NOT NULL,  
    DayOfMonth    INT      NOT NULL,  
    MonthOfYear   INT      NOT NULL,  
    Year          INT      NOT NULL,  
    PRIMARY KEY (Date_id)  
)ENGINE=MYISAM  
;
```

--

-- TABLE: dim_Department

--

```
CREATE TABLE dim_Department(  
    Department_id INT      NOT NULL,  
    College_id    INT      NOT NULL,  
    sor_key       INT      NOT NULL,
```

```
    DepartmentName VARCHAR(50) NOT NULL,  
    PRIMARY KEY (Department_id, College_id)  
)ENGINE=MYISAM  
;
```

```
--  
-- TABLE: dim_Geography  
--
```

```
CREATE TABLE dim_Geography(  
    Geo_id INT NOT NULL,  
    sor_key CHAR(10),  
    City VARCHAR(50) NOT NULL,  
    State VARCHAR(50) NOT NULL,  
    Country VARCHAR(50) NOT NULL,  
    PRIMARY KEY (Geo_id)  
)ENGINE=MYISAM  
;
```

```
--  
-- TABLE: dim_Professor  
--
```

```
CREATE TABLE dim_Professor(  
    Professor_id INT NOT NULL,
```

```

sor_key    INT        NOT NULL,
ProfName    CHAR(10),
ProfEmail_ID  VARCHAR(50)  NOT NULL,
Geo_id     INT        NOT NULL,
Date_id     INT        NOT NULL,
PRIMARY KEY (Professor_id)
)ENGINE=MYISAM
;

--

-- TABLE: dim_Program
--

CREATE TABLE dim_Program(
    Program_id    INT        NOT NULL,
    Department_id INT        NOT NULL,
    College_id    INT        NOT NULL,
    sor_key       INT        NOT NULL,
    ProgramName   VARCHAR(50) NOT NULL,
    PRIMARY KEY (Program_id, Department_id, College_id)
)ENGINE=MYISAM
;

--

-- TABLE: dim_Semester

```


--

```
CREATE TABLE dim_Semester(  
    Semester_id  INT      NOT NULL,  
    sor_key      INT      NOT NULL,  
    SemesterName VARCHAR(50) NOT NULL,  
    Date_id      INT      NOT NULL,  
    PRIMARY KEY (Semester_id)  
)ENGINE=MYISAM  
;
```

--

-- TABLE: dim_Students

--

```
CREATE TABLE dim_Students(  
    Student_id  INT      NOT NULL,  
    sor_key      INT      NOT NULL,  
    StudentName  VARCHAR(50) NOT NULL,  
    StudentEmail_ID VARCHAR(30) NOT NULL,  
    HousingType  VARCHAR(40),  
    Geo_id       INT      NOT NULL,  
    Date_id      INT      NOT NULL,  
    PRIMARY KEY (Student_id)  
)ENGINE=MYISAM  
;
```

--

-- TABLE: fact_Coop

--

```
CREATE TABLE fact_Coop(  
    CompanyRegNo_id INT NOT NULL,  
    StartDate DATE NOT NULL,  
    EndDate DATE NOT NULL,  
    Student_id INT NOT NULL,  
    Date_id INT NOT NULL,  
    PRIMARY KEY (CompanyRegNo_id)  
)ENGINE=MYISAM  
;
```

--

-- TABLE: `fact_Coop fact_CourseRegistration`

--

```
CREATE TABLE `fact_Coop fact_CourseRegistration`(  
    CompanyRegNo_id INT NOT NULL,  
    CourseRegistration_id INT NOT NULL,  
    Program_id INT NOT NULL,  
    Department_id INT NOT NULL,  
    College_id INT NOT NULL,  
    Semester_id INT NOT NULL,
```

```
Course_id      INT    NOT NULL,

PRIMARY KEY (CompanyRegNo_id, CourseRegistration_id, Program_id, Department_id, College_id,
Semester_id, Course_id)

)ENGINE=MYISAM

;
```

```
--

-- TABLE: fact_CourseRegistration

--
```

```
CREATE TABLE fact_CourseRegistration(

CourseRegistration_id INT      NOT NULL,

Program_id          INT      NOT NULL,

Department_id       INT      NOT NULL,

College_id          INT      NOT NULL,

Semester_id         INT      NOT NULL,

Course_id           INT      NOT NULL,

Section             VARCHAR(50),

GPA                 INT      NOT NULL,

Professor_id        INT      NOT NULL,

PRIMARY KEY (CourseRegistration_id, Program_id, Department_id, College_id, Semester_id,
Course_id)

)ENGINE=MYISAM

;
```

--

-- TABLE: dim_Course

--

ALTER TABLE dim_Course ADD CONSTRAINT Refdim_Program26

FOREIGN KEY (Program_id, Department_id, College_id)

REFERENCES dim_Program(Program_id, Department_id, College_id)

;

--

-- TABLE: dim_Department

--

ALTER TABLE dim_Department ADD CONSTRAINT Refdim_College7

FOREIGN KEY (College_id)

REFERENCES dim_College(College_id)

;

--

-- TABLE: dim_Professor

--

ALTER TABLE dim_Professor ADD CONSTRAINT Refdim_Geography58

FOREIGN KEY (Geo_id)

REFERENCES dim_Geography(Geo_id)

;

```
ALTER TABLE dim_Professor ADD CONSTRAINT Refdim_Date60
    FOREIGN KEY (Date_id)
    REFERENCES dim_Date(Date_id)
;
```

```
--
-- TABLE: dim_Program
--
```

```
ALTER TABLE dim_Program ADD CONSTRAINT Refdim_Department6
    FOREIGN KEY (Department_id, College_id)
    REFERENCES dim_Department(Department_id, College_id)
;
```

```
--
-- TABLE: dim_Semester
--
```

```
ALTER TABLE dim_Semester ADD CONSTRAINT Refdim_Date59
    FOREIGN KEY (Date_id)
    REFERENCES dim_Date(Date_id)
;
```

```
--
-- TABLE: dim_Students
--
```

```
ALTER TABLE dim_Students ADD CONSTRAINT Refdim_Geography52
    FOREIGN KEY (Geo_id)
    REFERENCES dim_Geography(Geo_id)
;
```

```
ALTER TABLE dim_Students ADD CONSTRAINT Refdim_Date53
    FOREIGN KEY (Date_id)
    REFERENCES dim_Date(Date_id)
;
```

```
--
-- TABLE: fact_Coop
--
```

```
ALTER TABLE fact_Coop ADD CONSTRAINT Refdim_Company21
    FOREIGN KEY (CompanyRegNo_id)
    REFERENCES dim_Company(CompanyRegNo_id)
;
```

```
ALTER TABLE fact_Coop ADD CONSTRAINT Refdim_Students54
    FOREIGN KEY (Student_id)
    REFERENCES dim_Students(Student_id)
;
```

```
ALTER TABLE fact_Coop ADD CONSTRAINT Refdim_Date61
    FOREIGN KEY (Date_id)
    REFERENCES dim_Date(Date_id)
```

```
;
```

```
--
```

```
-- TABLE: `fact_Coop fact_CourseRegistration`
```

```
--
```

```
ALTER TABLE `fact_Coop fact_CourseRegistration` ADD CONSTRAINT Reffact_Coop62
```

```
    FOREIGN KEY (CompanyRegNo_id)
```

```
    REFERENCES fact_Coop(CompanyRegNo_id)
```

```
;
```

```
ALTER TABLE `fact_Coop fact_CourseRegistration` ADD CONSTRAINT Reffact_CourseRegistration63
```

```
    FOREIGN KEY (CourseRegistration_id, Program_id, Department_id, College_id, Semester_id,  
Course_id)
```

```
    REFERENCES fact_CourseRegistration(CourseRegistration_id, Program_id, Department_id, College_id,  
Semester_id, Course_id)
```

```
;
```

```
--
```

```
-- TABLE: fact_CourseRegistration
```

```
--
```

```
ALTER TABLE fact_CourseRegistration ADD CONSTRAINT Refdim_Course2
```

```
    FOREIGN KEY (Course_id, Program_id, Department_id, College_id)
```

```
    REFERENCES dim_Course(Course_id, Program_id, Department_id, College_id)
```

```
;
```

```
ALTER TABLE fact_CourseRegistration ADD CONSTRAINT Refdim_Semester23  
    FOREIGN KEY (Semester_id)  
    REFERENCES dim_Semester(Semester_id)  
;
```

```
ALTER TABLE fact_CourseRegistration ADD CONSTRAINT Refdim_Professor30  
    FOREIGN KEY (Professor_id)  
    REFERENCES dim_Professor(Professor_id)  
;
```