

# ITI EXAMINATION SYSTEM



## Introduction

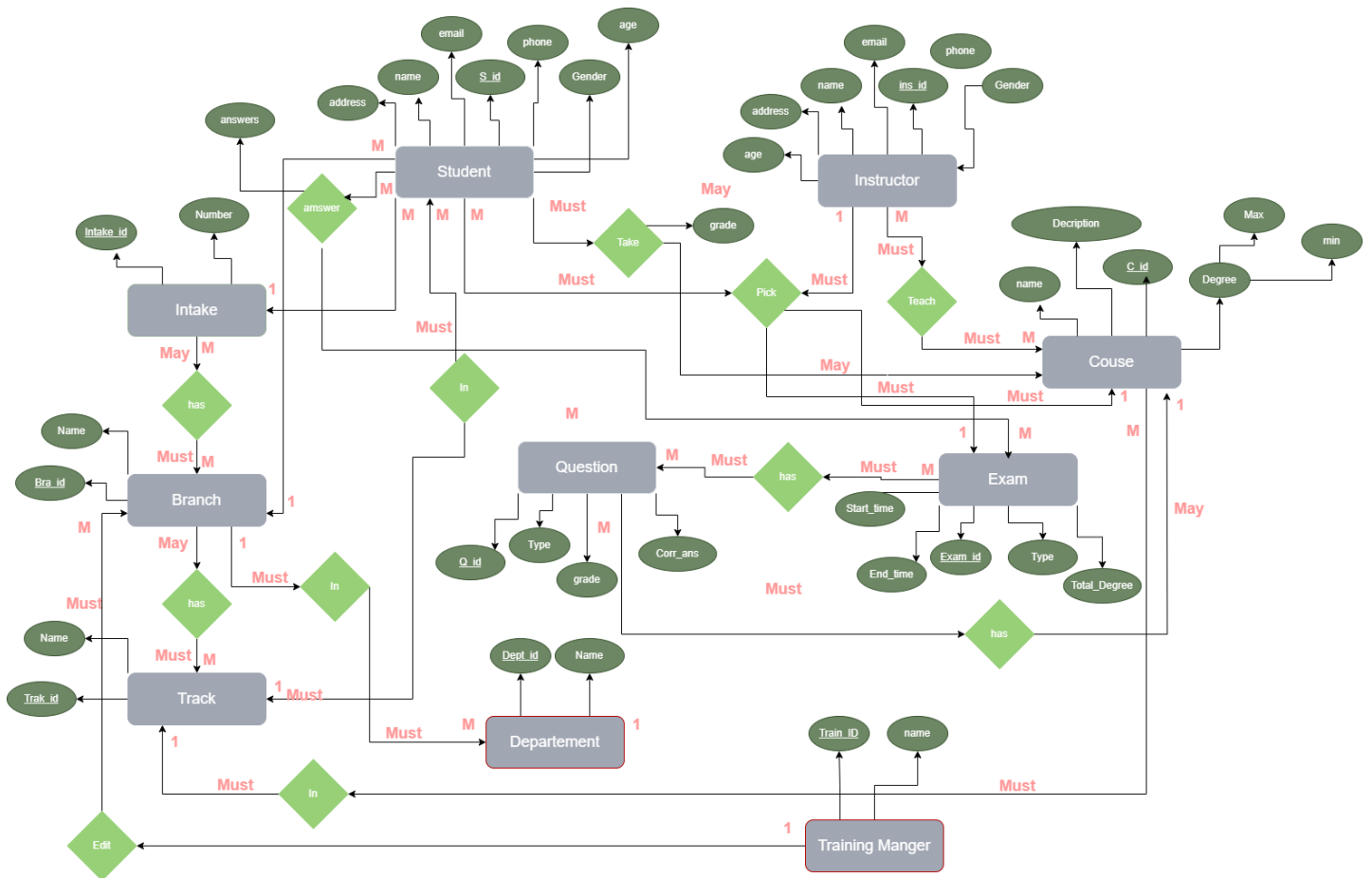
### **This Project Provides :**

- Database
- Data Warehouse
- SSRS
- Reports And Dashboards

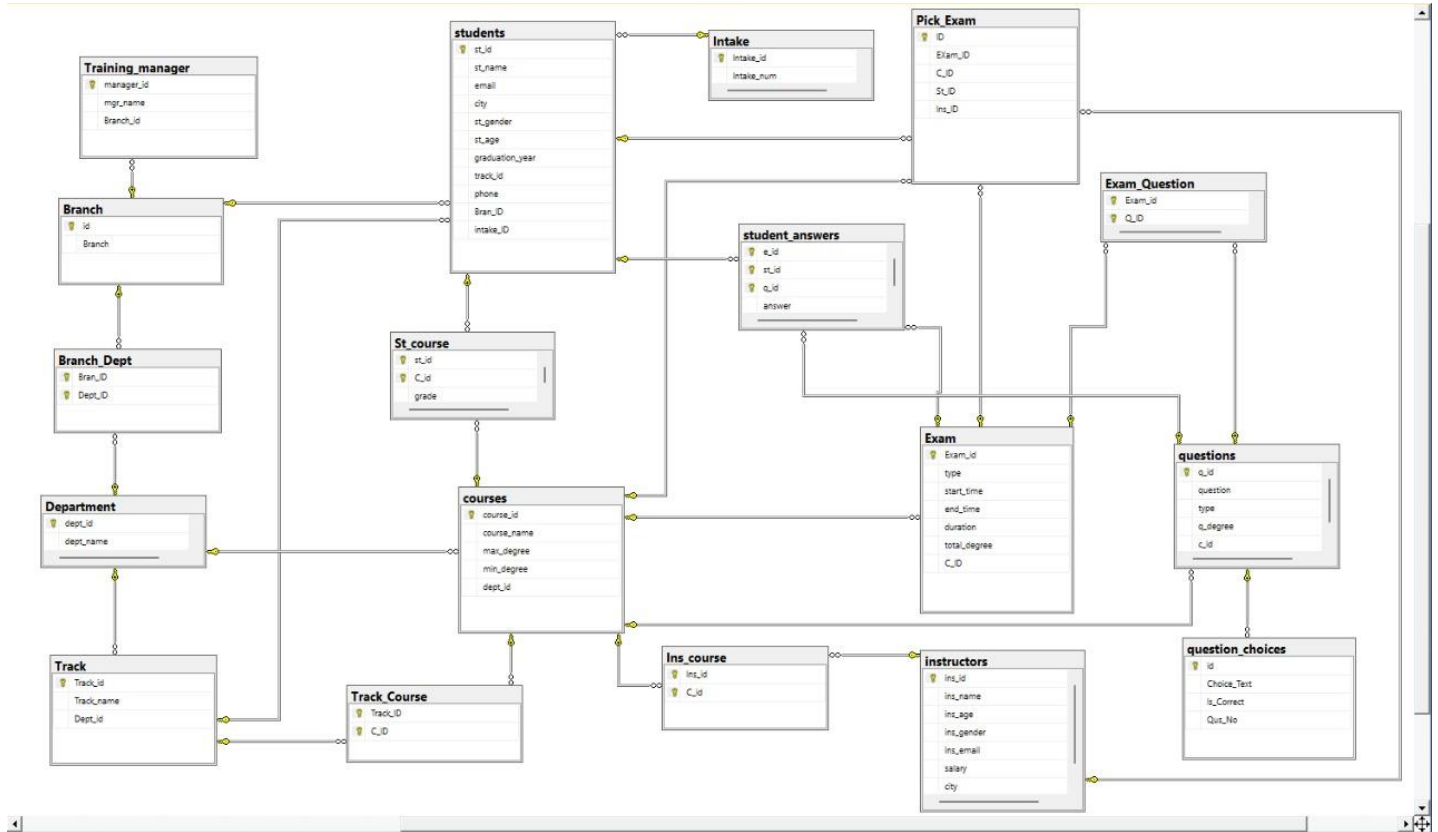
### Team Members:

- Ahmed Shaban
- Ahmed Sharabasy
- Mahmoud Saied
- Eslam Mohamed
- Reham Mostafa
- Ahmed Soliman

# The ER-Diagram:



## System Diagram:



## System Functions:

### 1. **calaculate\_degrees:**

To calculate the total degree for each student in the table as a result by comparing st.answer with correct answer from question pool add this degree in student table then sum the degree as total degree.

### 2. **GetMaxDegreeForCourse:**

Get Max degree for each course to add check constraint to check total degree of course before insertion.

### 3. **CheckStudentExamPermissionAndTime:**

check exam permission and time.

## System procedures:

### 1. **create\_exam:**

to create a new exam by the instructor and insert it into the Exam table.

### 2. **random\_question**

Get a random question by giving the procedure the course id to indicate the question and the number of questions that instructor wants to get.

### 3. **get\_students\_corrective\_in\_course**

Getting the students whose degree is less than min\_gdegree of the course to make a corrective Exam to them.

### 4. **get\_student\_grades**

Procedure gives us the status of a student if he Failed or succeeded in the exam and got the courses degree for this student by his id .

### 5. **-get\_questions**

To get the question of a specific course by course\_id.

### 6. **add\_question**

Procedure for adding questions to the questions table by instructor and the instructor indicates the course to put these questions on it.

## **7. Update\_question**

Procedure for update questions to the questions table by instructor and the instructor indicates the course to put these questions on it.

## **8. insert\_answers**

Procedure for insert answers of student on a specific exam to table student\_answers

# **System triggers:**

## **1. Insert student grade after check**

Trigger to calculate grade of each student after insert student answers to student\_answer Table and assign this grade for each student in table st\_course.

## **2. Select\_exam\_student**

Trigger to assign students for each exam when creating the exam.

## **3. Trg\_get\_student\_inserted**

Trigger to get the student who inserted with student ID and record it in the Audit table .

## **4. Trg\_get\_student\_updated**

Trigger to get the all updated events in the student record by student ID.

## **5. Trg\_get\_student\_deleted After**

Trigger to record the student who deleted his ID in the Audit table.

## System users:


Role	Username	Password	permission
<b>Admin</b>	Admin	Admin	all
<b>Student</b>	ST_samy_Mostafa ST_Dalia_Mansour	111 111	know if he has exam or not from table exam. execute get_student_grades to see his grade in each course.
<b>Instructor</b>	INS_Malek_Hassan INS_Amira_Kamal	111 111	Can make exam , add question table and others
<b>Training Manager</b>	TRA_Mohamed_Ibrahem TRA_Hazem_Rashed	111 111	Insert and update tables(branch, intake, department, track, student)

SSRS :

Design Preview

student id  password  [View Report](#)

1 of 1 100% Find Next


 **show student exams**

Exam name	start time	end time
Web Services	3/5/2024 10:00:00 AM	3/15/2024 11:00:00 AM
Cyber Security	3/5/2024 10:00:00 AM	3/15/2024 12:00:00 PM
Web Services	4/13/2024 10:00:00 AM	4/13/2024 12:00:00 PM

Design Preview

student id  password  [View Report](#)

1 of 1 100% Find Next

 **Hello Dalia Mansour this is your Grades**

St name	course name	grade	status
Dalia Mansour	OOP	50	Faild
Dalia Mansour	Java	60	successed
Dalia Mansour	C++	40	Faild
Dalia Mansour	Sql Server	50	Faild
Dalia Mansour	Oracle	70	successed
Dalia Mansour	Web Services	80	successed
Dalia Mansour	Asp.net	80	successed
Dalia Mansour	Unix	90	successed
Dalia Mansour	Windows XP	60	successed
Dalia Mansour	Photoshop	30	Faild
Dalia Mansour	Cyber Security	50	Faild
Dalia Mansour	XML		Faild




Design Preview

ins id  password  [View Report](#)

course id

1 of 1 100%


 **The students corrective in C++ course**

St id	St name	course name	Track name
13	Magdy Hassan	C++	BI
18	Tarek Mansour	C++	BI
2	Amira Ibrahim	C++	BI
4	Dalia Mansour	C++	BI
7	Gamal Abdelaziz	C++	BI
1	samy Mostafa	C++	BI
6	Farah Ali	C++	BI

Design Preview

exam id  [View Report](#)

1 of 1 100%


 **Exam question**

question	type	Q_degree	correct answer
The ADD command is used to enter one row of data or to add multiple rows as a result of a query.	t/f	10	FALSE
A SELECT statement within another SELECT statement and enclosed in square brackets ([...]) is called a subquery.	t/f	10	FALSE
There is an equivalent join expression that can be substituted for all subquery expressions.	t/f	10	FALSE
A dynamic view is one whose contents materialize when referenced.	t/f	10	TRUE
Which of the following is not a class of constraint in SQL Server?	mcq	10	NULL
Which of the reasons will force you to use the XML data model in SQL Server?	mcq	10	All of the Mentioned
Which of the following feature of SQL Server was used before XML technology for semi structured data?	mcq	10	Stored Procedure
Exception handling is possible in SQL Server using _____	mcq	10	THROW
DML triggers in SQL Server is applicable to _____	mcq	10	All of the mentioned
User defined function in SQL Server can return _____	mcq	10	All of the mentioned

Design Preview

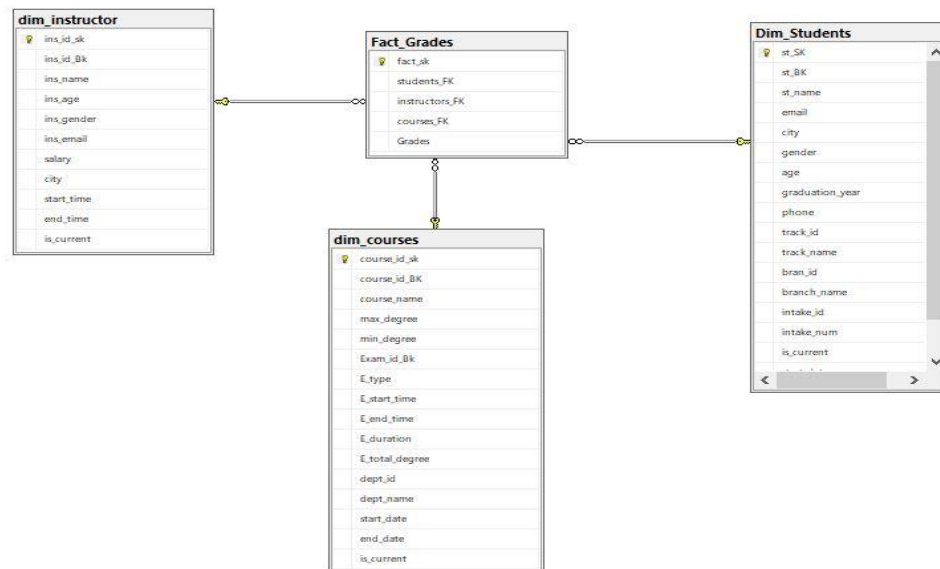
branch id 2View Report

1 of 2 ? 100%

 **students information in this branch**

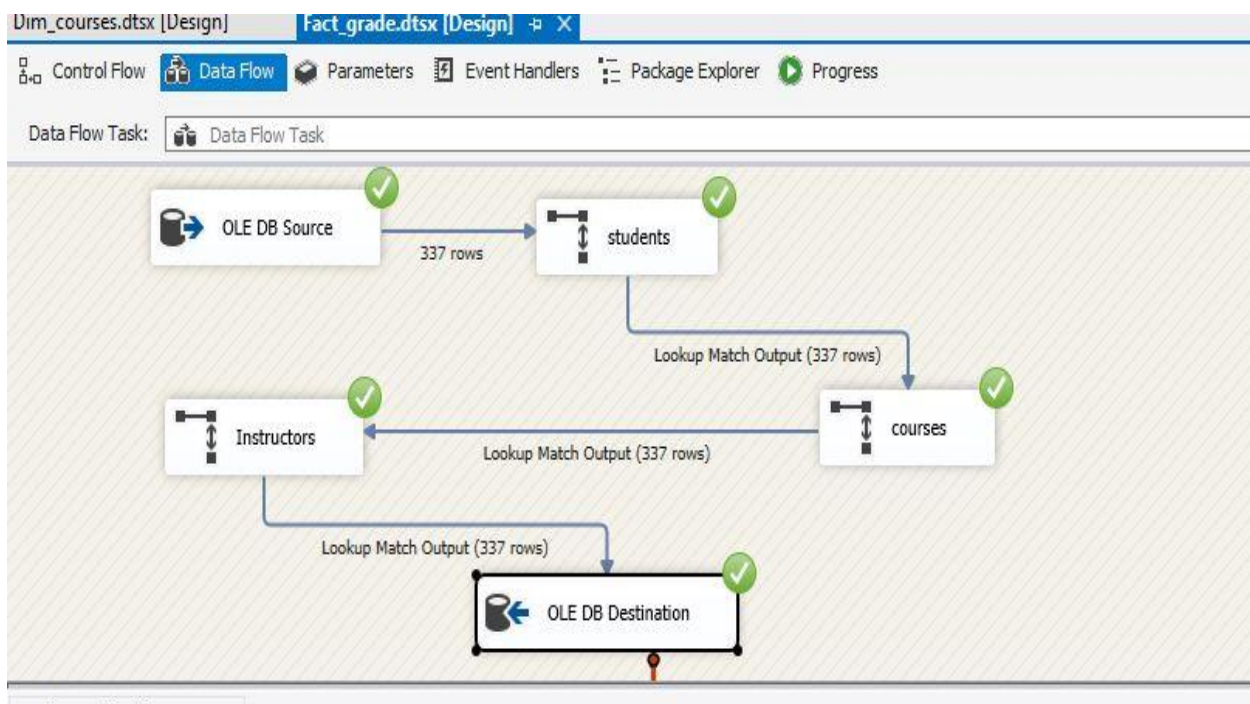
st id	st name	email	city	st gender	st age	phone
8	Hala Mahmoud	hala.mahmoud@yahoo.com	Hurghada	Female	28	1124839234
9	Ibrahim Salah	ibrahim.salah@yahoo.com	Mansoura	Male	25	1038901234
10	Jihan Kamal	jihan.kamal@yahoo.com	Port Said	Female	25	1249012345
11	Kareem Abdelrahman	kareem.abdelrahman@yahoo.com	Sohag	Male	27	1014357351
12	Laila Ahmed	laila.ahmed@yahoo.com	Assiut	Female	29	1140123456
13	Magdy Hassan	magdy.hassan@yahoo.com	Zagazig	Male	31	1237538527
31	Karima Abdelhamid	karima.abdelhamid@yahoo.com	Luxor	Female	25	1024567890
32	Layla Soliman	layla.soliman@yahoo.com	Hurghada	Female	25	1125678901
33	Magdi Saleh	magdi.saleh@yahoo.com	Alexandria	Male	25	1236789012
34	Noura Saad	noura.saad@yahoo.com	Giza	Female	25	1137890123
35	Osman Mohamed	osman.mohamed@yahoo.com	Cairo	Male	26	1124839234
36	Rasha El-Sayed	rasha.elsayed@yahoo.com	Mansoura	Female	25	1038901234
37	Sameera Ali	sameera.ali@yahoo.com	Port Said	Female	25	1249012345

## DWH Schema:

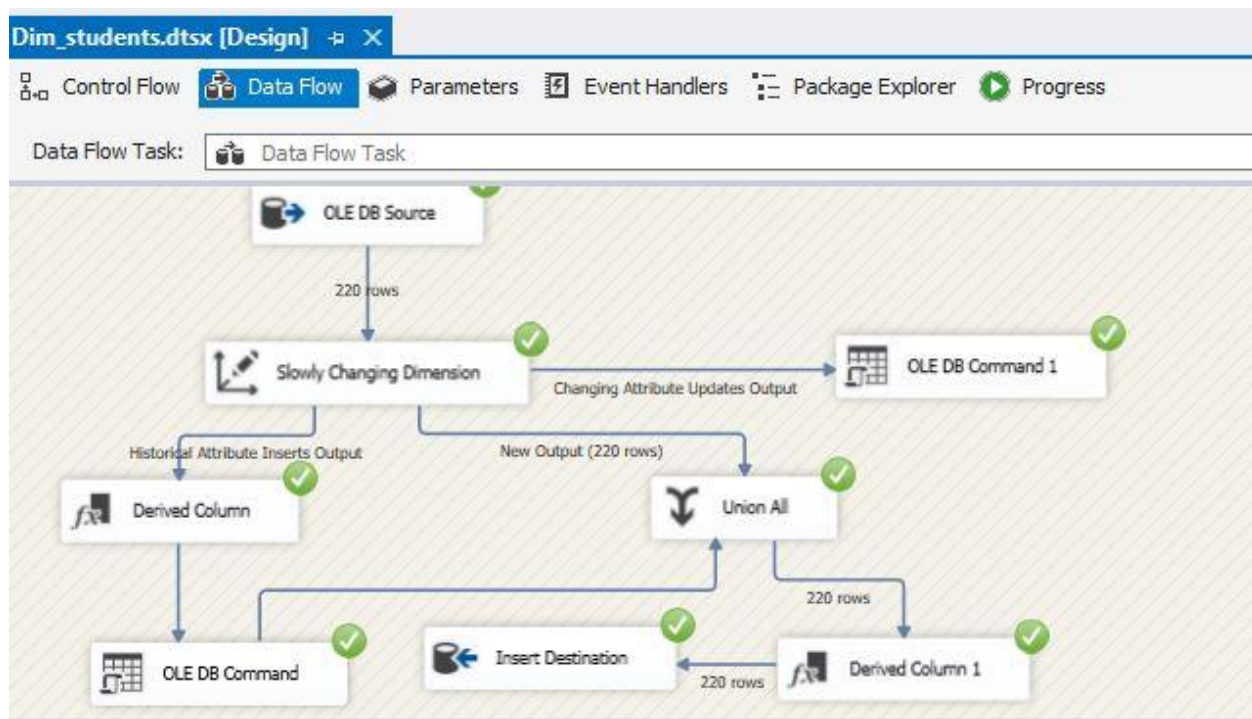


## SSIS :

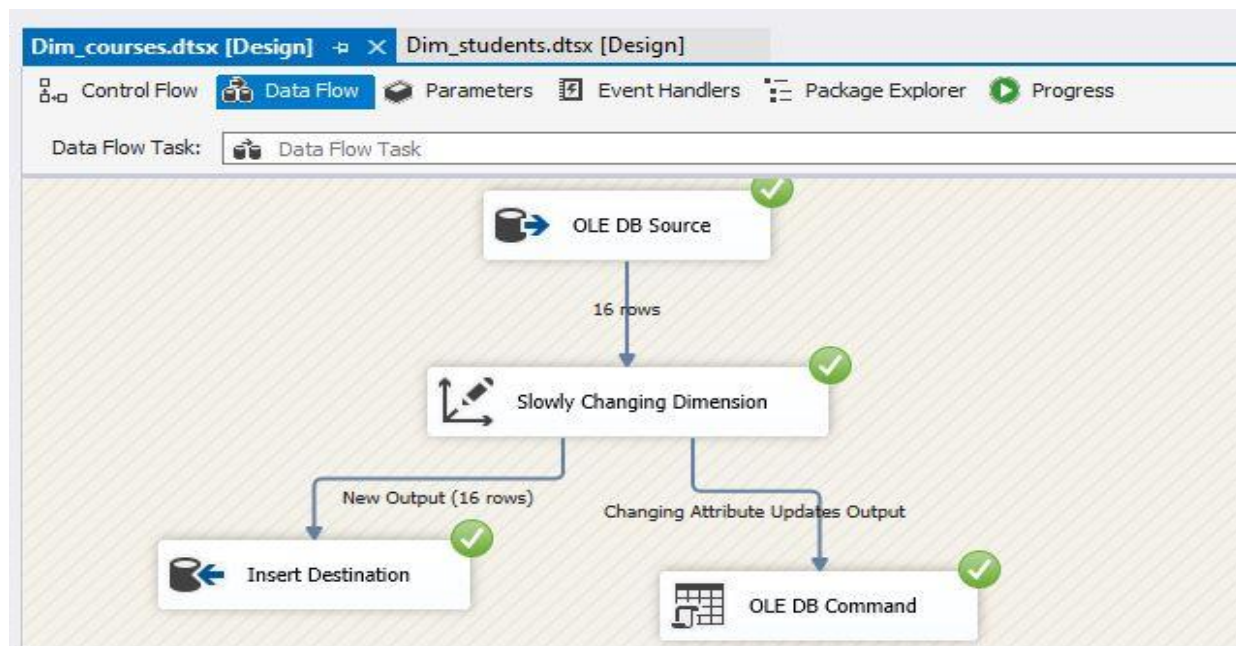
### Fact grades



## Dimension students

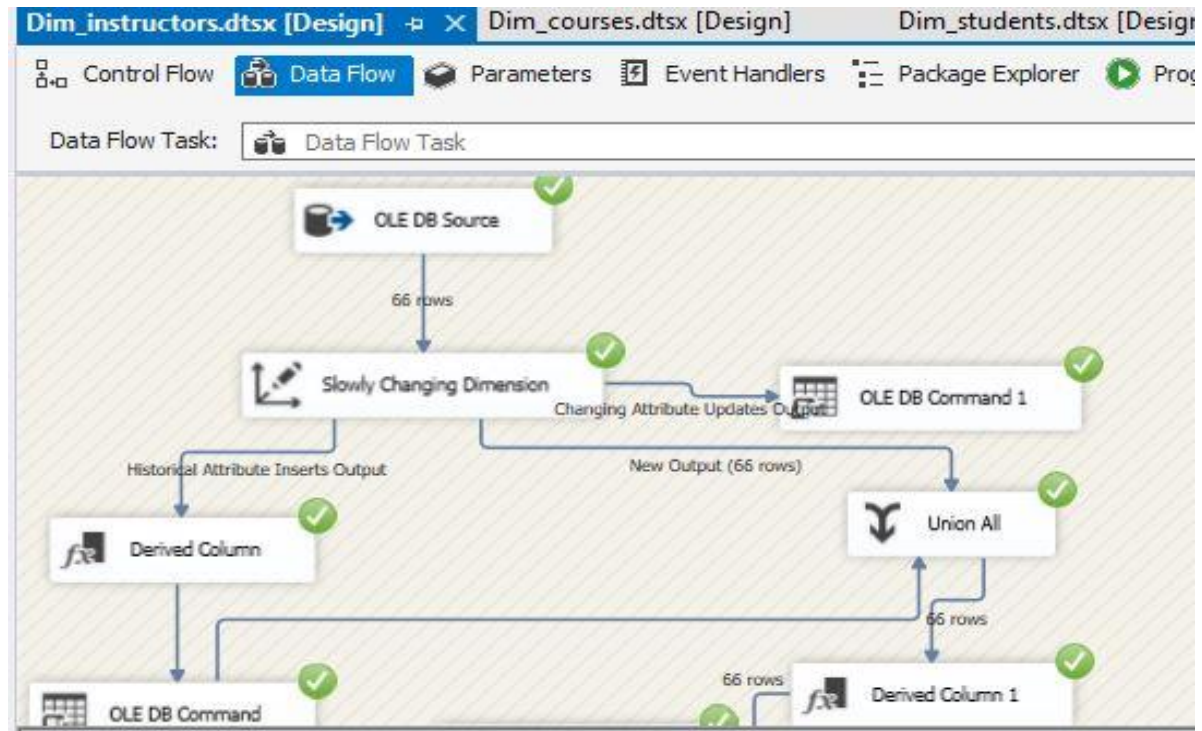


## Dimension courses





## Dimension instructors



# Creation of DWH:

## Dimension Courses

```
USE [Examination_system_DWH]
GO

/***** Object: Table [dbo].[dim_courses]    Script Date: 3/13/2024 9:17:25 AM *****/
SET ANSI_NULLS ON
GO

SET QUOTED_IDENTIFIER ON
GO

:CREATE TABLE [dbo].[dim_courses](
    [course_id_sk] [int] IDENTITY(1,1) NOT NULL,
    [course_id_Bk] [int] NULL,
    [course_name] [nvarchar](50) NULL,
    [max_degree] [int] NULL,
    [min_degree] [int] NULL,
    [Exam_id_Bk] [int] NULL,
    [E_type] [nvarchar](20) NULL,
    [E_start_time] [datetime] NULL,
    [E_end_time] [datetime] NULL,
    [E_duration] [int] NULL,
    [E_total_degree] [int] NULL,
    [dept_id] [int] NULL,
    [dept_name] [nvarchar](20) NULL,
    [start_date] [datetime] NULL,
    [end_date] [datetime] NULL,
    [is_current] [int] NULL,
PRIMARY KEY CLUSTERED
(
    [course_id_sk] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON
) ON [PRIMARY]
GO
```

## Dimension instructors

```
USE [Examination_system_DWH]
GO

/***** Object: Table [dbo].[dim_instructor]    Script Date: 3/13/2024 9:19:31 AM *****/
SET ANSI_NULLS ON
GO

SET QUOTED_IDENTIFIER ON
GO

:CREATE TABLE [dbo].[dim_instructor](
    [ins_id_sk] [int] IDENTITY(1,1) NOT NULL,
    [ins_id_Bk] [int] NULL,
    [ins_name] [nvarchar](100) NULL,
    [ins_age] [int] NULL,
    [ins_gender] [nvarchar](70) NULL,
    [ins_email] [nvarchar](max) NULL,
    [salary] [int] NULL,
    [city] [nvarchar](100) NULL,
    [start_time] [datetime] NULL,
    [end_time] [datetime] NULL,
    [is_current] [int] NULL,
PRIMARY KEY CLUSTERED
(
    [ins_id_sk] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
GO
```

## Dimension students

```
USE [Examination_system_DWH]
GO

/***** Object: Table [dbo].[Dim_Students]    Script Date: 3/13/2024 9:20:09 AM *****/
SET ANSI_NULLS ON
GO

SET QUOTED_IDENTIFIER ON
GO

CREATE TABLE [dbo].[Dim_Students](
    [st_SK] [int] IDENTITY(1,1) NOT NULL,
    [st_BK] [int] NULL,
    [st_name] [nvarchar](300) NULL,
    [email] [nvarchar](400) NULL,
    [city] [nvarchar](100) NULL,
    [gender] [nvarchar](100) NULL,
    [age] [int] NULL,
    [graduation_year] [int] NULL,
    [phone] [varchar](50) NULL,
    [track_id] [int] NULL,
    [track_name] [nvarchar](20) NULL,
    [bran_id] [int] NULL,
    [branch_name] [nvarchar](50) NULL,
    [intake_id] [int] NULL,
    [intake_num] [nvarchar](50) NULL,
    [is_current] [int] NULL,
    [start_date] [datetime] NULL,
    [end_date] [datetime] NULL,
    PRIMARY KEY CLUSTERED
    (
        [st_SK] ASC
    )WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON
    [ON] [PRIMARY]
GO
```

## Fact Grades

```
USE [Examination_system_DWH]
GO

/***** Object: Table [dbo].[Fact_Grades]    Script Date: 3/13/2024 9:21:39 AM *****/
SET ANSI_NULLS ON
GO

SET QUOTED_IDENTIFIER ON
GO

CREATE TABLE [dbo].[Fact_Grades](
    [fact_sk] [int] IDENTITY(1,1) NOT NULL,
    [students_FK] [int] NULL,
    [instructors_FK] [int] NULL,
    [courses_FK] [int] NULL,
    [Grades] [int] NULL,
    PRIMARY KEY CLUSTERED
    (
        [fact_sk] ASC
    )WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON
    [ON] [PRIMARY]
GO

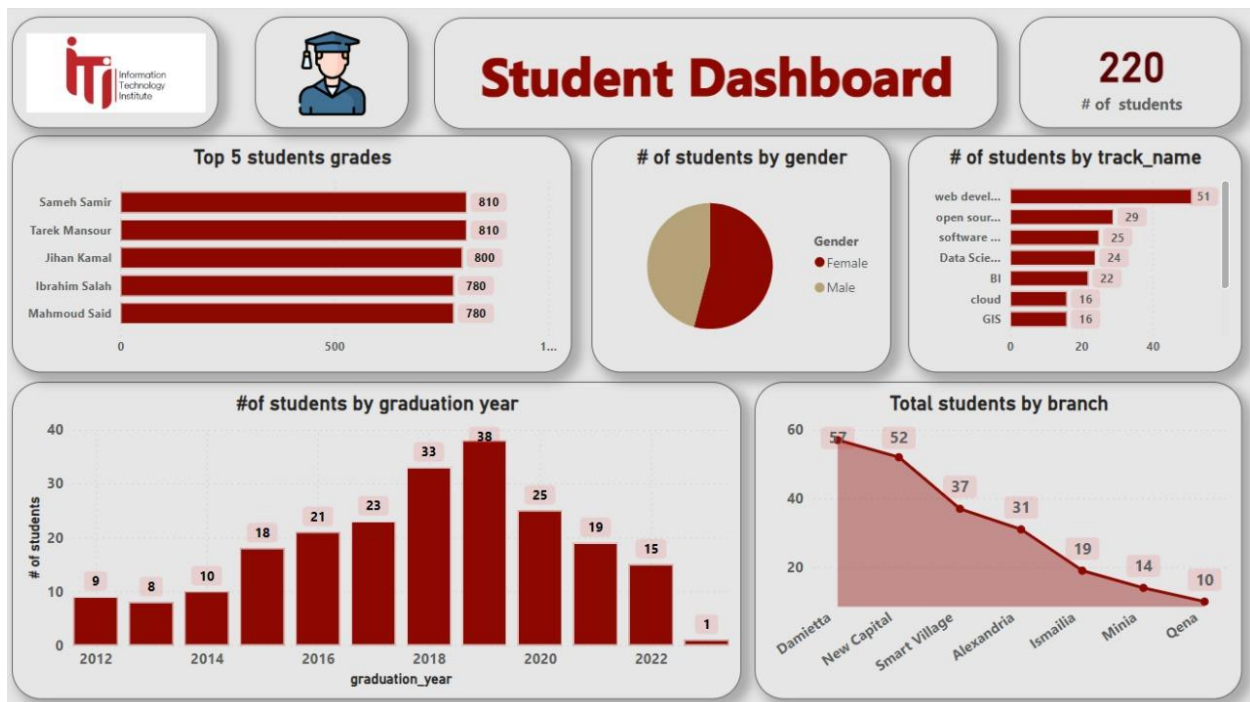
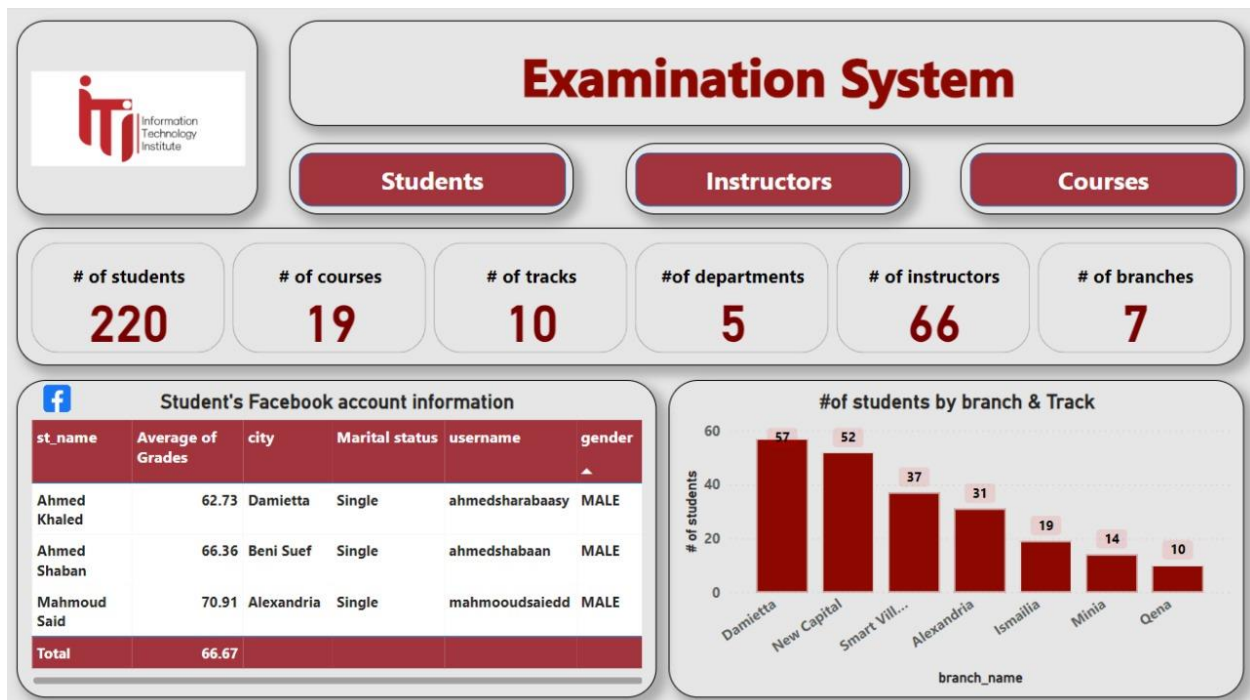
ALTER TABLE [dbo].[Fact_Grades] WITH CHECK ADD CONSTRAINT [FK_Fact_Grades_dim_courses] FOREIGN KEY([courses_FK])
REFERENCES [dbo].[dim_courses] ([course_id_sk])
GO

ALTER TABLE [dbo].[Fact_Grades] CHECK CONSTRAINT [FK_Fact_Grades_dim_courses]
GO

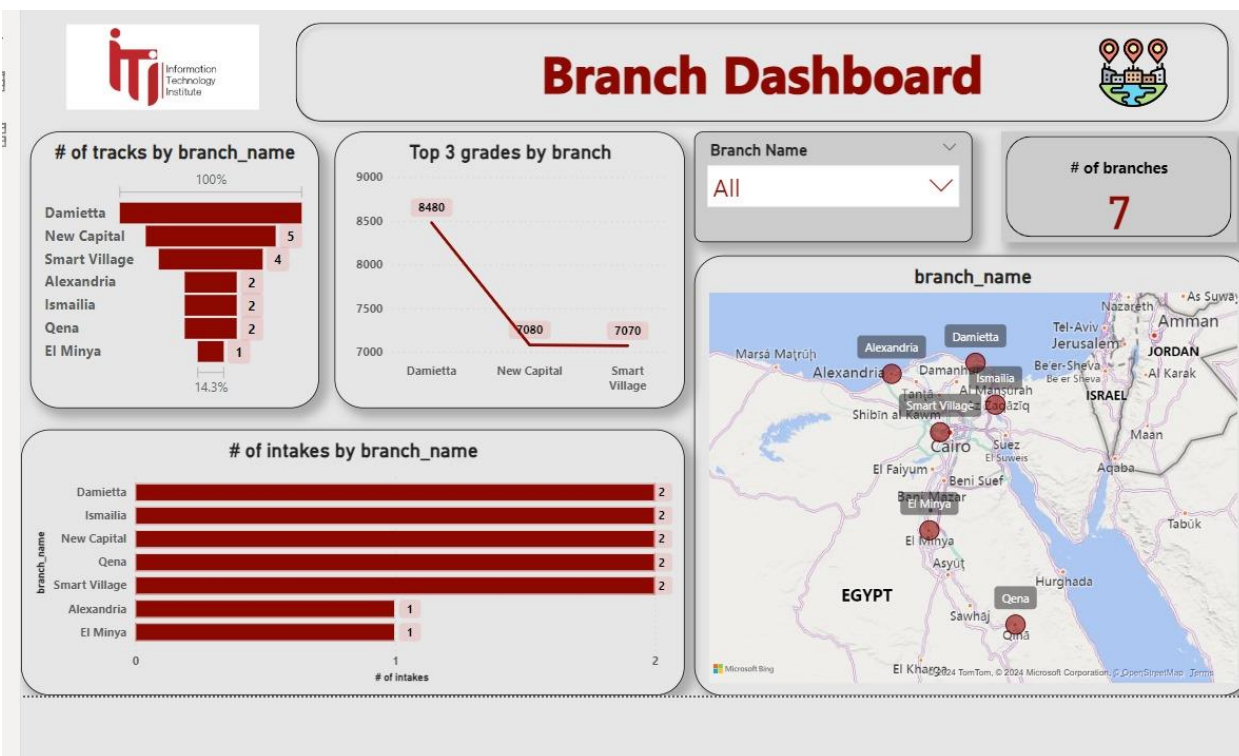
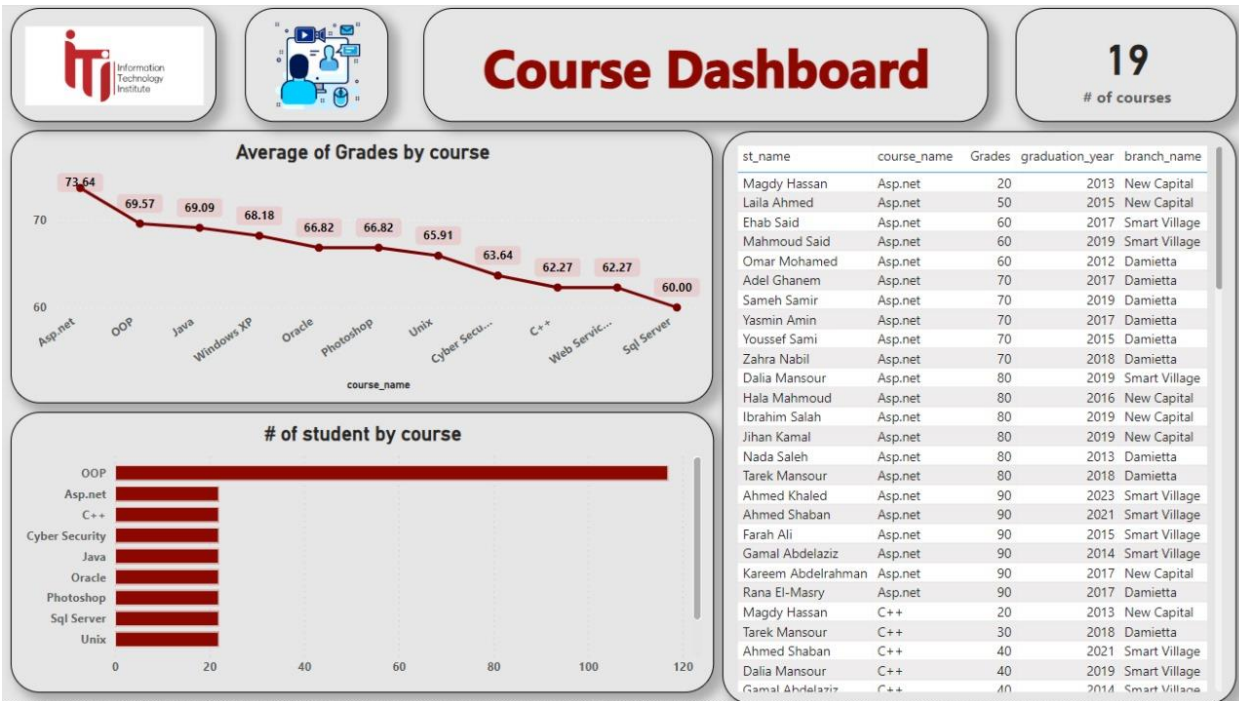
ALTER TABLE [dbo].[Fact_Grades] WITH CHECK ADD CONSTRAINT [FK_Fact_Grades_dim_instructor] FOREIGN KEY([instructors_FK])
REFERENCES [dbo].[dim_instructor] ([ins_id_sk])
GO

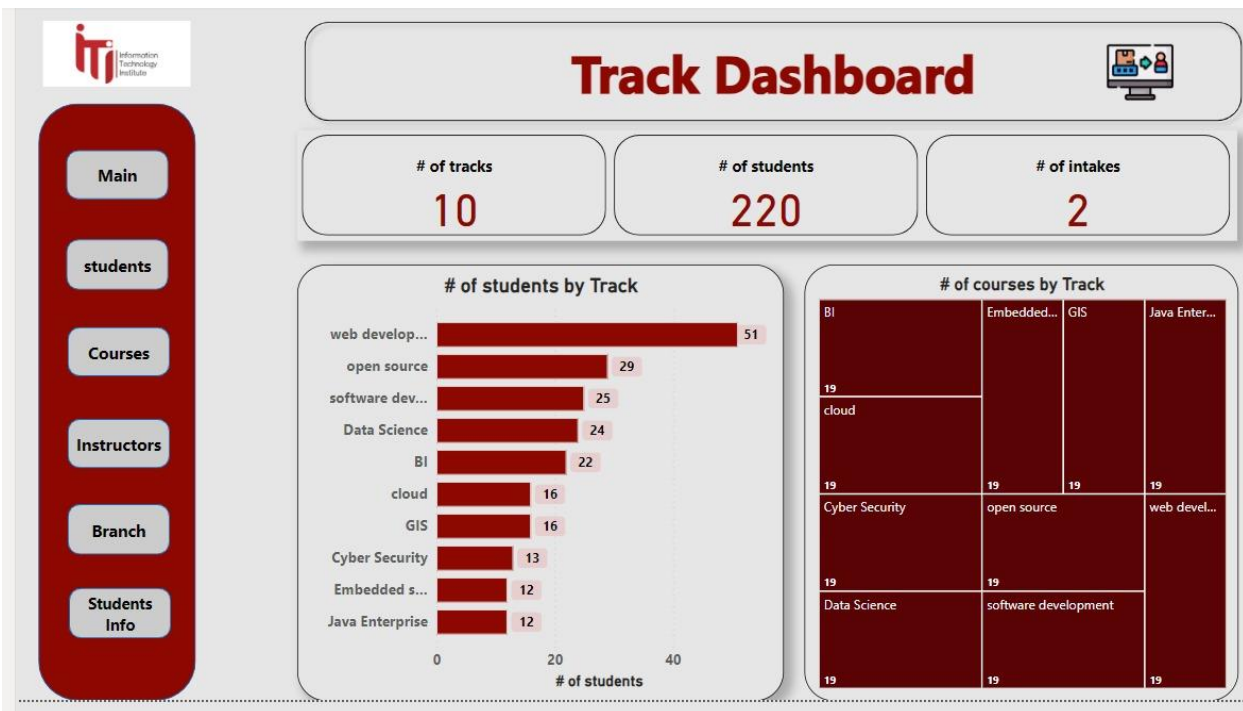
ALTER TABLE [dbo].[Fact_Grades] CHECK CONSTRAINT [FK_Fact_Grades_dim_instructor]
GO
```


## Dashboard:











## Student Information

Name	City	Email	phone	Track	Branch	Intake	dept_name
Abdelrahman Abdelaziz	Zagazig	abdelrahman.abdelaziz@yahoo.com	1041234567	open source	Damietta	Intake43_Round2	Software Developer
Adel Ghanem	Suez	adel.ghanem@yahoo.com	1278901234	BI	Damietta	Intake43_Round2	Content Development
Adel Ghanem	Suez	adel.ghanem@yahoo.com	1278901234	BI	Damietta	Intake43_Round2	Digital Marketing
Adel Ghanem	Suez	adel.ghanem@yahoo.com	1278901234	BI	Damietta	Intake43_Round2	E-Learning
Adel Ghanem	Suez	adel.ghanem@yahoo.com	1278901234	BI	Damietta	Intake43_Round2	Information System
Adel Ghanem	Suez	adel.ghanem@yahoo.com	1278901234	BI	Damietta	Intake43_Round2	Software Developer
Ahmad Abdelkader	Sharm El Sheikh	ahmad.abdelkader@gmail.com	1137890123	web development	New Capital	Intake43_Round1	Software Developer
Ahmed Azzam	Alexandria	ahmed.azzam@gmail.com	1236789012	cloud	Smart Village	Intake43_Round2	Software Developer
Ahmed Hassan	Banha	ahmed.hassan@yahoo.com	1249012345	web development	New Capital	Intake43_Round2	Software Developer
Aida Nabil	Shibin El Kom	aida.nabil@yahoo.com	1014357351	web development	New Capital	Intake43_Round2	Software Developer
Ali Zakzouq	cairo	ali.zakzouq@gmail.com	1212345678	web development	Damietta	Intake43_Round1	Software Developer
Amina Khalil	Qena	amina.khalil@yahoo.com	1252345678	open source	New Capital	Intake43_Round2	Software Developer
Amira Ibrahim	alex	amira.ibrahim@yahoo.com	01111111222	BI	Smart Village	Intake43_Round1	Content Development
Amira Ibrahim	alex	amira.ibrahim@yahoo.com	01111111222	BI	Smart Village	Intake43_Round1	Digital Marketing
Amira Ibrahim	alex	amira.ibrahim@yahoo.com	01111111222	BI	Smart Village	Intake43_Round1	E-Learning
Amira Ibrahim	alex	amira.ibrahim@yahoo.com	01111111222	BI	Smart Village	Intake43_Round1	Information System
Amira Ibrahim	alex	amira.ibrahim@yahoo.com	01111111222	BI	Smart Village	Intake43_Round1	Software Developer
Aser Saad	Kafr El Sheikh	aser.saad@gmail.com	1070123456	cloud	Smart Village	Intake43_Round2	Software Developer
Aya Elmiligy	Suez	aya.elmiligy@gmail.com	1212345678	cloud	Smart Village	Intake43_Round2	Software Developer
Bahia Kamal	Banha	bahia.kamal@yahoo.com	1045462746	open source	Smart Village	Intake43_Round1	Software Developer
Bakr Ghanem	Kafr El Sheikh	bakr.ghanem@yahoo.com	1140123456	web development	New Capital	Intake43_Round2	Software Developer
Basma Hamdi	Luxor	basma.hamdi@yahoo.com	1153456789	open source	New Capital	Intake43_Round1	Software Developer
Bassem Hassan	Alexandria	bassem.hassan@yahoo.com	1204593829	BI	Smart Village	Intake43_Round1	Content Development
Bassem Hassan	Alexandria	bassem.hassan@yahoo.com	1204593829	BI	Smart Village	Intake43_Round1	Digital Marketing
Bassem Hassan	Alexandria	bassem.hassan@yahoo.com	1204593829	BI	Smart Village	Intake43_Round1	E-Learning
Bassem Hassan	Alexandria	bassem.hassan@yahoo.com	1204593829	BI	Smart Village	Intake43_Round1	Information System
Bassem Hassan	Alexandria	bassem.hassan@yahoo.com	1204593829	BI	Smart Village	Intake43_Round1	Software Developer
Cyrus Farouk	Shibin El Kom	cyrus.farouk@yahoo.com	1179012345	open source	Smart Village	Intake43_Round1	Software Developer
Dalia Mansour	Giza	dalia.mansour@yahoo.com	1024567890	BI	Smart Village	Intake43_Round1	Content Development