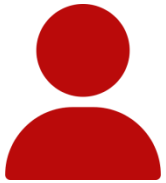
Information Technology Institute

ITI Automated Examination Management System

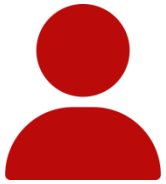
Tanta Branch

Team Members



Ahmed Khaled

Abdelaziz Ragab



Areej Fathy

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Overview

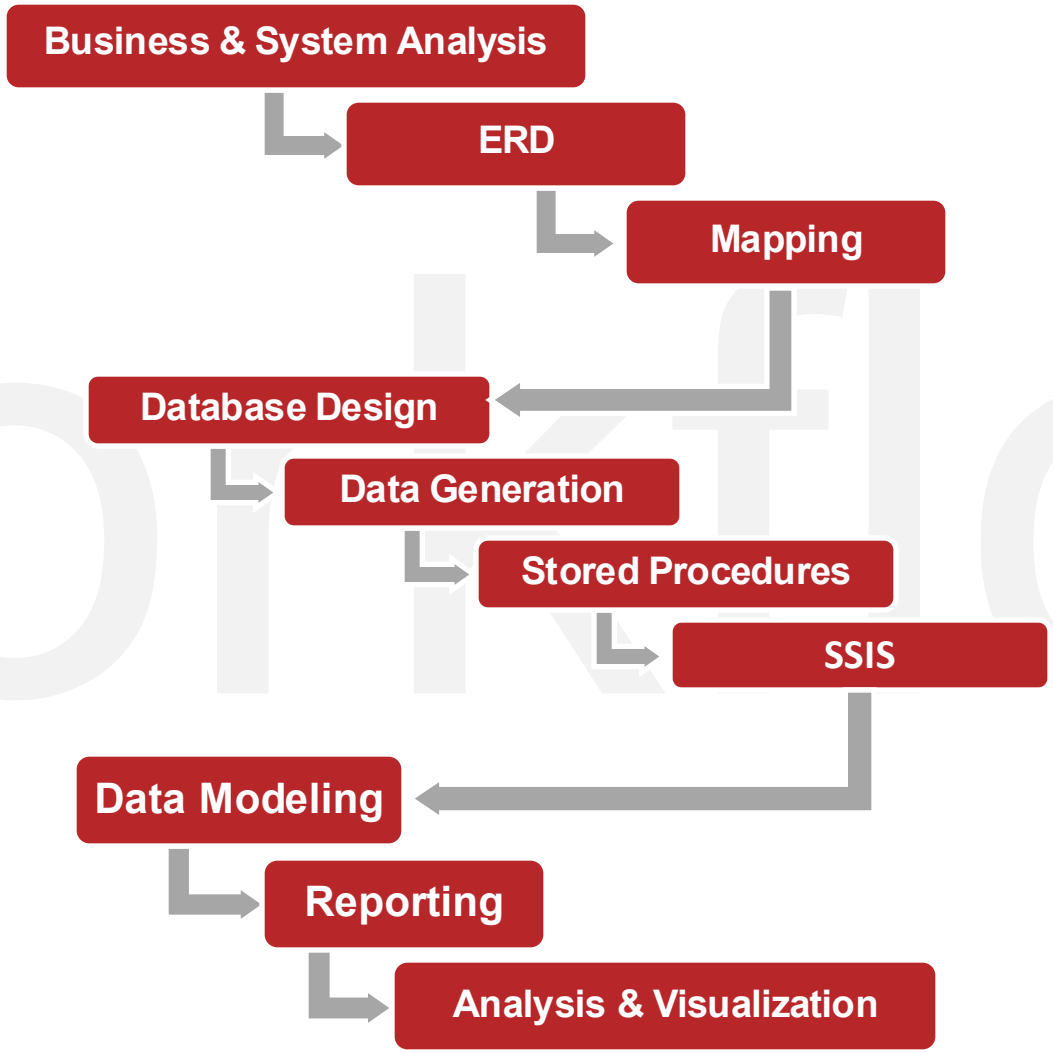
➢ About System:

- This project introduces a complete Examination Management System for ITI.
- It manages students, courses, questions, exams, and answers — aiming to streamline exam administration and enhance performance tracking.

➢ Technology Tools:

- **SQL Server** & **SSMS** for database design and stored procedures
- **Redgate** & **Excel** for data generation and testing
- **SSIS** to build ETL pipelines to transfer data from the database to the data warehouse model.
- **SSRS** for building dynamic reports
- **Power BI** for interactive analytics dashboards.

Project Workflow



Business & System Analysis

- **Business Need:**
  - Automate and streamline exam processes at ITI to reduce errors and save time.
- **System Goals:**
  - Manage exams, students, courses, and results
  - Support multiple user roles
  - Enable real-time reporting and analysis
- **Key Functions:**
  - Question and exam generation
  - Answer correction
  - Student and instructor management
  - SSRS reports & Power BI dashboards
- **Stakeholders:**
  - Students, Instructors, Department Managers, ITI Admins

Software Tools

draw.io

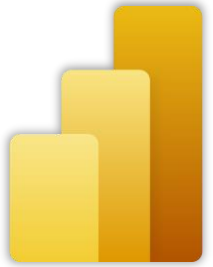
Database Modeling (ERD & Mapping)

ChatGPT

Excel

Data Generation

Power BI Report Builder



Power BI

Data Analysis & Visualization

SQL Server

SSMS

Database Management

On-Premises Data Gateway

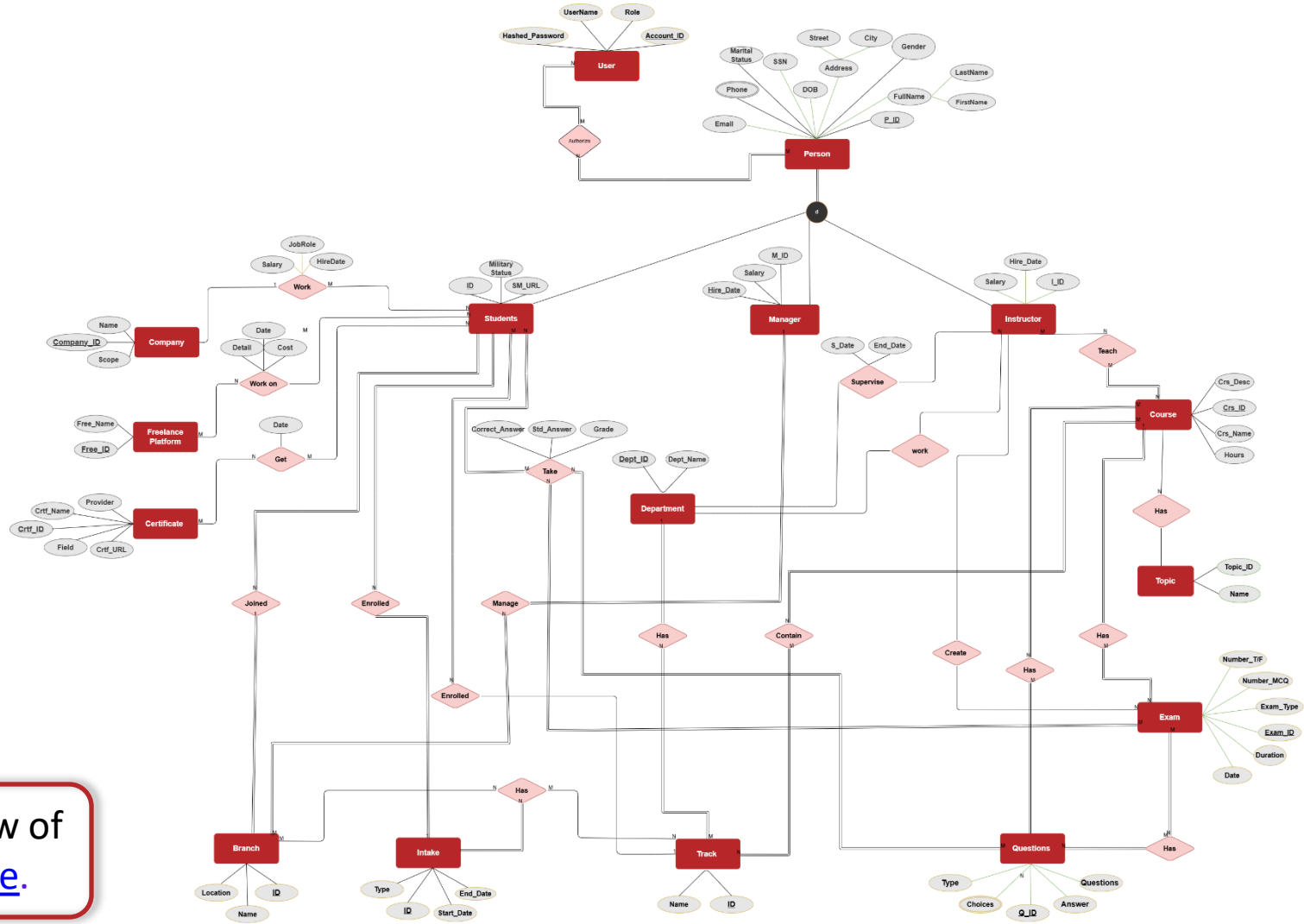
SSIS

Data Integration

SSRS

Reporting

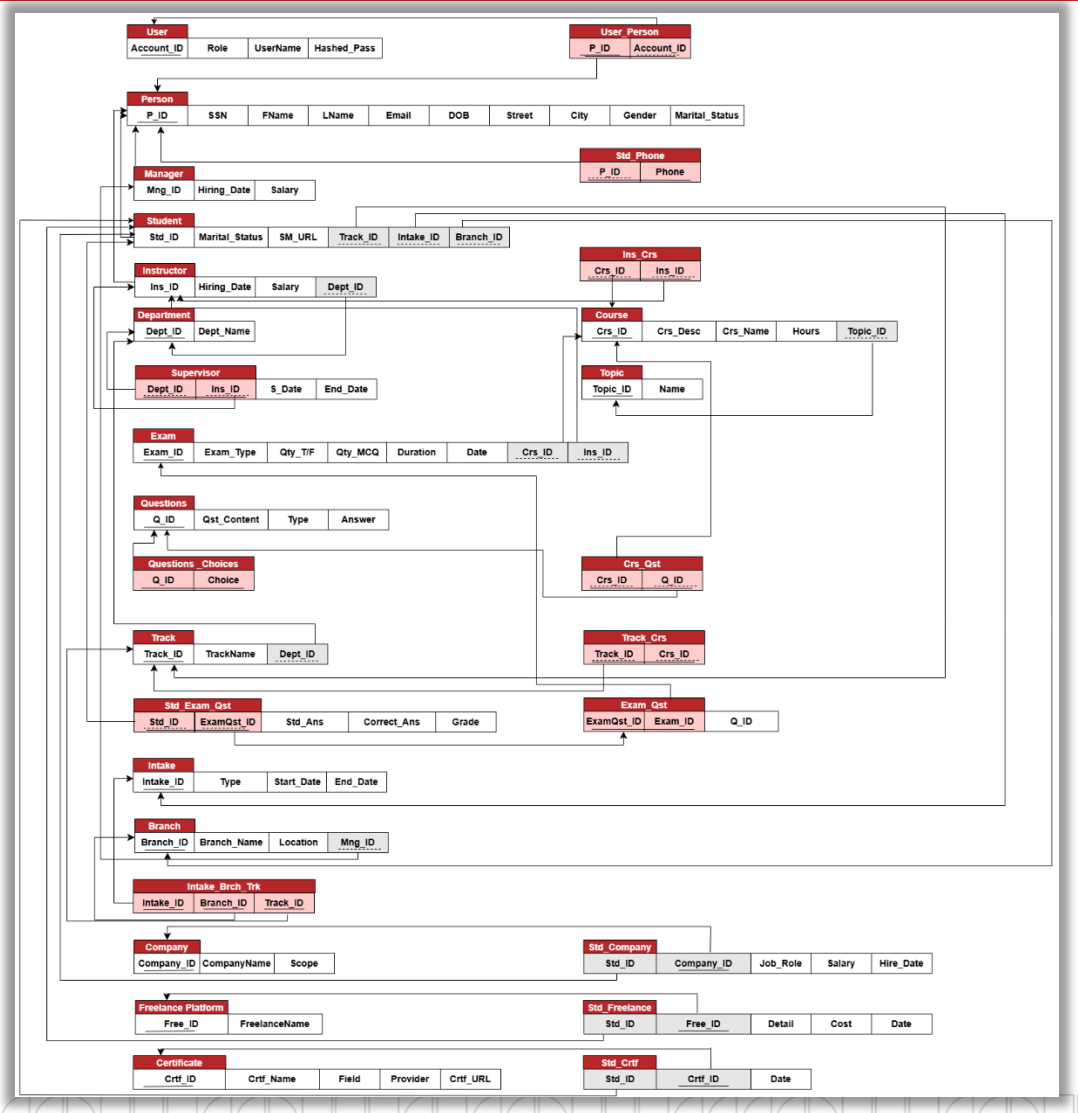
Entity Relationship Diagram (ERD)



draw.io

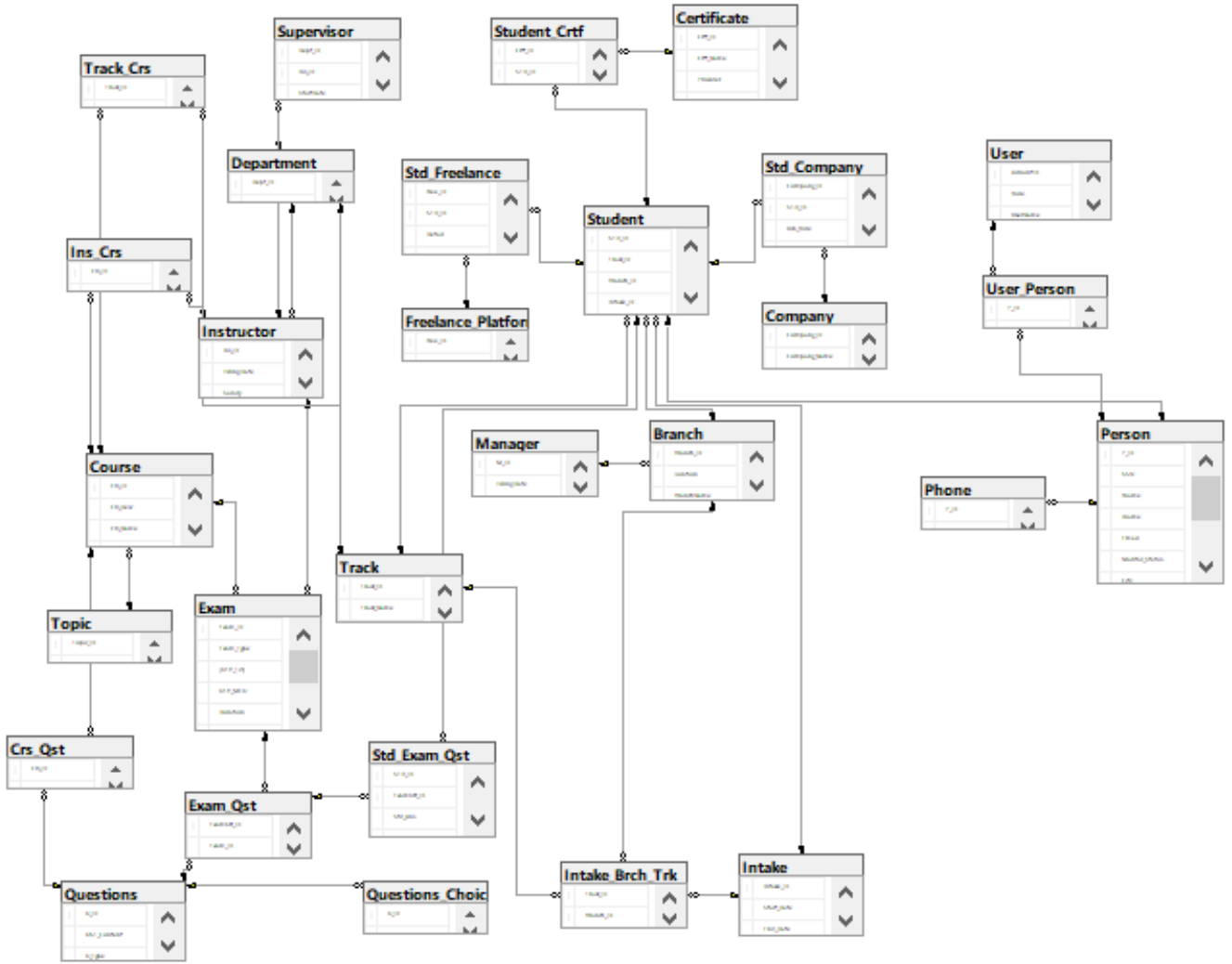
For a higher-quality view of the diagram, [click here](#).

Mapping



For a higher-quality view of the diagram, [click here](#).

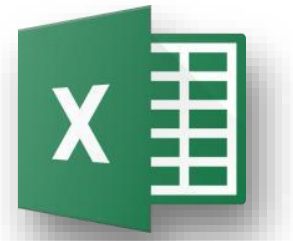
Database Design




```
CREATE TABLE [dbo].[Branch](
    [Branch_ID] [int] IDENTITY(1,1) NOT NULL,
    [Location] [nvarchar](255) NOT NULL,
    [BranchName] [nvarchar](255) NOT NULL,
    [M_ID] [int] NOT NULL,
PRIMARY KEY CLUSTERED

/****** Object:  Table [dbo].[Certificate]    ******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Certificate](
    [Crtf_ID] [int] IDENTITY(1,1) NOT NULL,
    [Crtf_Name] [nvarchar](255) NOT NULL,
    [Provider] [nvarchar](255) NOT NULL,
    [Field] [nvarchar](255) NULL,
    [Crtf_URL] [nvarchar](255) NULL,
PRIMARY KEY CLUSTERED

/****** Object:  Table [dbo].[Company]    ******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
CREATE TABLE [dbo].[Company](
    [Company_ID] [int] IDENTITY(1,1) NOT NULL,
    [Company_Name] [nvarchar](255) NOT NULL,
    [Scope] [nvarchar](255) NULL,
PRIMARY KEY CLUSTERED
(
```

Data Generation

- **Purpose:**
  - To populate the system with realistic test data for development, testing, and reporting.
- **Tools Used:**
  - **Microsoft Excel** for generating sample data structures and formatting
  - **Redgate SQL Data Generator** for bulk data creation and inserting into SQL Server
  - Manual SQL Scripts for custom records (e.g., True/False and MCQ questions)
- **Generated Data Includes:**
  - Students, Instructors, Courses, Topics
  - Questions & Choices (MCQ and T/F)
  - Exams & Student Answers
  - Departments, Tracks, and Branches



Excel

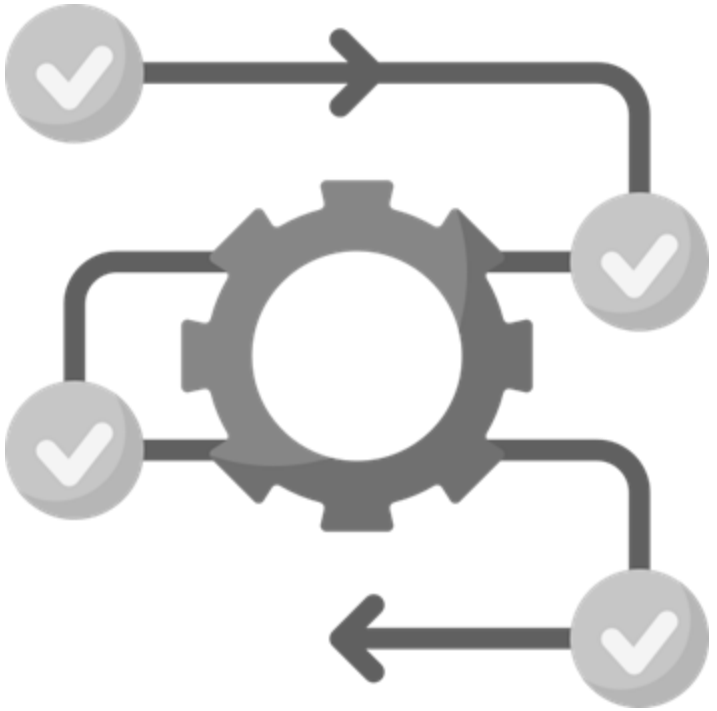
Chat GPT

Redgate

Data Generation

Stored Procedures

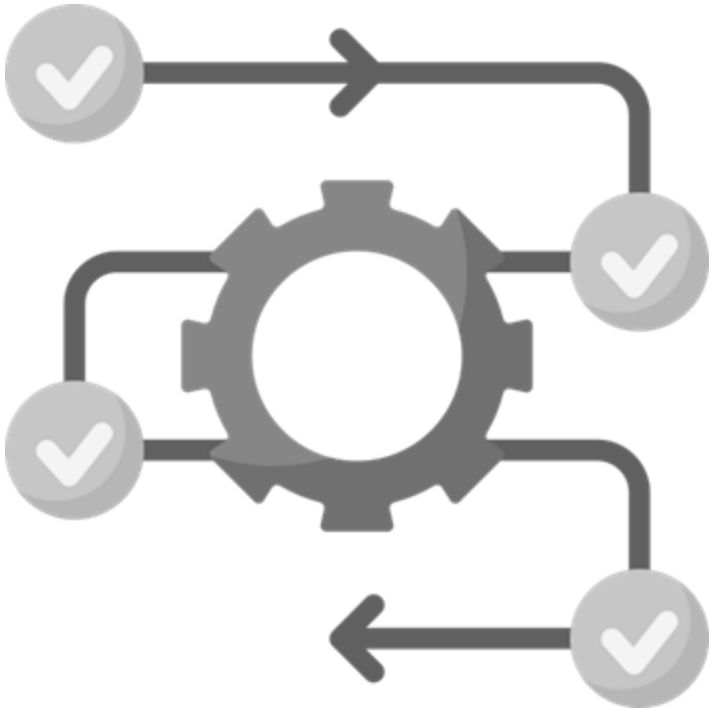
- **Purpose:**
  - Encapsulate database logic to handle core operations securely and efficiently.



- **Main Categories:**
  - **CRUD Operations:**
    - Insert, update, delete, and retrieve records for key entities: Person, Student, Instructor, Course, Topic, Exam, etc.
  - **Exam Management:**
    - GenerateExam: Generates exam questions from the question bank
    - Exam_ans: Records student answers
    - Exam_Correction: Compares student answers to correct ones and calculates grades
  - **Validation & Error Handling:**
    - Each SP includes input validation and meaningful error messages
    - Use of TRY...CATCH, IF EXISTS, and custom messages for feedback

Stored Procedures (Cont'd)

- **Sample Procedures Implemented:**
  - Person_Insert_SP, Person_Select_SP , Topic_Update_SP, Topic_Delete_SP
  - Get_Exam_Questions_Choices_Report (for SSRS)
  - Get_Student_Grades_Report (returns student score and result)
    - Insert, update, delete, and retrieve records for key entities: Person, Student, Instructor, Course, Topic, Exam, etc.
- **Benefits:**
  - Improves performance
  - Centralizes business logic
  - Enhances data integrity and security



Parameterized Dynamic SQL Stored Procedure

- Takes input parameters, dynamically constructs an SQL query, executes it, and handles errors using TRY...CATCH.

SELECT

```
CREATE PROC Person_Select_SP @P_ID int
as
BEGIN
    SET NOCOUNT ON;
    BEGIN TRY
        IF @P_ID IS NULL OR @P_ID <= 0
        BEGIN
            SELECT 'Invalid Person ID input.' AS Message;
            RETURN;
        END
        IF NOT EXISTS (SELECT 1 FROM Person WHERE [P_ID] = @P_ID)
        BEGIN
            SELECT 'Error: Person ID does not exist.' AS Message;
            RETURN;
        END

        select *
        from Person
        where P_ID = @P_ID
    END TRY
    BEGIN CATCH
        RAISERROR('An unexpected error occured.',16,1)
    END CATCH
END
```

Parameterized Dynamic SQL Stored Procedure

- Takes input parameters, dynamically constructs an SQL query, executes it, and handles errors using TRY...CATCH.

INSERT

```
CREATE PROC Person_Insert_SP @SSN INT,
                             @FName nvarchar(max),
                             @LName nvarchar(max),
                             @Email nvarchar(max),
                             @Marital nvarchar(max),
                             @City nvarchar(max),
                             @Street nvarchar(max),
                             @Gender nvarchar(max),
                             @BDate Date
as
BEGIN
    SET NOCOUNT ON;

    BEGIN TRY
        IF EXISTS (SELECT 1 FROM Person WHERE SSN = @SSN)
        BEGIN
            RAISERROR('Error: SSN already exists.',16,1);
            RETURN;
        END

        INSERT INTO  Person ([SSN],[Fname],[Lname],[Email],[Marital_Status],[City],[Street],[Gender],[Bdate])
        values (@SSN, @FName, @LName, @Email, @Marital, @City, @Street, @Gender, @BDate);

        DECLARE @NEWID INT = SCOPE_IDENTITY();

        SELECT 'Inserted successfully. New Person ID is ' + CAST(@NEWID AS NVARCHAR) AS Message;
    END TRY
    BEGIN CATCH
        SELECT 'Error: ' + ERROR_MESSAGE() AS Message;
        RETURN;
    END CATCH
END;
```

Parameterized Dynamic SQL Stored Procedure

- Takes input parameters, dynamically constructs an SQL query, executes it, and handles errors using TRY...CATCH.

UPDATE

```
CREATE PROC Topic_Update_SP @Topic_ID INT,
                            @Topic_Name nvarchar(max)
as
BEGIN
    SET NOCOUNT ON;
    BEGIN TRY
        IF @Topic_ID IS NULL OR @Topic_ID <= 0
        BEGIN
            SELECT 'Invalid Topic ID.' AS Message;
            RETURN;
        END
        IF NOT EXISTS (SELECT 1 FROM Topic WHERE Topic_ID = @Topic_ID)
        BEGIN
            SELECT 'No Topic with ID ' + CAST(@Topic_ID AS nvarchar) AS Message;
            RETURN;
        END

        UPDATE Topic
        set Topic_Name = @Topic_Name
        where Topic_ID = @Topic_ID

        SELECT 'Topic updated successfully.' AS Message;
        RETURN;
    END TRY

    BEGIN CATCH
        SELECT 'Error: ' + ERROR_MESSAGE() AS Message;
        RETURN;
    END CATCH
END
```

Parameterized Dynamic SQL Stored Procedure

- Takes input parameters, dynamically constructs an SQL query, executes it, and handles errors using TRY...CATCH.

DELETE

```
CREATE PROC Topic_Delete_SP @Topic_ID int
as
BEGIN
    SET NOCOUNT ON;
    BEGIN TRY
    IF @Topic_ID IS NULL OR @Topic_ID <= 0
    BEGIN
        SELECT 'Error: Invalid Topic ID input.' AS Message;
        RETURN;
    END
    IF NOT EXISTS (SELECT 1 FROM Topic WHERE Topic_ID = @Topic_ID)
    BEGIN
        SELECT 'Error: Topic ID does not exist.' AS Message;
        RETURN;
    END
    DELETE FROM Topic
    where Topic_ID = @Topic_ID;
    SELECT 'Topic deleted successfully.' AS Message;
    END TRY
    BEGIN CATCH
        SELECT 'Error: ' + ERROR_MESSAGE() AS Message;
        RETURN;
    END CATCH
END
```

Parameterized Dynamic SQL Stored Procedure

- Takes input parameters, dynamically constructs an SQL query, executes it, and handles errors using TRY...CATCH.

Exam Generation

```
create PROCEDURE [dbo].[GenerateExam]
    @Crs_ID INT,
    @Exam_Type VARCHAR(50),
    @Duration INT,
    @Exam_Date DATE,
    @Ins_ID INT,
    @Exam_ID INT OUTPUT
AS
BEGIN
    SET NOCOUNT ON;

    DECLARE @InstructorName NVARCHAR(100) = '';
    DECLARE @CourseName NVARCHAR(100) = '';
    DECLARE @ValidCourses NVARCHAR(MAX) = '';
    DECLARE @QTY_TF INT = 4;
    DECLARE @QTY_MCQ INT = 4;

    BEGIN TRY
        -- التحقق من وجود المدرس
        IF NOT EXISTS (SELECT 1 FROM Instructor WHERE Ins_ID = @Ins_ID)
        BEGIN
            DECLARE @InstructorList NVARCHAR(MAX);
            SELECT @InstructorList = STRING_AGG(CAST(Ins_ID AS NVARCHAR(10)), ', ')
            FROM Instructor;

            RAISERROR('Error: Instructor with ID %d does not exist. Available instructors: %s', 16, 1, @Ins_ID, @InstructorList);
            RETURN -1;
        END

        SELECT @InstructorName = Fname + ' ' + Lname
        FROM Person
        WHERE P_ID = @Ins_ID;

        -- التحقق من وجود الكورس
        IF NOT EXISTS (SELECT 1 FROM Course WHERE Crs_ID = @Crs_ID)
        BEGIN
            DECLARE @SampleCourses NVARCHAR(1000);
            SELECT TOP 10 @SampleCourses = STRING_AGG(CONVERT(NVARCHAR(10), Crs_ID) + ' - ' + Crs_Name, ', ')
            FROM Course;

            RAISERROR('Error: Course with ID %d does not exist. Sample courses: %s', 16, 1, @Crs_ID, @SampleCourses);
            RETURN -1;
        END
```

```
        SELECT @CourseName = Crs_Name FROM Course WHERE Crs_ID = @Crs_ID;

        -- التحقق من الربط بين المدرس والكورس
        IF NOT EXISTS (SELECT 1 FROM Ins_Crs WHERE Ins_ID = @Ins_ID AND Crs_ID = @Crs_ID)
        BEGIN
            SELECT @ValidCourses = STRING_AGG(CONVERT(NVARCHAR(10), c.Crs_ID) + ' - ' + c.Crs_Name, ', ')
            FROM Ins_Crs ic
            JOIN Course c ON ic.Crs_ID = c.Crs_ID
            WHERE ic.Ins_ID = @Ins_ID;

            RAISERROR('Error: Instructor %d (%s) is not assigned to course %d (%s). This instructor teaches: %s',
                    16, 1, @Ins_ID, @InstructorName, @Crs_ID, @CourseName, @ValidCourses);
            RETURN -1;
        END

        -- التحقق من توافر الأسئلة
        DECLARE @AvailableTF INT, @AvailableMCQ INT;

        SELECT @AvailableTF = COUNT(*)
        FROM Questions q
        INNER JOIN Crs_Qst cq ON q.Q_ID = cq.Q_ID
        WHERE cq.Crs_ID = @Crs_ID AND q.Q_Type = 'T/F';

        SELECT @AvailableMCQ = COUNT(*)
        FROM Questions q
        INNER JOIN Crs_Qst cq ON q.Q_ID = cq.Q_ID
        WHERE cq.Crs_ID = @Crs_ID AND q.Q_Type = 'MCQ';

        IF @AvailableTF < @QTY_TF OR @AvailableMCQ < @QTY_MCQ
        BEGIN
            RAISERROR('Error: Not enough questions for course %d (%s). Available: %d T/F, %d MCQ',
                    16, 1, @Crs_ID, @CourseName, @AvailableTF, @AvailableMCQ);
            RETURN -1;
        END

        BEGIN TRANSACTION;

        -- توليد رقم الامتحان
        SELECT @Exam_ID = ISNULL(MAX(Exam_ID), 0) + 1 FROM Exam;

        -- إدخال الامتحان
        INSERT INTO Exam (Exam_ID, Exam_Type, [QTY_T/F], QTY_MCQ, Duration, Date, Ins_ID, Crs_ID)
        VALUES (@Exam_ID, @Exam_Type, @QTY_TF, @QTY_MCQ, @Duration, @Exam_Date, @Ins_ID, @Crs_ID);
```

```
        -- اختيار وإدخال الأسئلة
        INSERT INTO Exam_Qst (Exam_ID, Q_ID)
        SELECT @Exam_ID, Q_ID FROM (
            SELECT TOP (4) q.Q_ID
            FROM Questions q
            INNER JOIN Crs_Qst cq ON q.Q_ID = cq.Q_ID
            WHERE cq.Crs_ID = @Crs_ID AND q.Q_Type = 'T/F'
            ORDER BY NEWID()

            UNION ALL

            SELECT TOP (4) q.Q_ID
            FROM Questions q
            INNER JOIN Crs_Qst cq ON q.Q_ID = cq.Q_ID
            WHERE cq.Crs_ID = @Crs_ID AND q.Q_Type = 'MCQ'
            ORDER BY NEWID()
        ) AS SelectedQuestions;

        COMMIT TRANSACTION;

        PRINT '=== EXAM GENERATED SUCCESSFULLY ===';
PRINT 'Exam ID: ' + CAST(@Exam_ID AS NVARCHAR);
PRINT 'Course: ' + @CourseName + ' (ID: ' + CAST(@Crs_ID AS NVARCHAR) + ')';
PRINT 'Instructor: ' + @InstructorName + ' (ID: ' + CAST(@Ins_ID AS NVARCHAR) + ')';
PRINT 'Type: ' + @Exam_Type;
PRINT 'Date: ' + CONVERT(NVARCHAR(10), @Exam_Date, 120);
PRINT 'Questions: 4 T/F, 4 MCQ';


        RETURN 0;
    END TRY
    BEGIN CATCH
        IF @@TRANCOUNT > 0
            ROLLBACK TRANSACTION;

        DECLARE @ErrorMessage NVARCHAR(4000) = ERROR_MESSAGE();
        RAISERROR('Error generating exam: %s', 16, 1, @ErrorMessage);
        RETURN -1;
    END CATCH
END
```

Parameterized Dynamic SQL Stored Procedure

- Takes input parameters, dynamically constructs an SQL query, executes it, and handles errors using TRY...CATCH.

Exam Answers

```
CREATE PROC [dbo].[Exam_ans]
    @Std_ID INT,
    @Exam_ID INT,
    @ans1 NVARCHAR(MAX),
    @ans2 NVARCHAR(MAX),
    @ans3 NVARCHAR(MAX),
    @ans4 NVARCHAR(MAX),
    @ans5 NVARCHAR(MAX),
    @ans6 NVARCHAR(MAX),
    @ans7 NVARCHAR(MAX),
    @ans8 NVARCHAR(MAX)
AS
BEGIN
    SET NOCOUNT ON;

    -- جدول مؤقت لتجميع الأسئلة مع إجابات الطالب
    CREATE TABLE #t (
        incr INT IDENTITY(1,1),
        ExamQst_ID INT,
        STD_ID INT,
        Std_Ans NVARCHAR(MAX)
    );

    -- جلب الأسئلة المرتبطة بالامتحان
    INSERT INTO #t (ExamQst_ID, STD_ID)
    SELECT ExamQst_ID, @Std_ID
    FROM Exam_Qst
    WHERE Exam_ID = @Exam_ID;

    -- 8 = التحقق من أن عدد الأسئلة
    IF (SELECT COUNT(*) FROM #t) <> 8
    BEGIN
        RAISERROR('Error: Exam must contain exactly 8 questions.', 16, 1);
        RETURN;
    END

    -- تحديث الإجابات بناءً على ترتيب الأسئلة
    UPDATE #t SET Std_Ans = @ans1 WHERE incr = 1;
    UPDATE #t SET Std_Ans = @ans2 WHERE incr = 2;
    UPDATE #t SET Std_Ans = @ans3 WHERE incr = 3;
    UPDATE #t SET Std_Ans = @ans4 WHERE incr = 4;
    UPDATE #t SET Std_Ans = @ans5 WHERE incr = 5;
    UPDATE #t SET Std_Ans = @ans6 WHERE incr = 6;
    UPDATE #t SET Std_Ans = @ans7 WHERE incr = 7;
    UPDATE #t SET Std_Ans = @ans8 WHERE incr = 8;

    -- إدخال البيانات إلى جدول الإجابات
    INSERT INTO Std_Exam_Qst (ExamQst_ID, STD_ID, Std_Ans)
    SELECT ExamQst_ID, STD_ID, Std_Ans
    FROM #t;

    -- تنظيف الجدول المؤقت
    DROP TABLE #t;
END
```

Parameterized Dynamic SQL Stored Procedure

- Takes input parameters, dynamically constructs an SQL query, executes it, and handles errors using TRY...CATCH.

Exam Correction

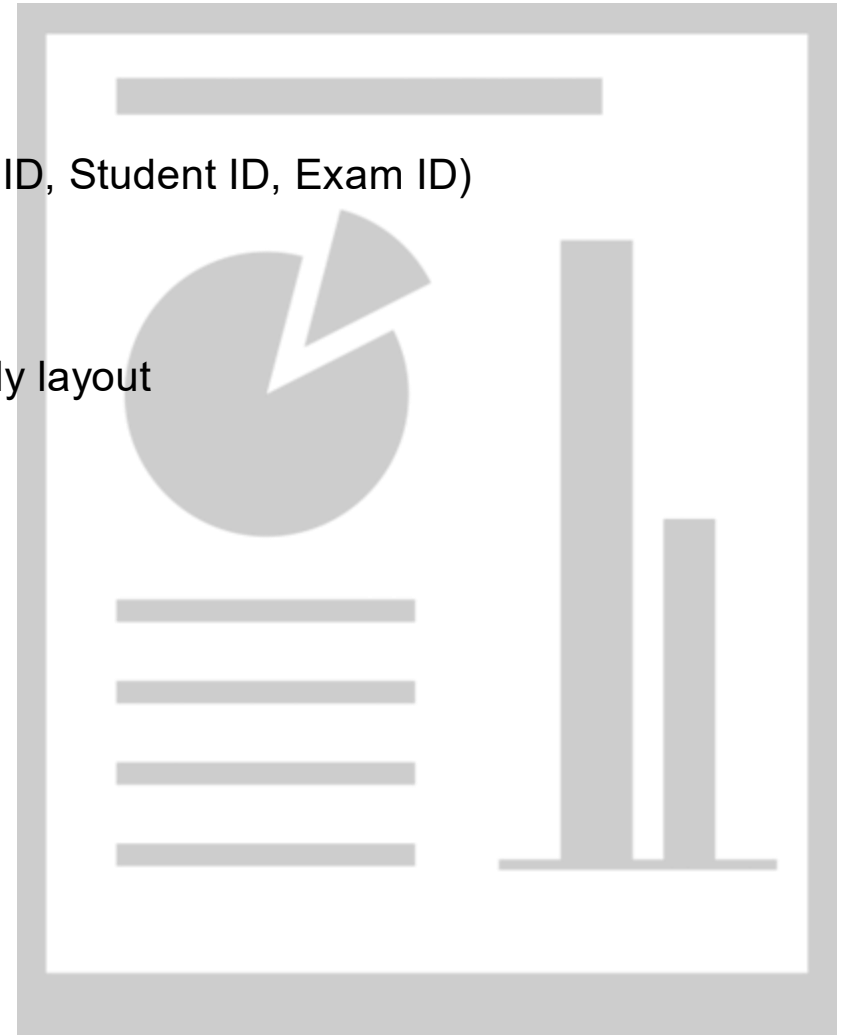
```
Create PROC [dbo].[Exam_Correction]
    @Std_ID INT,
    @Exam_ID INT
AS
BEGIN
    -- Check if student exists
    IF NOT EXISTS (SELECT 1 FROM Student WHERE STD_ID = @Std_ID)
    BEGIN
        SELECT 'There is no student with that number.' AS Message
        RETURN
    END

    -- Check if exam exists
    IF NOT EXISTS (SELECT 1 FROM Exam WHERE Exam_ID = @Exam_ID)
    BEGIN
        SELECT 'There is no exam with that number.' AS Message
        RETURN
    END

    -- Check if student took this exam
    IF NOT EXISTS (
        SELECT 1
        FROM Std_Exam_Qst qse
        JOIN Exam_Qst qe ON qse.ExamQst_ID = qe.ExamQst_ID
        WHERE qe.Exam_ID = @Exam_ID AND qse.STD_ID = @Std_ID
    )
    BEGIN
        SELECT 'This student did not take this exam.' AS Message
        RETURN
    END

    -- Update Grades for this student and this exam only
    UPDATE qse
    SET Grade = CASE
        WHEN qse.Std_Ans = qse.Correct_Ans THEN 1
        ELSE 0
    END
    FROM Std_Exam_Qst qse
    JOIN Exam_Qst qe ON qse.ExamQst_ID = qe.ExamQst_ID
    WHERE qse.STD_ID = @Std_ID AND qe.Exam_ID = @Exam_ID;

    -- Return only Exam_ID and Percentage
    SELECT
        @Exam_ID AS Exam_ID,
        CONCAT(CAST(SUM(qse.Grade) * 100.0 / COUNT(*) AS DECIMAL(5,2)),'%') AS Percentage
    FROM Std_Exam_Qst qse
    JOIN Exam_Qst qe ON qse.ExamQst_ID = qe.ExamQst_ID
    WHERE qse.STD_ID = @Std_ID AND qe.Exam_ID = @Exam_ID;
END
```

Reporting (SSRS)

- **Purpose of Reporting:**
  - Transform raw data into actionable insights to support academic and administrative decision-making.
- **Tool Used:**
  - **SQL Server Reporting Services (SSRS)** – for building, deploying, and managing paginated reports.
- **Why SSRS?**
  - Supports parameterized reports
  - Easily integrates with SQL Server stored procedures
  - Allows exporting to PDF, Excel, and Word
  - Suitable for structured, printable reports used by ITI staff
- **Report Data Source:**
  - All reports are powered by optimized Stored Procedures for performance and reusability.

Reporting (SSRS)

- **Key Features Implemented:**
  - Parameters (e.g., Department ID, Student ID, Exam ID)
  - Drill-down and grouped data
  - Dynamic data refresh
  - Page formatting and print-ready layout



Student Details By Department SP & SSRS Report

Information Technology Institute

Student Details By Department

Department : alex

STD ID	Full Name	Address	Email	Gender	Date Of Birth	Track Name	Intake Type	Branch Name	Military Status
1588	Omar Adel	MohandessinSt Suez	omar.adel588@gmail.com	Male	4/20/2005 12:00:00 AM	User Experience	Military	Sohag Branch	Completed
1589	Yasmin Hassan	HeliopolisSt Giza	yasmin.hassan589@gmail.com	Female	10/3/2001 12:00:00 AM	User Experience	Military	Sohag Branch	Exempted
1591	Karim Mostafa	ElHaramSt Alexandria	karim.mostafa591@gmail.com	Male	12/6/2004 12:00:00 AM	User Experience	Military	Sohag Branch	Exempted
1587	Mahmoud Hassan	NasrCitySt Mansoura	mahmoud.hassan587@gmail.com	Male	11/8/2002 12:00:00 AM	User Experience	Military	Sohag Branch	Completed
1586	Hassan Adel	AbbasElAkkadSt Tanta	hassan.adel586@gmail.com	Male	10/3/1997 12:00:00 AM	User Experience	Military	Sohag Branch	Exempted
1595	Ali Omar	AbbasElAkkadSt Port Said	ali.omar595@gmail.com	Male	12/14/1997 12:00:00 AM	User Experience	Military	Sohag Branch	Completed
1596	Yasmin Maher	NasrCitySt Port Said	yasmin.maher596@gmail.com	Female	9/10/2000 12:00:00 AM	User Experience	Military	Sohag Branch	Exempted
1597	Mohamed Tawfik	TahrirSt Port Said	mohamed.tawfik597@gmail.com	Male	6/29/2003 12:00:00 AM	User Experience	Military	Sohag Branch	Exempted

```sql
CREATE Proc [dbo].[Std_Details] @Dept_ID int
as
IF EXISTS (
    SELECT 1
    FROM Student s
    JOIN Track t ON s.Track_ID = t.Track_ID
    JOIN Department d ON t.Dept_ID = d.Dept_ID
    JOIN Person P ON s.STD_ID = P.P_ID
    JOIN Intake ON s.Intake_ID = Intake.Intake_ID
    JOIN Branch B ON s.Branch_ID = B.Branch_ID
    WHERE t.Dept_ID = @Dept_ID
)
BEGIN
    SELECT
        s.STD_ID,
        CONCAT(p.Fname, ' ', p.Lname) AS FullName,
        CONCAT(p.Street, ' ', p.City) AS Address,
        P.Email,
        P.Gender,
        P.Bdate AS DateOfBirth,
        t.Track_Name,
        Intake.[Type] as Intake_Type,
        B.BranchName,
        s.MilitaryStatus
    FROM Student s
    JOIN Track t ON s.Track_ID = t.Track_ID
    JOIN Department d ON t.Dept_ID = d.Dept_ID
    JOIN Person P ON s.STD_ID = P.P_ID
    JOIN Intake ON s.Intake_ID = Intake.Intake_ID
    JOIN Branch B ON s.Branch_ID = B.Branch_ID
    WHERE t.Dept_ID = @Dept_ID
END
ELSE
BEGIN
    PRINT 'The department is not found'
END
```

Student Grades SP & SSRS Report

Information Technology Institute

INTENSIVE CODE CAMP

Student Grades

Student_Name : Mahmoud Ibrahim

STD ID	Full Name	Crs Name	Total Questions	Correct Answers	Percentage
3	Mahmoud Ibrahim	OS-301	1	6	60.00%
3	Mahmoud Ibrahim	PC-101	1	1	10.00%
3	Mahmoud Ibrahim	UX-201	1	0	0.00%

```sql
CREATE PROC [dbo].[Get_Student_Grades_Report]
    @Std_ID INT
AS
BEGIN
    SET NOCOUNT ON;

    IF NOT EXISTS (SELECT 1 FROM Student WHERE STD_ID = @Std_ID)
    BEGIN
        PRINT 'Error: Student not found.';
        RETURN;
    END

    SELECT
        s.STD_ID,
        CONCAT(p.Fname, ' ', p.Lname) AS FullName,
        c.Crs_Name,
        COUNT(seq.Grade) AS Total_Questions,
        SUM(seq.Grade) AS Correct_Answers,
        CONCAT(CAST(SUM(seq.Grade) * 10.0 / COUNT(seq.Grade) AS DECIMAL(5,2)),'%') AS Percentage
    FROM Student s
    JOIN Person p ON s.STD_ID = p.P_ID
    JOIN Std_Exam_Qst seq ON s.STD_ID = seq.STD_ID
    JOIN Exam_Qst eq ON seq.ExamQst_ID = eq.ExamQst_ID
    JOIN Exam e ON eq.Exam_ID = e.Exam_ID
    JOIN Course c ON e.Crs_ID = c.Crs_ID
    WHERE s.STD_ID = @Std_ID
    GROUP BY s.STD_ID, p.Fname, p.Lname, c.Crs_Name
END
```

Instructor Courses & Number of Student SP & SSRS Report

Instructor Courses By ID

Instructor_Name : Mahmoud Ibrahim

Ins ID	Instructor Name	Crs Name	Student Count
3	Mahmoud Ibrahim	CN-501	139
3	Mahmoud Ibrahim	DPE-201	155

```sql
CREATE PROC [dbo].[Get_Instructor_Courses_And_StudentCount]
    @Ins_ID INT
AS
BEGIN
    SET NOCOUNT ON;
    -- التحقق من وجود المحاضر
    IF NOT EXISTS (SELECT 1 FROM Instructor WHERE Ins_ID = @Ins_ID)
    BEGIN
        PRINT 'Error: Instructor not found.';
        RETURN;
    END

    SELECT
        i.Ins_ID,
        CONCAT(p.Fname, ' ', p.Lname) AS Instructor_Name,
        c.Crs_Name,
        COUNT(DISTINCT s.STD_ID) AS Student_Count
    FROM Instructor i
    JOIN Person p ON i.Ins_ID = p.P_ID
    JOIN Ins_Crs ic ON i.Ins_ID = ic.Ins_ID
    JOIN Course c ON ic.Crs_ID = c.Crs_ID
    JOIN Track_Crs tc ON c.Crs_ID = tc.Crs_ID
    JOIN Track t ON tc.Track_ID = t.Track_ID
    JOIN Student s ON s.Track_ID = t.Track_ID
    WHERE i.Ins_ID = @Ins_ID
    GROUP BY i.Ins_ID, p.Fname, p.Lname, c.Crs_Name
END
```

Courses By Topic SP & SSRS Report

Information Technology Institute

INTENSIVE CODE CAMP

Get Courses By Topic

Topic_ID	Topic Name	Crs Name
11	Game Engine Development	DPE-501
11	Game Engine Development	DS-401
11	Game Engine Development	GE-201
11	Game Engine Development	DMT-401
11	Game Engine Development	IOT-301
11	Game Engine Development	FE-401

```sql
CREATE PROC [dbo].[Get_Courses_By_Topic]
    @Topic_ID INT
AS
BEGIN
    SET NOCOUNT ON;

    IF NOT EXISTS (SELECT 1 FROM Topic WHERE Topic_ID = @Topic_ID)
    BEGIN
        PRINT 'Error: Topic not found.';
        RETURN;
    END

    SELECT
        t.Topic_ID,
        t.Topic_Name,
        c.Crs_Name
    FROM Course c
    INNER JOIN Topic t ON c.Topic_ID = t.Topic_ID
    WHERE t.Topic_ID = @Topic_ID;
END
```

Exam Questions & Choices SP & SSRS Report

Information Technology Institute

Information Technology Institute

The Exam

Exam_Number :127

Q: Malware is a physical threat to hardware.		
FALSE		
TRUE		
Q: Data breaches can be prevented by firewalls.		
FALSE		
TRUE		
Q: Antivirus software is not part of cybersecurity.		
FALSE		
TRUE		
Q: A strong password policy is unnecessary.		
FALSE		
TRUE		
Q: Which practice improves web security?		
Allowing all CORS requests	Storing plain text passwords	
Disabling firewalls	Using HTTPS	
Q: What is a common web application vulnerability?		
File compression	Low resolution	
High bandwidth	SQL Injection	

```sql
CREATE PROC [dbo].[Get_Exam_Questions_Choices_Report]
    @Exam_ID INT
AS
BEGIN
    SET NOCOUNT ON;

    IF NOT EXISTS (SELECT 1 FROM Exam WHERE Exam_ID = @Exam_ID)
    BEGIN
        PRINT 'Error: Exam not found.';
        RETURN;
    END

   SELECT
    cw.Exam_ID,
    cw.QST_Content AS Question,
    MAX(CASE WHEN cw.RowNum = 1 THEN cw.Choice END) AS Choice1,
    MAX(CASE WHEN cw.RowNum = 2 THEN cw.Choice END) AS Choice2,
    MAX(CASE WHEN cw.RowNum = 3 THEN cw.Choice END) AS Choice3,
    MAX(CASE WHEN cw.RowNum = 4 THEN cw.Choice END) AS Choice4
FROM (
    SELECT
        e.Exam_ID,
        q.QST_Content,
        qc.Choice,
        ROW_NUMBER() OVER (PARTITION BY q.Q_ID ORDER BY qc.Choice) AS RowNum,
        q.Q_ID
    FROM Exam e
    INNER JOIN Exam_Qst eq ON e.Exam_ID = eq.Exam_ID
    INNER JOIN Questions q ON eq.Q_ID = q.Q_ID
    INNER JOIN Questions_Choices qc ON q.Q_ID = qc.Q_ID
    WHERE e.Exam_ID = @Exam_ID
) AS cw
GROUP BY cw.Exam_ID, cw.QST_Content, cw.Q_ID
ORDER BY cw.Q_ID;
END
```

Student Answers SSRS Report

Information Technology Institute

INTENSIVE CODE CAMP

Student Answers By Exam

Exam ID: 127

Student Name: Nour Reda

Question	Student Answer
A strong password policy is unnecessary.	True
Antivirus software is not part of cybersecurity.	False
Data breaches can be prevented by firewalls.	B
Malware is a physical threat to hardware.	A
What is the goal of cybersecurity?	C
Which practice improves web security?	False
What is a common web application vulnerability?	True
Which practice improves web security?	D

```sql
CREATE PROC [dbo].[Get_Student_Answers_Report]
    @Exam_ID INT,
    @STD_ID INT
AS
BEGIN
    SET NOCOUNT ON;

    IF NOT EXISTS (SELECT 1 FROM Exam WHERE Exam_ID = @Exam_ID)
    BEGIN
        PRINT 'Error: Exam not found.';
        RETURN;
    END

    IF NOT EXISTS (SELECT 1 FROM Student WHERE STD_ID = @STD_ID)
    BEGIN
        PRINT 'Error: Student not found.';
        RETURN;
    END

    IF NOT EXISTS (
        SELECT 1
        FROM Std_Exam_Qst qse
        JOIN Exam_Qst eq ON qse.ExamQst_ID = eq.ExamQst_ID
        WHERE eq.Exam_ID = @Exam_ID AND qse.STD_ID = @STD_ID
    )
    BEGIN
        PRINT 'Error: This student did not take this exam.';
        RETURN;
    END

    SELECT
        eq.Exam_ID,
        s.STD_ID,
        q.QST_Content AS Question,
        seq.Std_Ans AS Student_Answer
    FROM Exam_Qst eq
    JOIN Questions q ON eq.Q_ID = q.Q_ID
    JOIN Std_Exam_Qst seq ON eq.ExamQst_ID = seq.ExamQst_ID
    JOIN Student s ON seq.STD_ID = s.STD_ID
    WHERE eq.Exam_ID = @Exam_ID AND s.STD_ID = @STD_ID
END
```

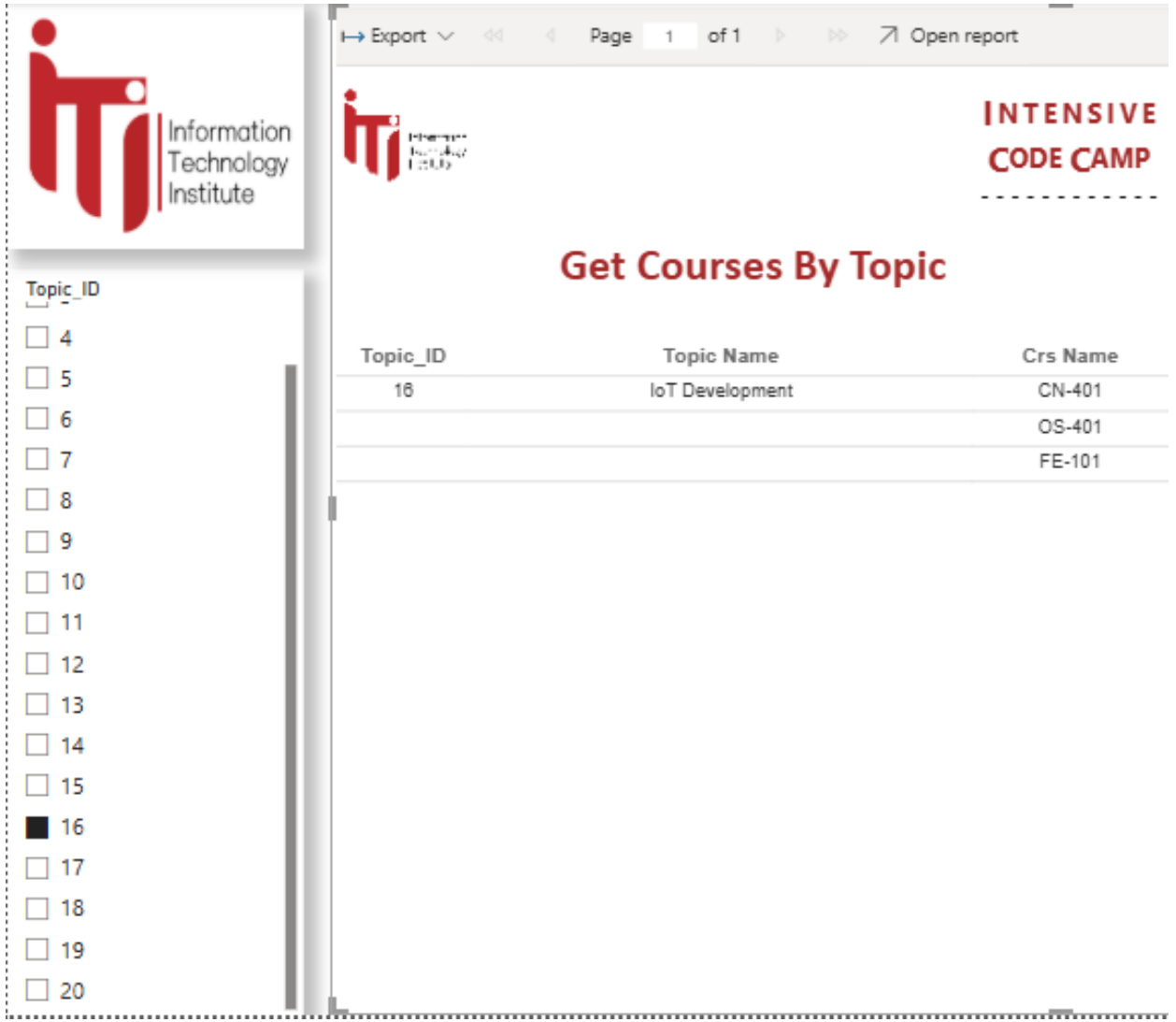
SSRS Reports in Power BI

- **Purpose:**
  - Combine the strengths of SSRS (pixel-perfect, print-ready reports) with Power BI's interactivity and analytics capabilities.
- **Integration Approach:**
  - SSRS reports were first developed and tested using **SQL Server Report Builder**.
  - Reports were deployed to **Report Server (SSRS)**.
  - Power BI was used to reference these reports for a complete view of exam data.
- **Challenges Faced:**
  - Power BI integration with SSRS requires Power BI Report Server or Power BI Service (Pro) for full embedding.
  - Due to the absence of a paid service, SSRS reports were accessed via URL links or external visuals from the report server.

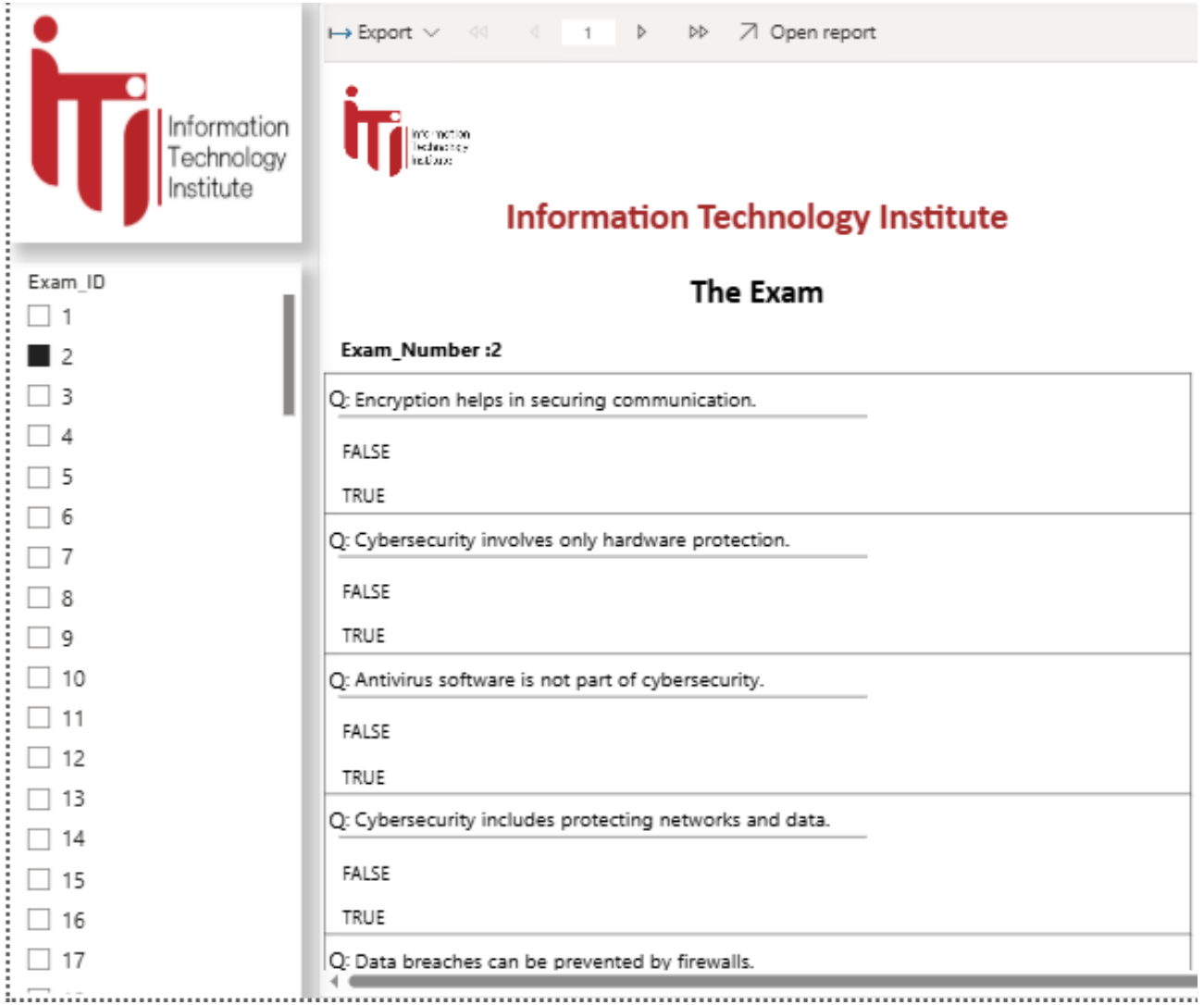
SSRS Reports in Power BI

- **Use Case in Project:**
  - Links to SSRS reports were included in Power BI dashboards.
  - Users could navigate to detailed printable reports for exams, students, and instructors from within Power BI.
- **Value Added:**
  - Combines summary analytics with detailed printable reports
  - Provides flexibility for different user needs (managers vs instructors)
  - Enhances reporting experience with both **visual storytelling** and **structured documents**

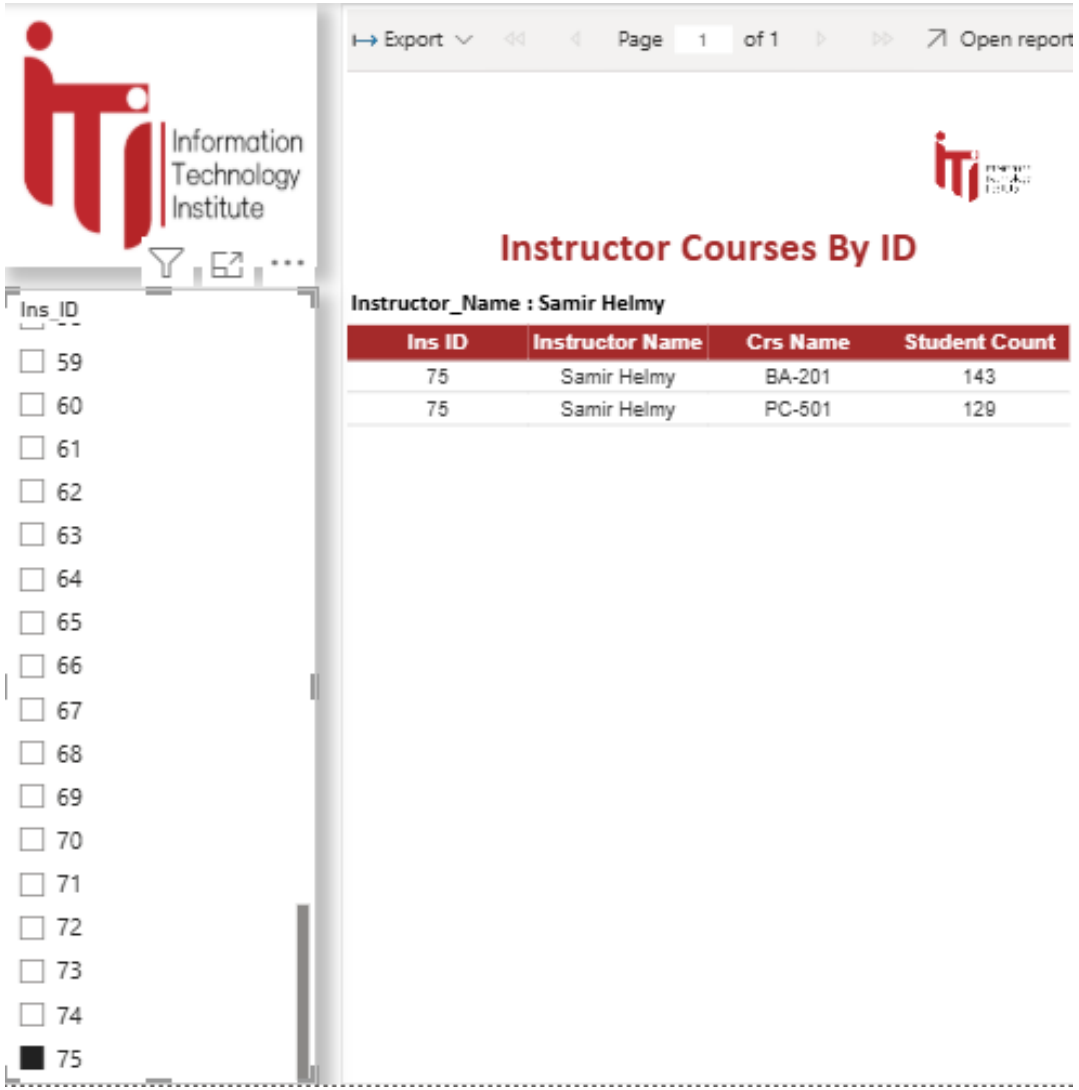
Topic Courses SSRS Report in Power BI



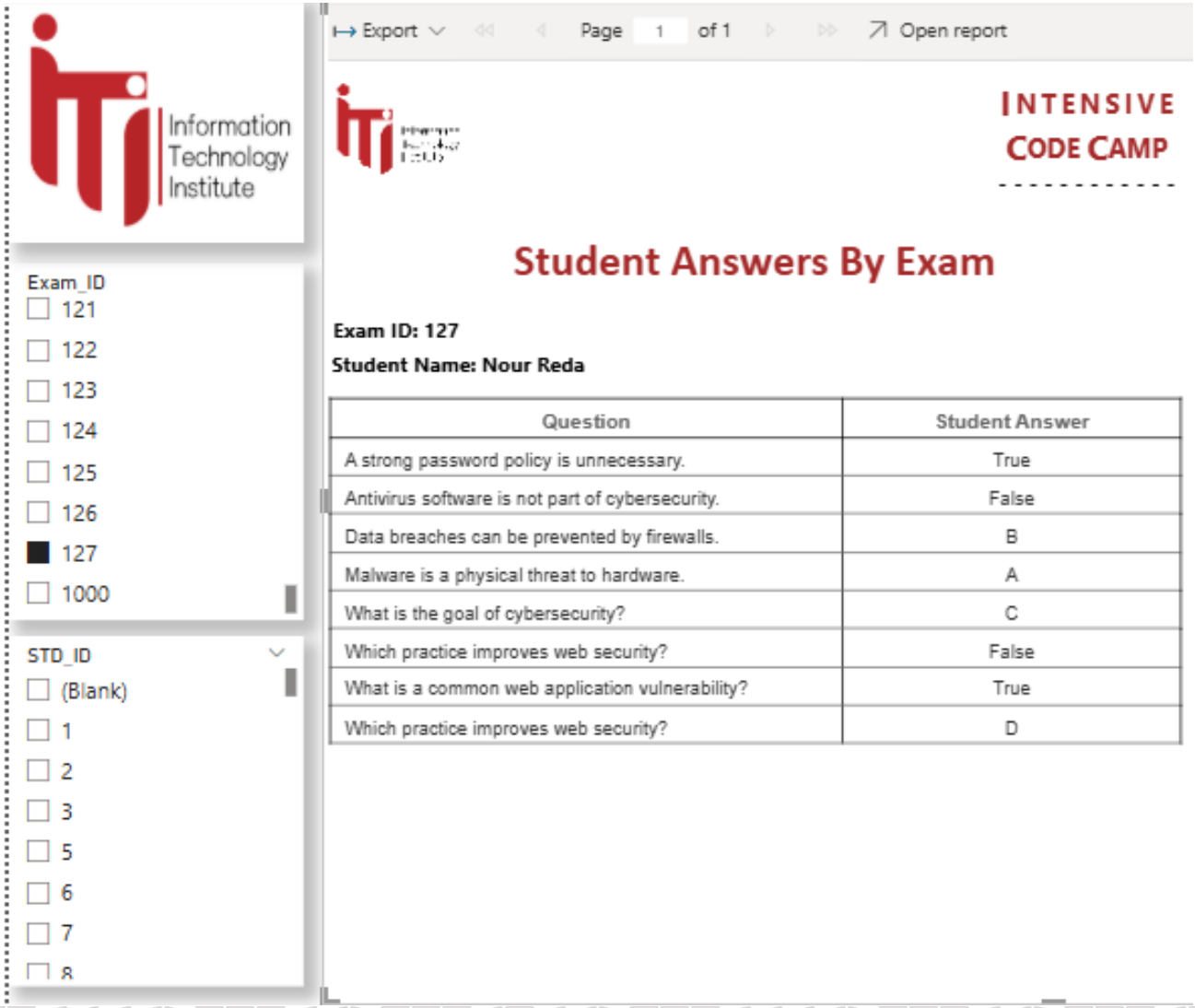
Exam Questions & Choices SSRS Report in Power BI



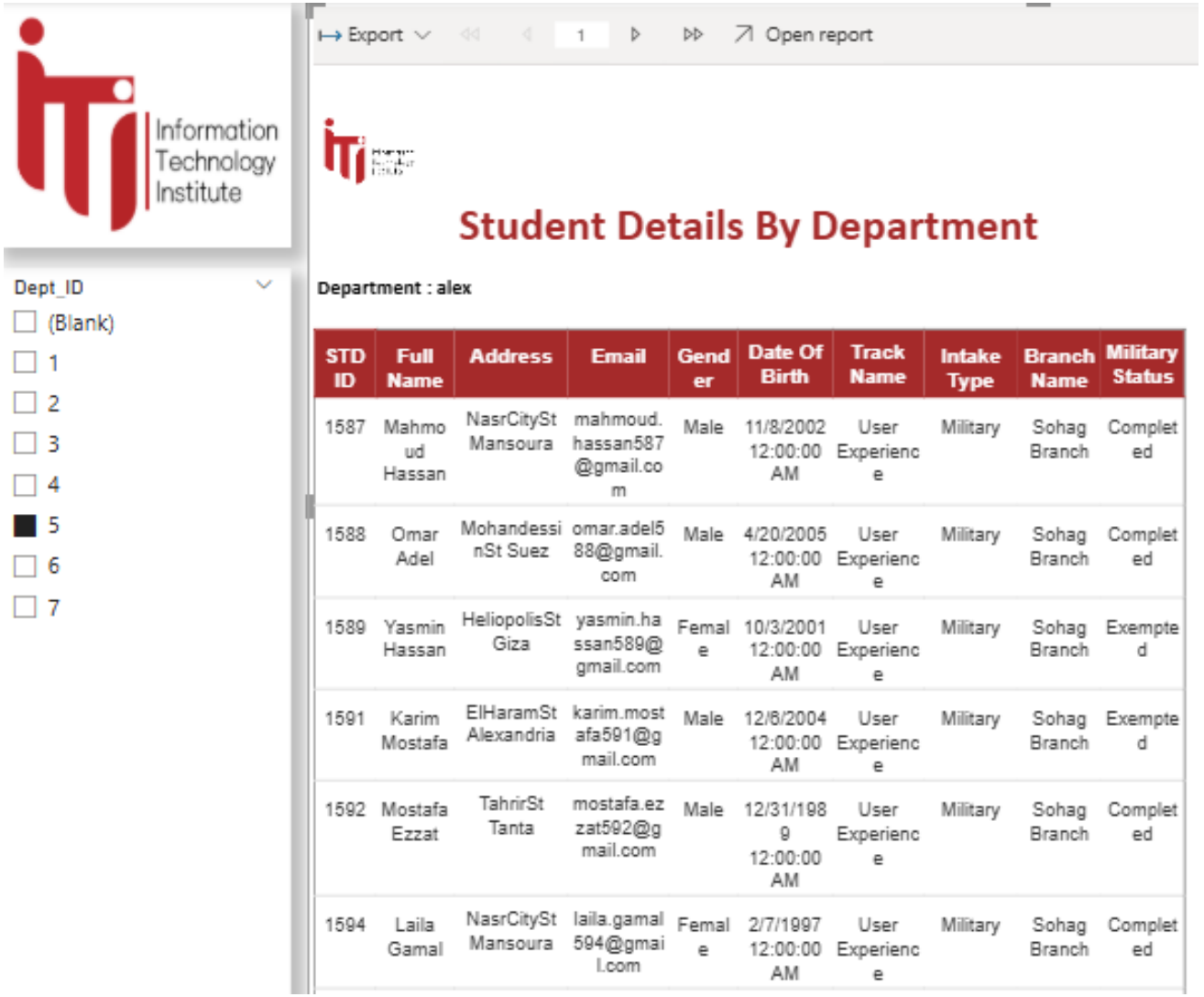
Instructor Courses SSRS Report in Power BI



Student Answers by Exam SSRS Report in Power BI

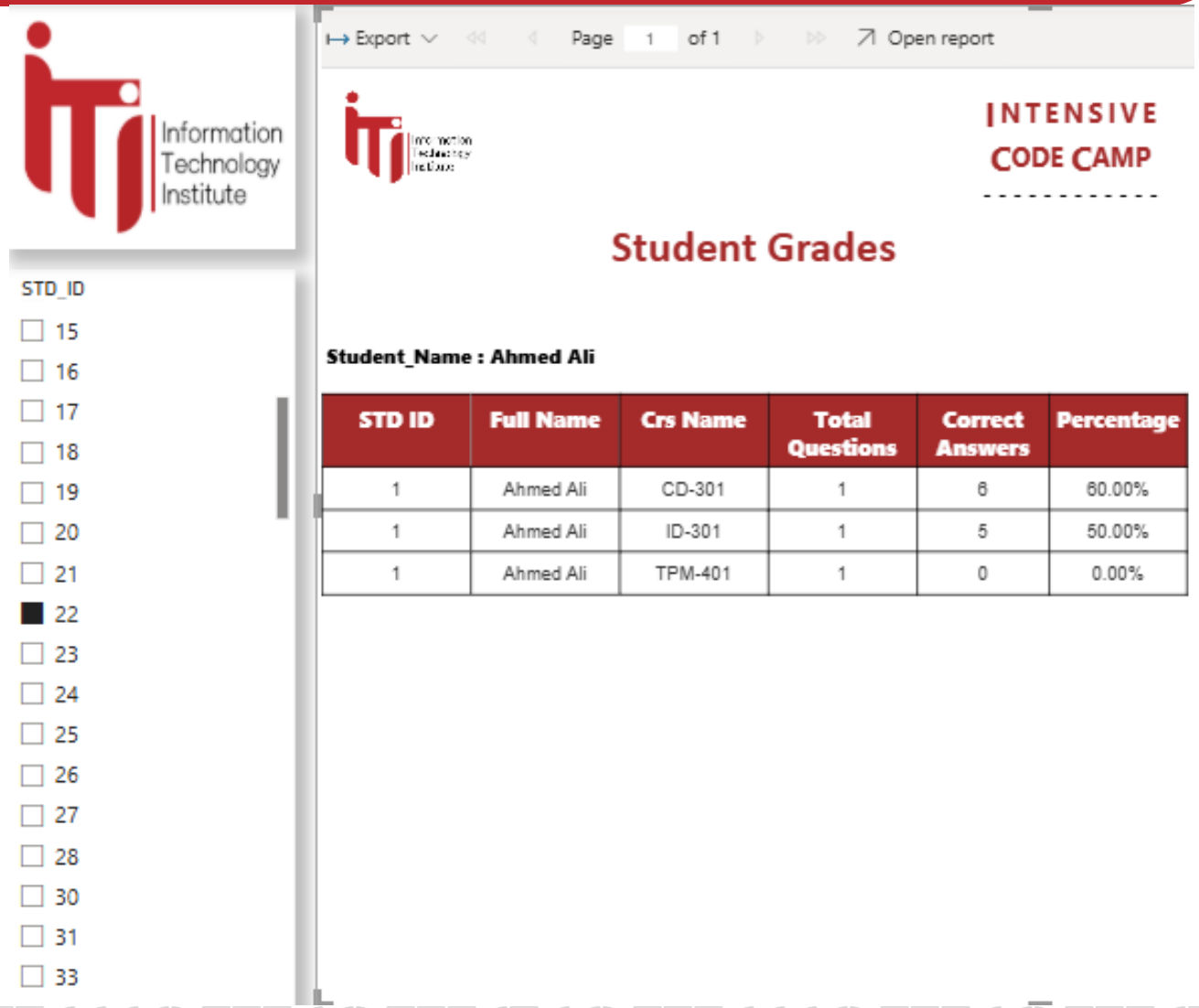


Student Details by Department SSRS Report in Power BI



STD ID	Full Name	Address	Email	Gender	Date Of Birth	Track Name	Intake Type	Branch Name	Military Status
1587	Mahmoud Hassan	NasrCitySt Mansoura	mahmoud.hassan587@gmail.com	Male	11/8/2002 12:00:00 AM	User Experience	Military	Sohag Branch	Completed
1588	Omar Adel	MohandessinSt Suez	omar.adel588@gmail.com	Male	4/20/2005 12:00:00 AM	User Experience	Military	Sohag Branch	Completed
1589	Yasmin Hassan	HeliopolisSt Giza	yasmin.hassan589@gmail.com	Female	10/3/2001 12:00:00 AM	User Experience	Military	Sohag Branch	Exempted
1591	Karim Mostafa	ElHaramSt Alexandria	karim.mostafa591@gmail.com	Male	12/8/2004 12:00:00 AM	User Experience	Military	Sohag Branch	Exempted
1592	Mostafa Ezzat	TahrirSt Tanta	mostafa.ezzat592@gmail.com	Male	12/31/1989 12:00:00 AM	User Experience	Military	Sohag Branch	Completed
1594	Laila Gamal	NasrCitySt Mansoura	laila.gamal594@gmail.com	Female	2/7/1997 12:00:00 AM	User Experience	Military	Sohag Branch	Completed

Student Grades SSRS Report in Power BI



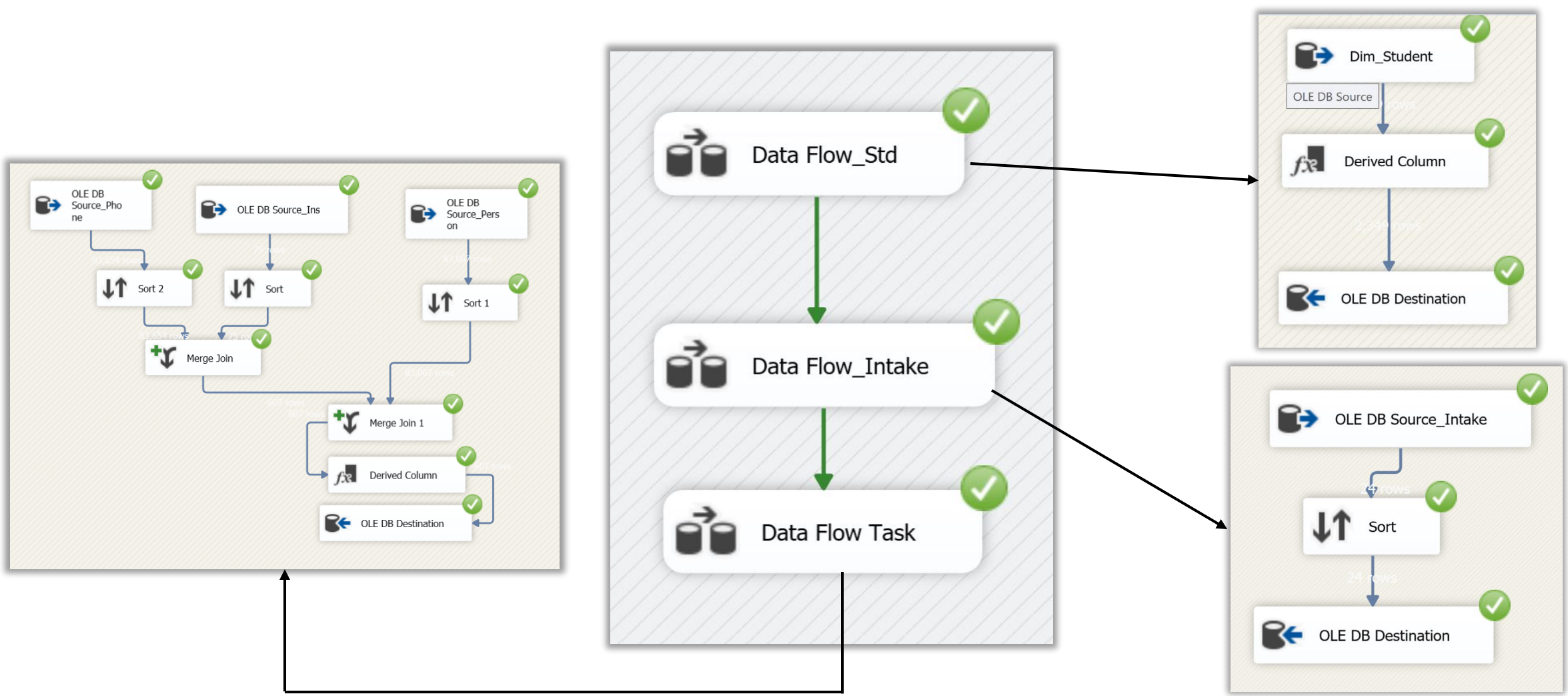
Data Integration (SSIS)

- **Objective:**
  - To extract data from the transactional database and load it into a structured Data Warehouse for reporting and analysis.
- **Tool Used:**
  - **SQL Server Integration Services (SSIS)** — for ETL (Extract, Transform, Load) processes.
- **ETL Process Overview:**
  - **Extract:**
    - Source tables from the operational database (e.g., Students, Courses, Exams, Departments).
  - **Transform:**
    - Data cleansing (e.g., null handling, type conversion)
    - Business logic implementation (e.g., mapping keys, standardizing formats)
    - Creating surrogate keys and time dimensions
  - **Load:**
    - Inserted cleaned and structured data into dimension and fact tables in the data warehouse.

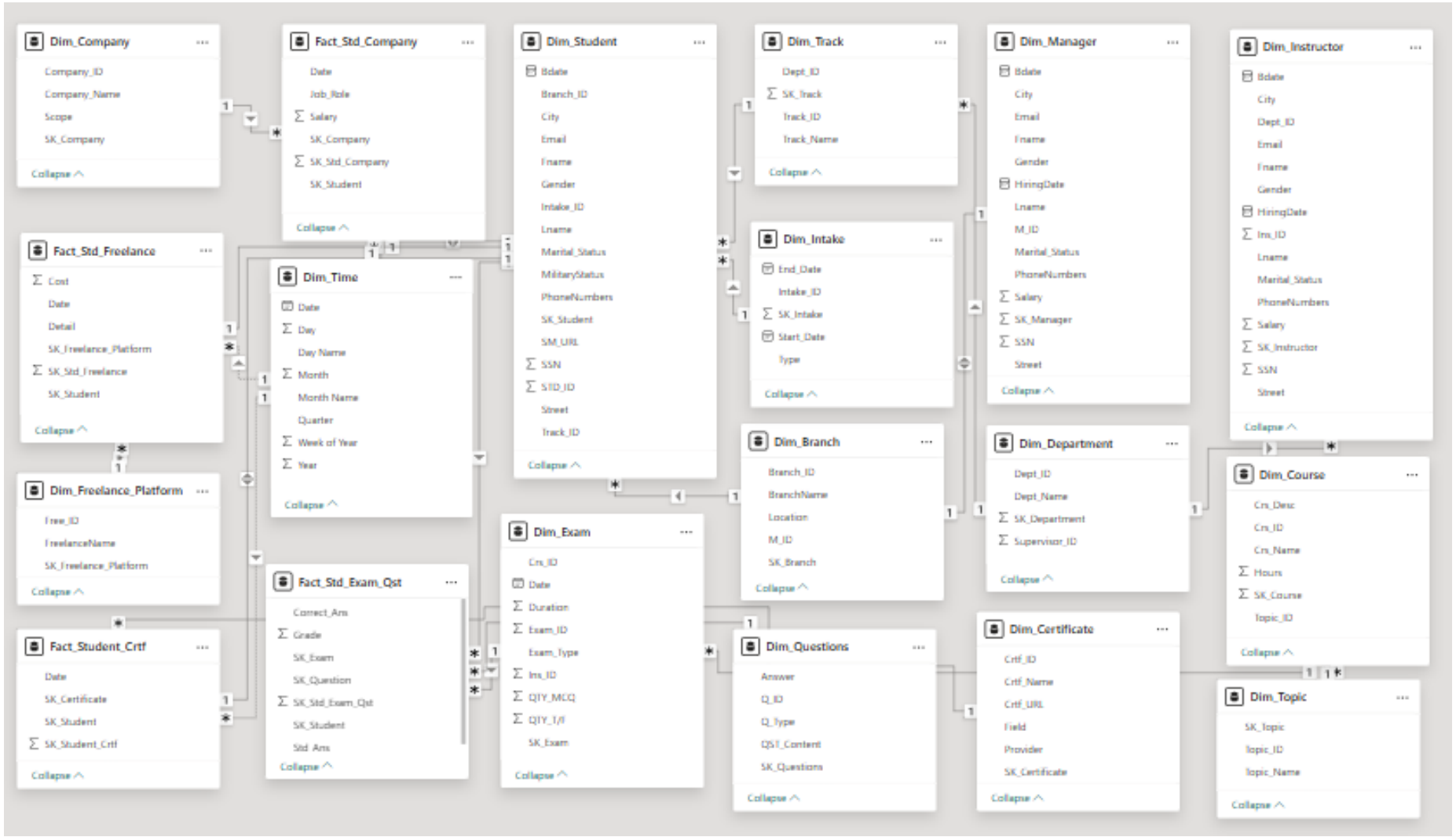
Data Integration (SSIS)

- **Package Features:**
  - Multiple Data Flow Tasks to handle different tables.
  - **Lookups** and **Derived Columns** for transforming data
  - Error Handling and Logging to ensure reliability
- **Benefits:**
  - Supports historical analysis and time-based trends
  - Ensures consistency and performance for reporting tools (SSRS & Power BI)
  - Enables centralized, optimized data access for all users

Data Integration (SSIS)



Data Modeling



Data Analysis & Visualization (Dashboards)

- **Purpose:**
  - Provide insightful and interactive visual summaries to support data-driven decisions for students' performance and system usage.
- **Tool Used:**
  - **Power BI Desktop** — used to build dynamic dashboards based on the examination system data.
- **Data Source:**
  - SQL Server database (Galaxy Schema model)
  - Data extracted through optimized queries
- **Visualization Features:**
  - Slicers for filtering by Department, Track, Course, Exam, or Instructor
  - Drillthrough support for deeper insights
  - Measures and KPIs using DAX (e.g., student count, top performers, pass rates)

Instructor Details Dashboard

Information Technology Institute

BranchName

All

Dept_Name

All

Instructors Details

Courses Details

Certificate Details

Students Details

Students Info Details

Student All Information

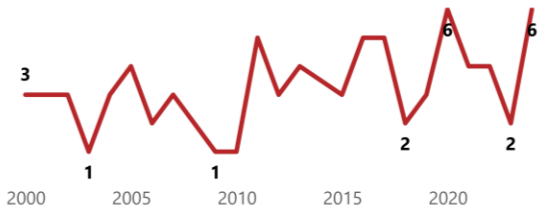
See More Details Through This Report

Click Here

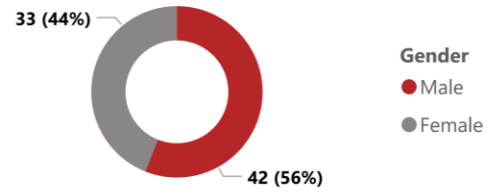
Instructors Details

75	EGP 20,000	EGP 15,151	EGP 18,326
# Instructor	Highest Ins Salary EGP	Lowest Ins Salary EGP	Avg Ins Salary EGP

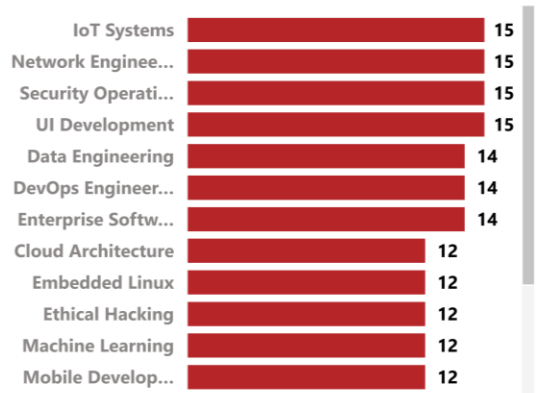
Instructor by Year



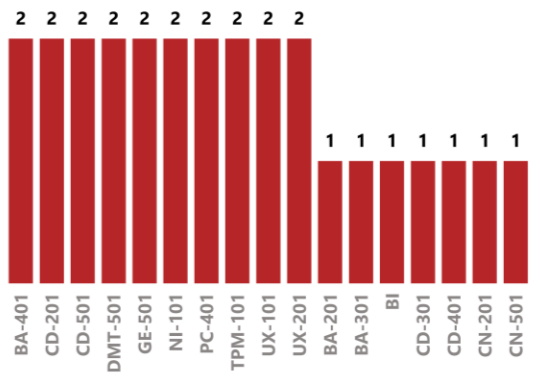
Instructor by Gender



Instructor by Track Name



Instructor by Course Name



Fname	Lname	Avg_Ins_Salary_E
Ahmed	Ali	EGP 18,631
Ahmed	Fawzy	EGP 19,291
Ahmed	Khaled	EGP 18,580
Ahmed	Khalil	EGP 19,977
Ahmed	Saad	EGP 15,152
Amal	Yassin	EGP 16,486
Amr	Adel	EGP 16,573
Ayman	Mohsen	EGP 19,127
Ayman	Reda	EGP 20,000
Basma	Nabil	EGP 19,960
Dina	Mohamed	EGP 16,905
Dina	Sameh	EGP 19,312
Ehab	Samir	EGP 18,163
Farah	Gamal	EGP 17,407
Farida	Youssef	EGP 15,974
Fatma	Hassan	EGP 16,030
Hagar	Samir	EGP 17,050
Hanaa	Nabil	EGP 19,193
Hanan	Saeed	EGP 19,888
Hany	Magdy	EGP 16,367
Hany	Reda	EGP 19,671
Total		**EGP 18,326**

Courses Details Dashboard

BranchName
All

Topic_Name
All

Instructors Details
Courses Details
Certificate Details
Students Details
Students Info Details
Student All Information

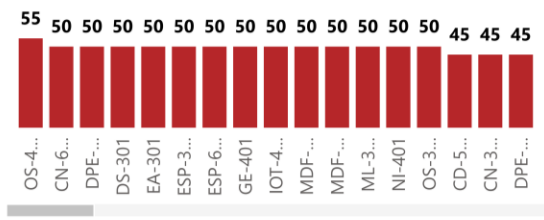
See More Details Through This Report

Click Here

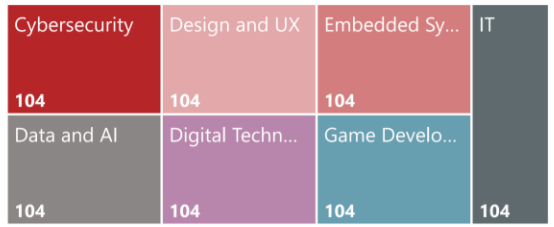
Courses Details

104	39.65	4124	19
# Course	AvgCourseHrs	Sum of Hours	# Topic

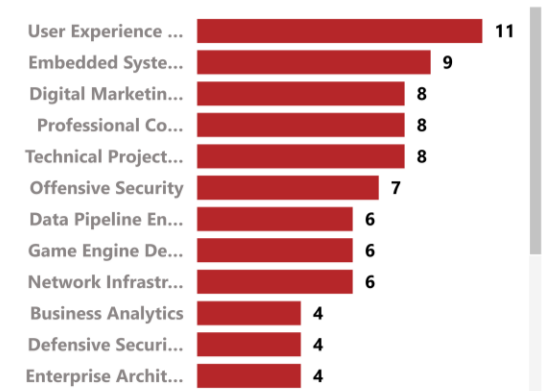
Sum of Hours by Crs_Name



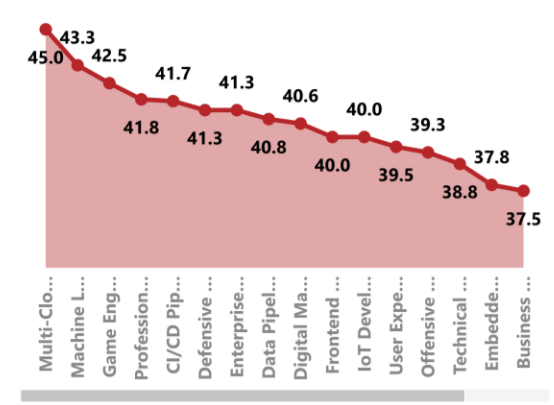
Count of Crs_ID by Dept_Name



Courses by Topic Name



Average Course Houers by Topic Name



Crs_Name	Sum of Hours	Topic_Name
BA-101	30	Embedded Sy
BA-201	35	Interactive De
BA-301	40	Enterprise Ar
BA-401	35	Data Pipeline
BA-501	25	Network Infra
BI	34	Professional (
CD-101	25	Interactive De
CD-201	40	Technical Pro
CD-301	35	Network Infra
CD-401	30	Professional (
CD-501	45	Offensive Sec
CN-201	40	Embedded Sy
CN-301	45	User Experier
CN-401	35	IoT Developn
CN-501	40	Interactive De
CN-601	50	Data Pipeline
DMT-101	30	User Experier
DMT-201	35	Business Ana
DMT-301	40	Professional (
DMT-401	35	Game Engine
DMT-501	30	Digital Marke
Total	4124	

Certificate Details Dashboard

Information Technology Institute

BranchName
All

Track_Name
All

Instructors Details
Courses Details
Certificate Details
Students Details
Students Info Details
Student All Information

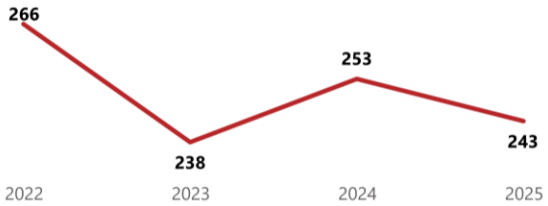
See More Details Through This Report

Click Here

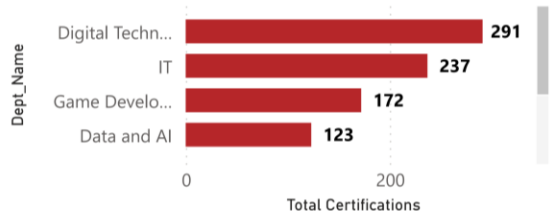
Certificate Details

15	1001	1001	42.60
# Certificate	Total Certifications	Students with Certification	Certification %

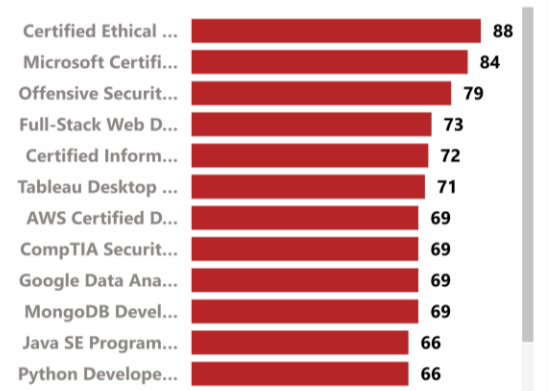
Total Certifications by Year



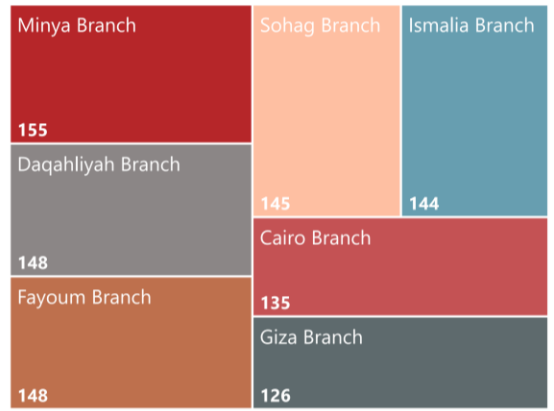
Total Certifications by Dept_Name



Total Certificates by the Providor

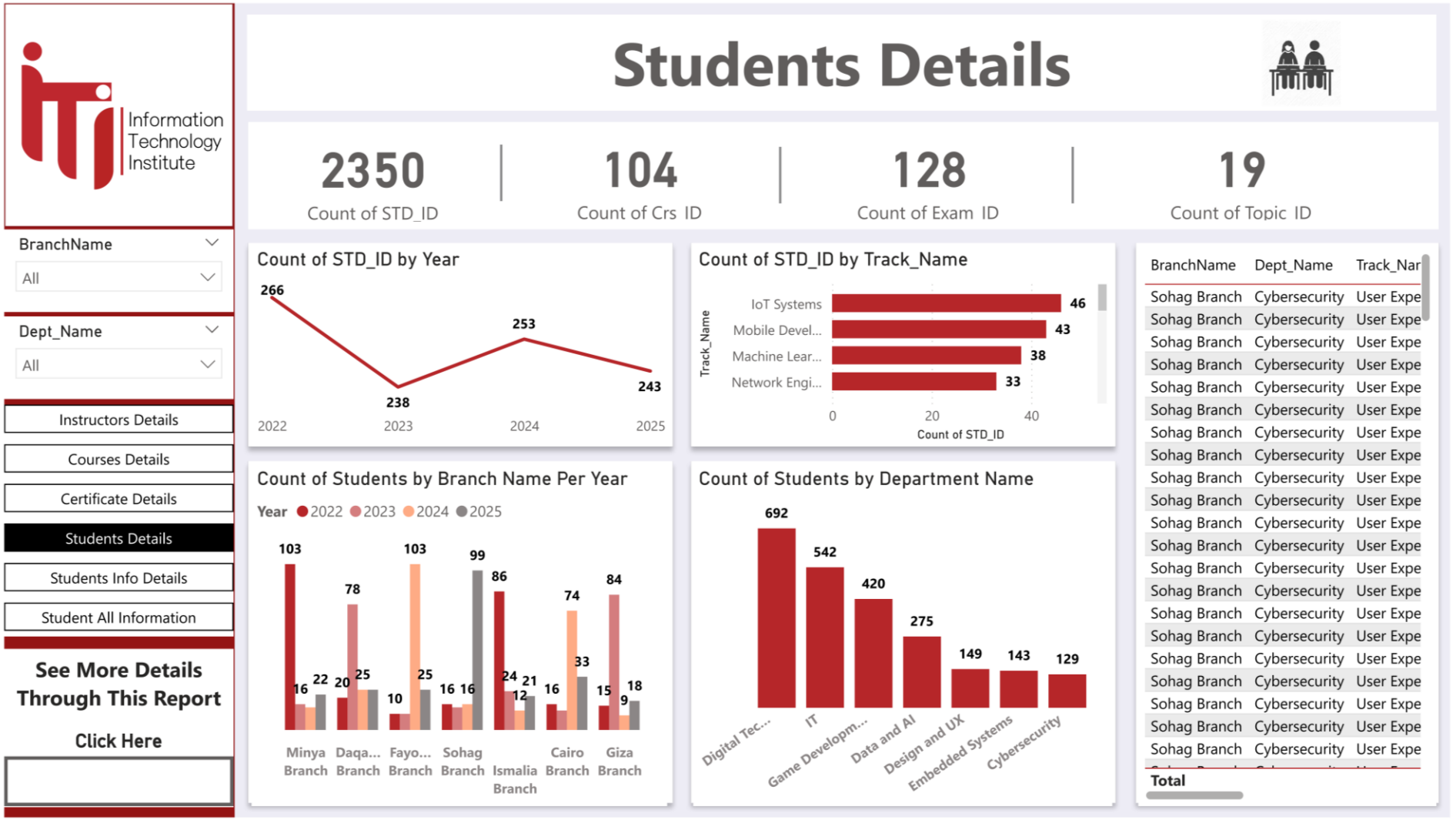


Total Certificates by the Branch

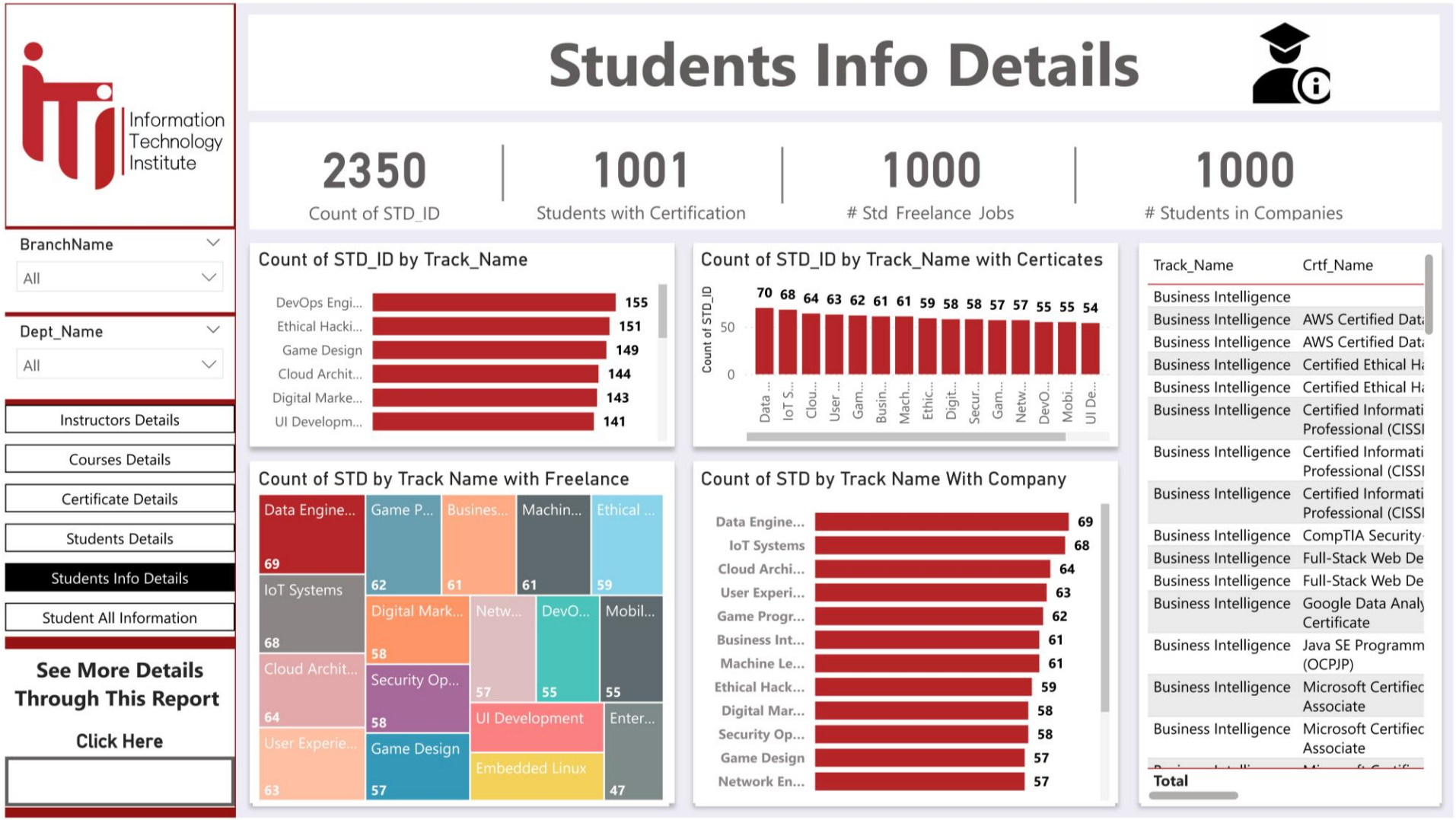


Crtf_Name
AWS Certified Data Analytics - Specialty
Certified Ethical Hacker (CEH)
Certified Information Systems Security Professional (CISSP)
CompTIA Security+
Full-Stack Web Development Certificate
Google Data Analytics Professional Certificate
Java SE Programmer Certification (OCPJP)
Microsoft Certified: Azure Developer Associate
Microsoft Certified: Power BI Data Analyst
MongoDB Developer Certification
Offensive Security Certified Professional (OSCP)
Oracle Database Administrator Certified Associate
Python Developer Certification (PCEP)
Tableau Desktop Specialist
Total

Students Details Dashboard



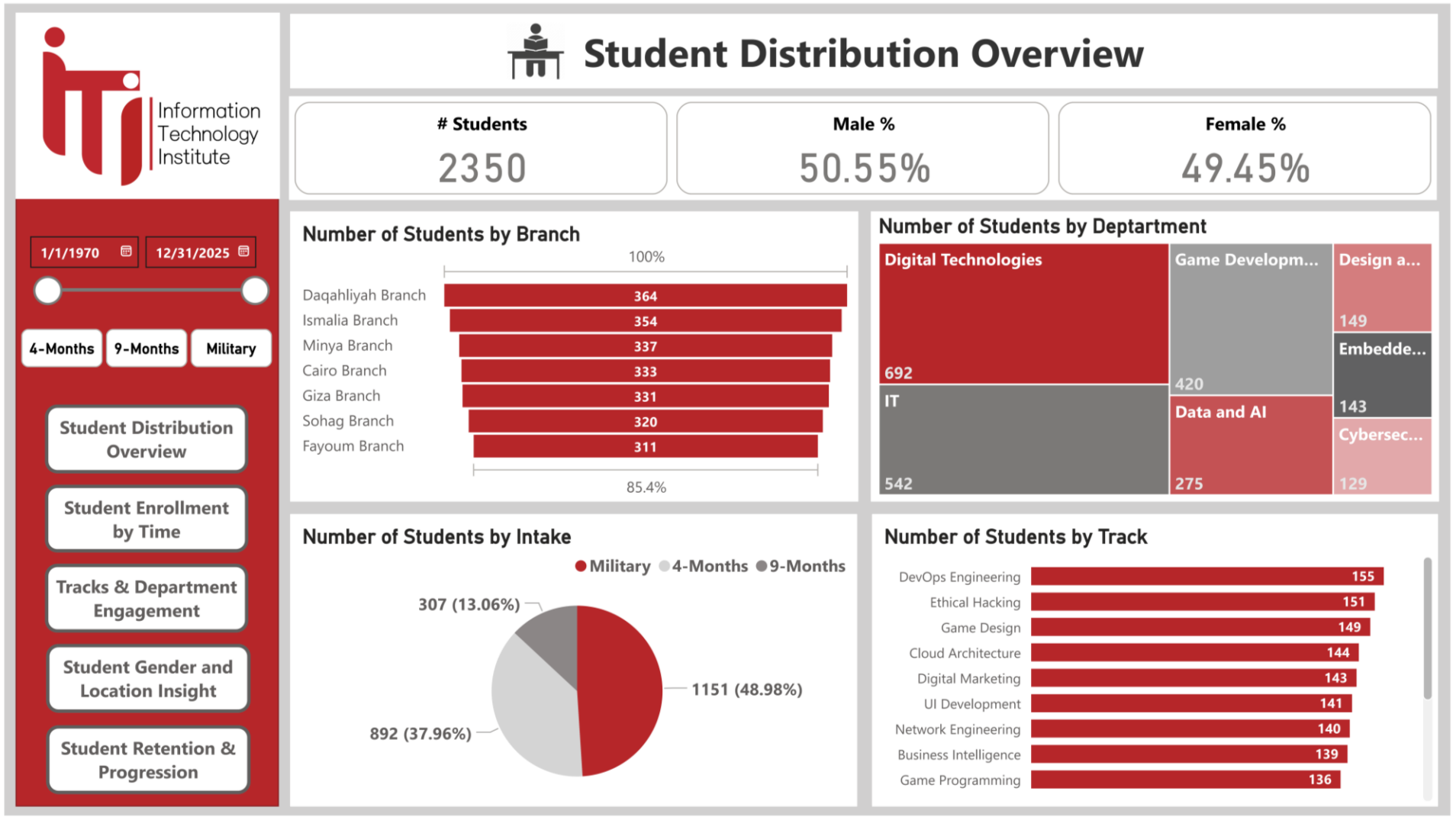
Students Info Details Dashboard



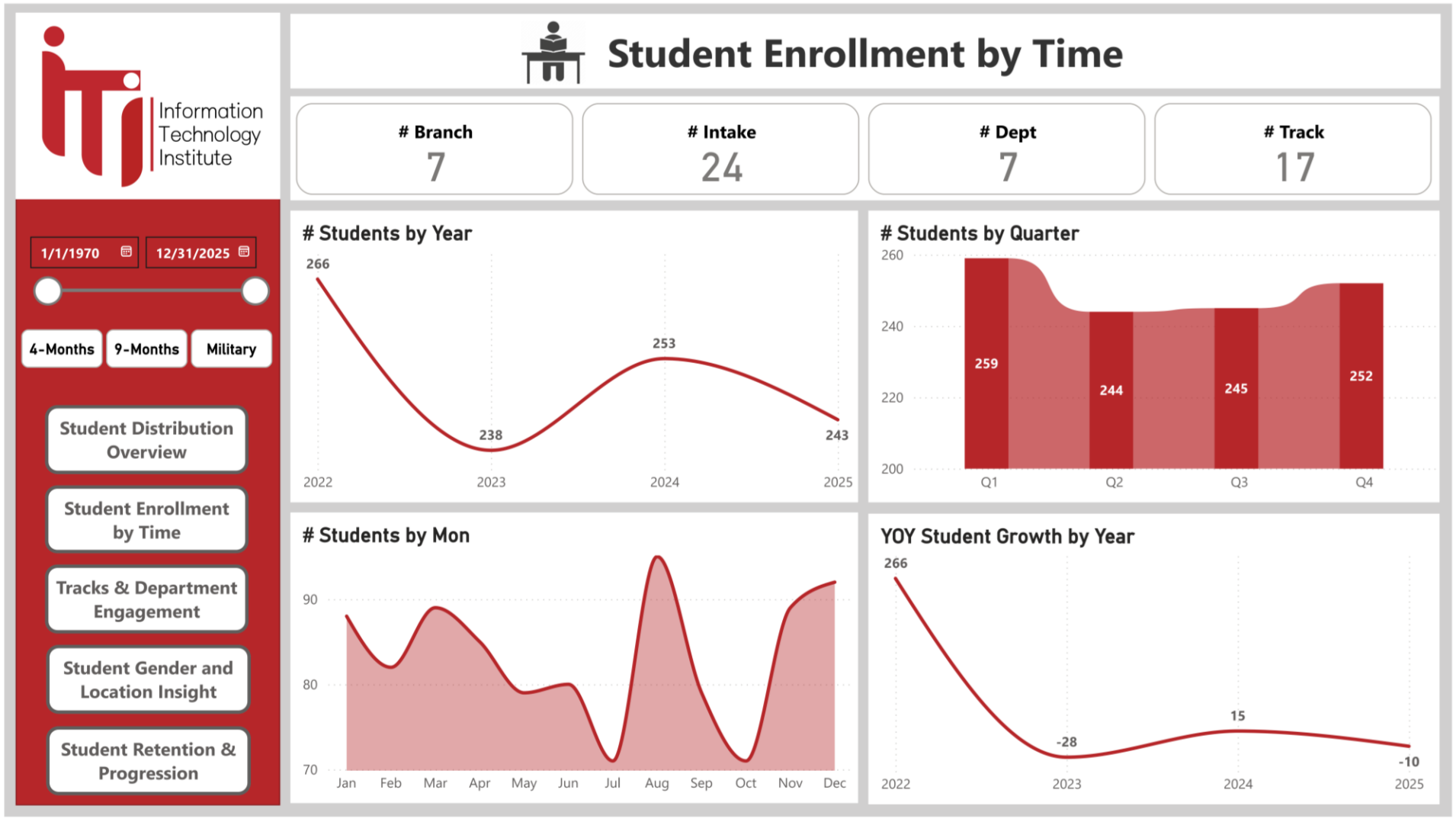
Student Details DrillThrough

STD_ID	Fname	Lname	Gender	Bdate	Email	Marital_Status	MilitaryStatus	Street	City	SM_URL	BranchName	Dept_Name	Trac
1	Ahmed	Ali	Male	Thursday, March 22, 2001	ahmed.ali@gmail.com	Married	Completed	AbbasElAkkadSt	Cairo		Minya Branch	Data and AI	Bus
2	Mostafa	Hassan	Male	Thursday, May 12, 1994	mostafa.hassan@gmail.com	Married	Postponed	ElHaramSt	Giza		Minya Branch	Data and AI	Bus
3	Mahmoud	Ibrahim	Male	Monday, July 26, 1999	mahmoud.ibrahim@gmail.com	Married	Exempted	ElTahrirSt	Alexandria		Minya Branch	Data and AI	Bus
5	Fatma	Hassan	Female	Saturday, November 15, 1980	fatma.hassan@gmail.com	Married	Exempted	RamsisSt	Mansoura		Minya Branch	Data and AI	Bus
6	Omar	Khaled	Male	Tuesday, April 18, 2000	omar.khaled@gmail.com	Divorced	Completed	ElNasrSt	Assiut		Minya Branch	Data and AI	Bus
7	Salma	Youssef	Female	Tuesday, September 09, 1997	salma.youssef@gmail.com	Single	Completed	ElThawraSt	Suez		Minya Branch	Data and AI	Bus
8	Tarek	Nasser	Male	Thursday, January 23, 1975	tarek.nasser@gmail.com	Divorced	Completed	ElNasrSt	Luxor		Minya Branch	Data and AI	Bus
9	Hanan	Saeed	Female	Sunday, December 02, 1979	hanan.saeed@gmail.com	Divorced	Exempted	ElGeishSt	PortSaid		Minya Branch	Data and AI	Bus
10	Karim	Mostafa	Male	Wednesday, August 14, 1996	karim.mostafa@gmail.com	Single	Completed	AbbasElAkkadSt	Giza		Minya Branch	Data and AI	Bus
11	Rania	Adel	Female	Saturday, June 19, 1982	rania.adel@gmail.com	Married	Postponed	ElNasrSt	Alexandria		Minya Branch	Data and AI	Bus
12	Nour	Hisham	Female	Saturday, March 25, 1995	nour.hisham@gmail.com	Married	Exempted	ElThawraSt	Cairo		Minya Branch	Data and AI	Bus
13	Ehab	Samir	Male	Sunday, July 05, 1998	ehab.samir@gmail.com	Single	Postponed	ElGeishSt	Tanta		Minya Branch	Data and AI	Bus
14	Mona	Reda	Female	Tuesday, February 14, 1978	mona.reda@gmail.com	Single	Postponed	ElTahrirSt	Mansoura		Minya Branch	Data and AI	Bus
15	Sherif	Gamal	Male	Tuesday, October 30, 1973	sherif.gamal@gmail.com	Divorced	Completed	RamsisSt	Assiut		Minya Branch	Data and AI	Bus
16	Hossam	Farid	Male	Saturday, November 27, 1999	hossam.farid@gmail.com	Divorced	Exempted	ElThawraSt	Suez		Minya Branch	Data and AI	Bus
17	Dina	Sameh	Female	Wednesday, January 09, 2002	dina.sameh@gmail.com	Divorced	Exempted	AbbasElAkkadSt	Luxor		Minya Branch	Data and AI	Bus
18	Ahmed	Khalil	Male	Thursday, May 15, 1997	ahmed.khalil@gmail.com	Single	Exempted	ElNasrSt	PortSaid		Minya Branch	Data and AI	Bus
19	Laila	Fathy	Female	Saturday, August 08, 1981	laila.fathy@gmail.com	Married	Postponed	ElHaramSt	Cairo		Minya Branch	Data and AI	Bus
20	Amr	Adel	Male	Wednesday, June 21, 2000	amr.adel@gmail.com	Divorced	Postponed	ElGeishSt	Alexandria		Minya Branch	Data and AI	Bus
21	Nada	Mostafa	Female	Sunday, October 13, 1996	nada.mostafa@gmail.com	Divorced	Exempted	RamsisSt	Giza		Minya Branch	Data and AI	Bus
22	Samir	Helmy	Male	Saturday, September 17, 1977	samir.helmy@gmail.com	Divorced	Completed	ElNasrSt	Tanta		Minya Branch	Data and AI	Bus
23	Basma	Nabil	Female	Friday, April 30, 1976	basma.nabil@gmail.com	Married	Exempted	ElThawraSt	Mansoura		Minya Branch	Data and AI	Bus
24	Khaled	Mohsen	Male	Tuesday, December 12, 1995	khaled.mohsen@gmail.com	Divorced	Exempted	ElHaramSt	Assiut		Minya Branch	Data and AI	Bus
25	Rasha	Saad	Female	Saturday, February 28, 1998	rasha.saad@gmail.com	Divorced	Exempted	ElTahrirSt	Suez		Minya Branch	Data and AI	Bus
26	Youssef	Tamer	Male	Tuesday, July 08, 1997	youssef.tamer@gmail.com	Single	Postponed	AbbasElAkkadSt	Luxor		Minya Branch	Data and AI	Bus
27	Hany	Reda	Male	Friday, May 20, 1983	hany.reda@gmail.com	Married	Postponed	ElGeishSt	PortSaid		Minya Branch	Data and AI	Bus
28	Mariam	Hatem	Female	Thursday, September 02, 1999	mariam.hatem@gmail.com	Single	Postponed	ElNasrSt	Cairo		Minya Branch	Data and AI	Bus
30	Ibrahim	Adel	Male	Saturday, May 18, 2002	ibrahim.adel@gmail.com	Married	Completed	RamsisSt	Cairo		Minya Branch	Data and AI	Bus
31	Sara	Mahmoud	Female	Thursday, November 25, 1999	sara.mahmoud@gmail.com	Single	Postponed	AbbasElAkkadSt	Giza		Minya Branch	Data and AI	Bus
33	Amal	Yassin	Female	Friday, March 21, 1975	amal.yassin@gmail.com	Divorced	Completed	ElGeishSt	Tanta		Minya Branch	Data and AI	Bus
34	Nader	Hisham	Male	Monday, September 14, 1998	nader.hisham@gmail.com	Single	Completed	ElNasrSt	Mansoura		Minya Branch	Data and AI	Bus
35	Rami	Khaled	Male	Sunday, January 30, 2000	rami.khaled@gmail.com	Divorced	Exempted	ElThawraSt	Assiut		Minya Branch	Data and AI	Bus
36	Mona	Hossam	Female	Saturday, August 19, 1978	mona.hossam@gmail.com	Divorced	Completed	RamsisSt	Suez		Minya Branch	Data and AI	Bus
37	Ahmed	Saad	Male	Monday, April 07, 1997	ahmed.saad@gmail.com	Single	Completed	ElHaramSt	Luxor		Minya Branch	Data and AI	Bus

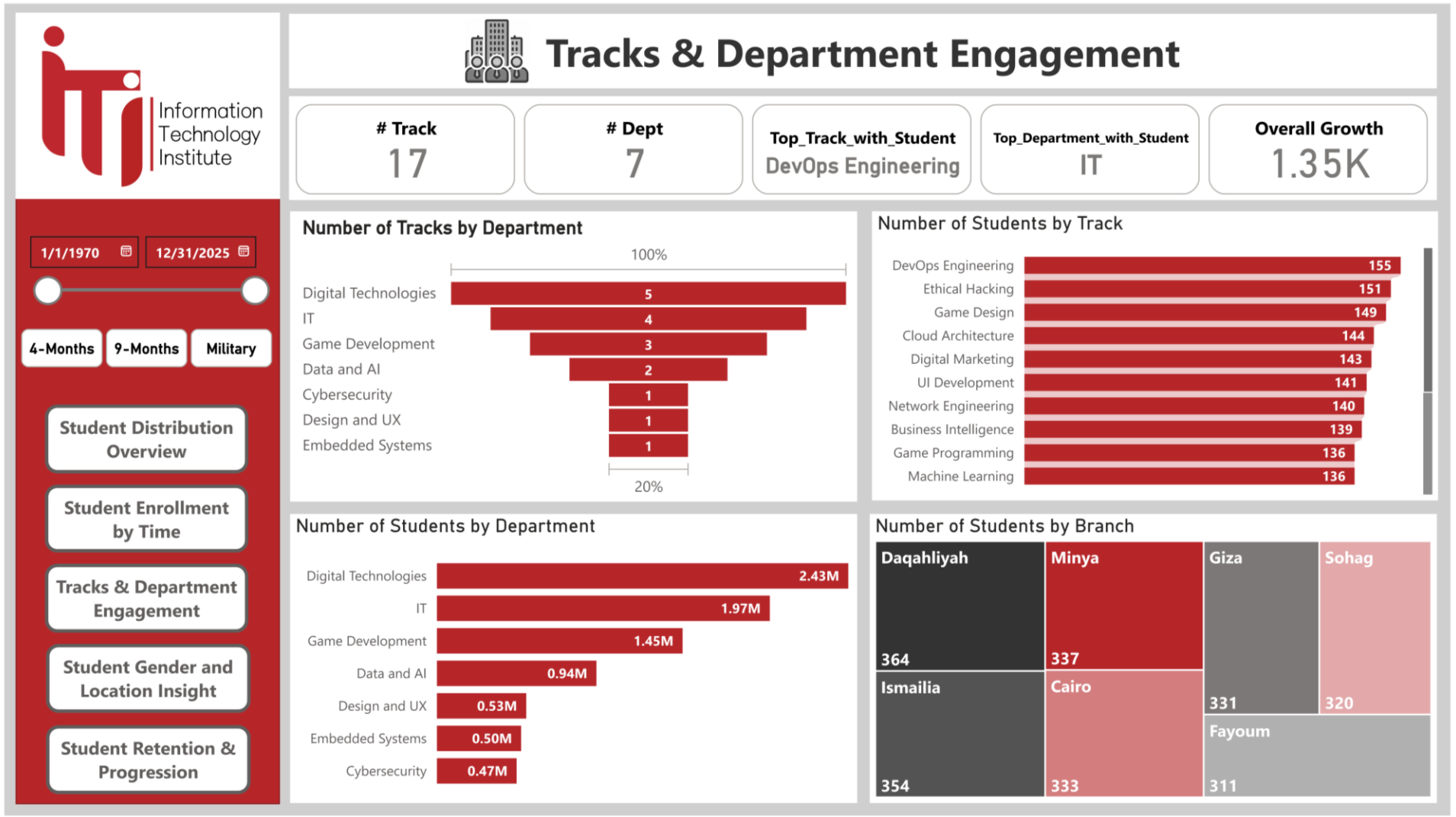
Student Distribution Overview Dashboard



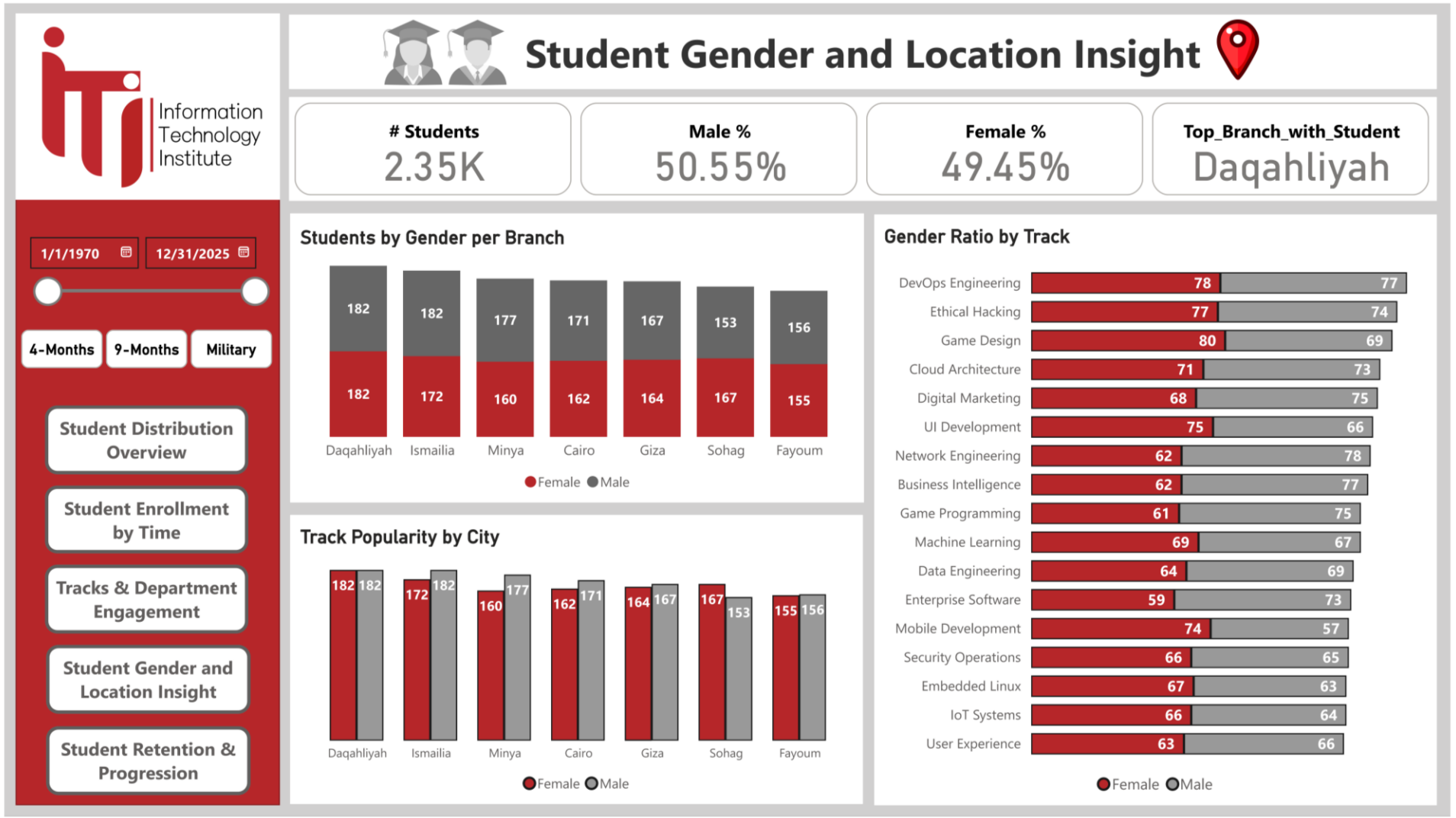
Student Enrollment by Time Dashboard



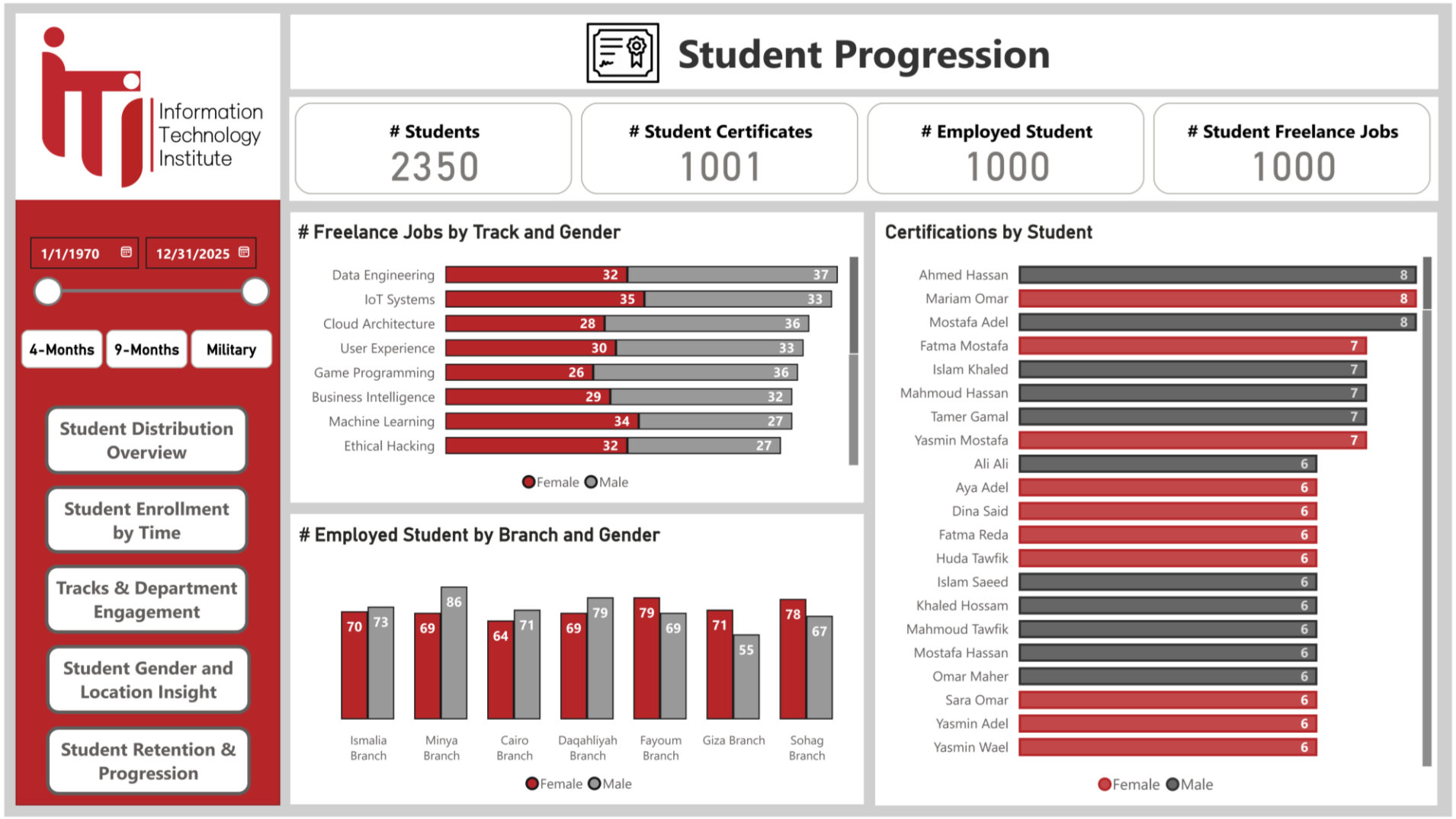
Tracks & Department Engagement Dashboard



Student Gender and Location Insight Dashboard



Student Progression Dashboard



Student Certificate Details DrillThrough

Students Certificate Details

FullName	AWS Certified Data Analytics - Specialty	Certified Ethical Hacker (CEH)	Certified Information Systems Security Professional (CISSP)	CompTIA Security+	Full-Stack Web Development Certificate	Google Data Analytics Professional Certificate	Java SE Programmer Certification (OCPJP)	Microsoft Certified: Azure Developer Associate	M Pov
Ahmed Ali			1			1			
Ahmed Ezzat									
Ahmed Gamal						1			
Ahmed Hani							1		
Ahmed Hassan	1			1	1			1	
Ahmed Helmy									
Ahmed Khaled			1					1	
Ahmed Khalil			1						
Ahmed Magdy		2							
Ahmed Maher						1			
Ahmed Mahmoud							1		
Ahmed Mostafa	1	1		1		1			
Ahmed Omar									
Ahmed Saad			1						
Ahmed Sabry									
Ahmed Saeed								1	
Ahmed Said	1								
Ahmed Sayed									
Ahmed Tarek								1	
Ahmed Tawfik				1			1	1	
Ahmed Wael							1		
Ali Adel				2		1			
Ali Ali					3		1		
Ali Ezzat									
Ali Gamal						1			
Ali Hassan									
Ali Maher			1				1		
Ali Mostafa									
Total	**69**	**88**	**72**	**69**	**73**	**69**	**66**	**65**	

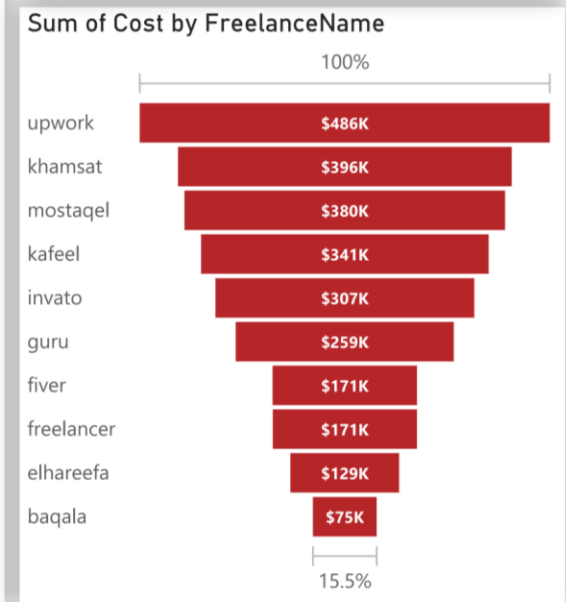
Students Freelance Details DrillThrough

Students Freelance Details

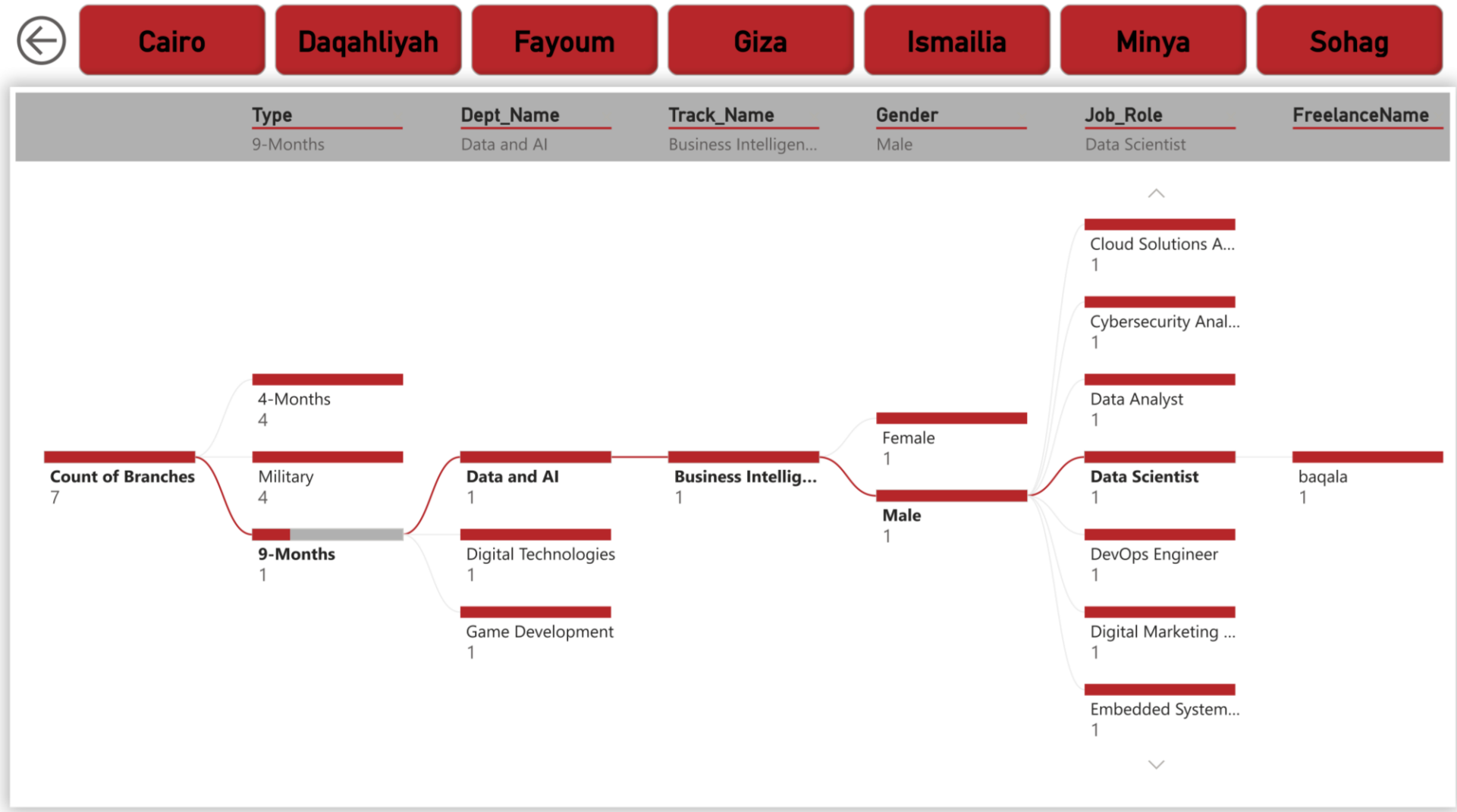
FullName	baqala	elhareefa	fiver	freelancer	guru	invato	kafeel	khamsat	mostaqel	upwork	Total
Ahmed Ali	$501		$1,533	$2,199					$4,172	$4,730	**$13,135**
Ahmed Ezzat		$1,051									**$1,051**
Ahmed Gamal				$2,036					$4,280		**$6,316**
Ahmed Hani				$3,865			$3,547				**$7,412**
Ahmed Hassan		$2,452	$1,557		$2,735	$3,145		$3,994		$9,623	**$23,506**
Ahmed Helmy				$2,160							**$2,160**
Ahmed Khaled	$666						$3,326				**$3,992**
Ahmed Khalil	$575			$2,266							**$2,841**
Ahmed Magdy		$1,095				$5,680					**$6,775**
Ahmed Maher									$4,317		**$4,317**
Ahmed Mahmoud			$1,816				$3,491				**$5,307**
Ahmed Mostafa		$1,322			$2,383	$2,990		$3,727	$4,238		**$14,660**
Ahmed Omar					$2,583						**$2,583**
Ahmed Saad	$650			$2,086							**$2,736**
Ahmed Sabry	$865				$2,546						**$3,411**
Ahmed Saeed			$1,578				$3,269				**$4,847**
Ahmed Said		$2,389								$4,699	**$7,088**
Ahmed Sayed					$2,671						**$2,671**
Ahmed Tarek			$1,697				$3,383				**$5,080**
Ahmed Tawfik							$6,866	$3,956			**$10,822**
Ahmed Wael				$3,939				$3,691			**$7,630**
Ali Adel								$12,057			**$12,057**
Ali Ali				$2,092				$3,707	$4,478	$14,134	**$24,411**
Ali Ezzat					$2,319						**$2,319**
Ali Gamal	$837		$1,472					$4,051			**$6,360**

Track Name

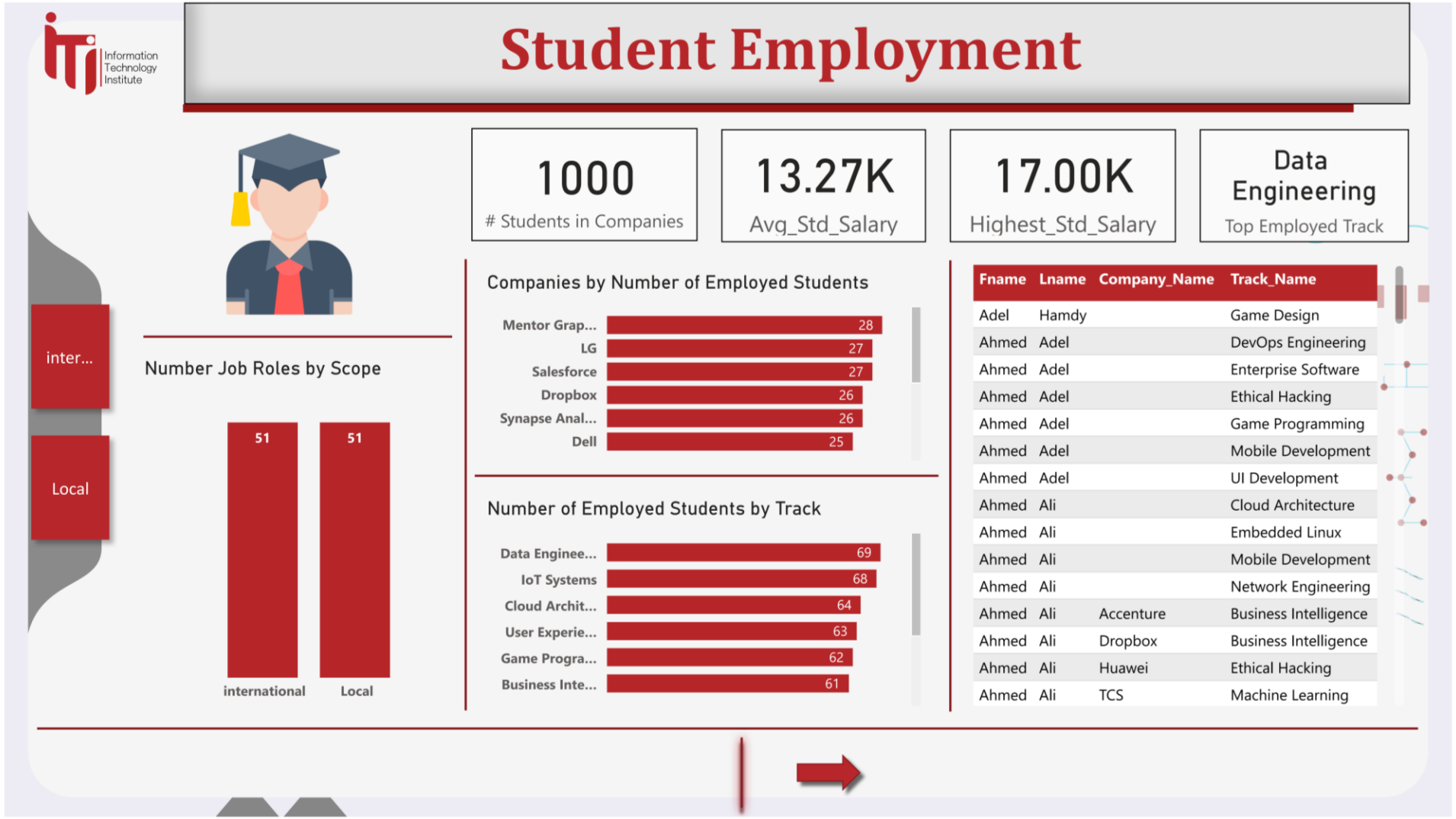
Business Intelligence



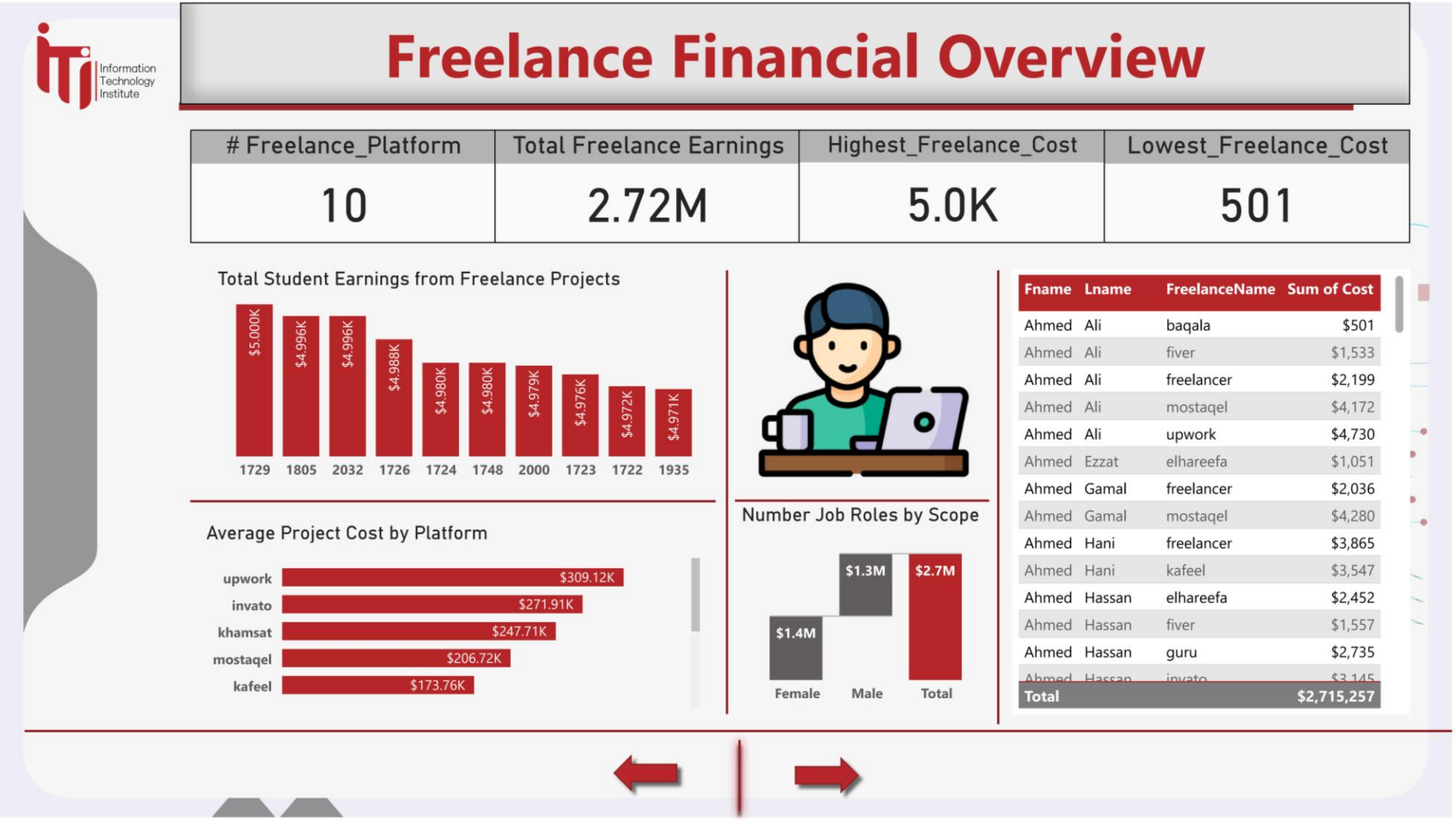
ITI System Details DrillThrough



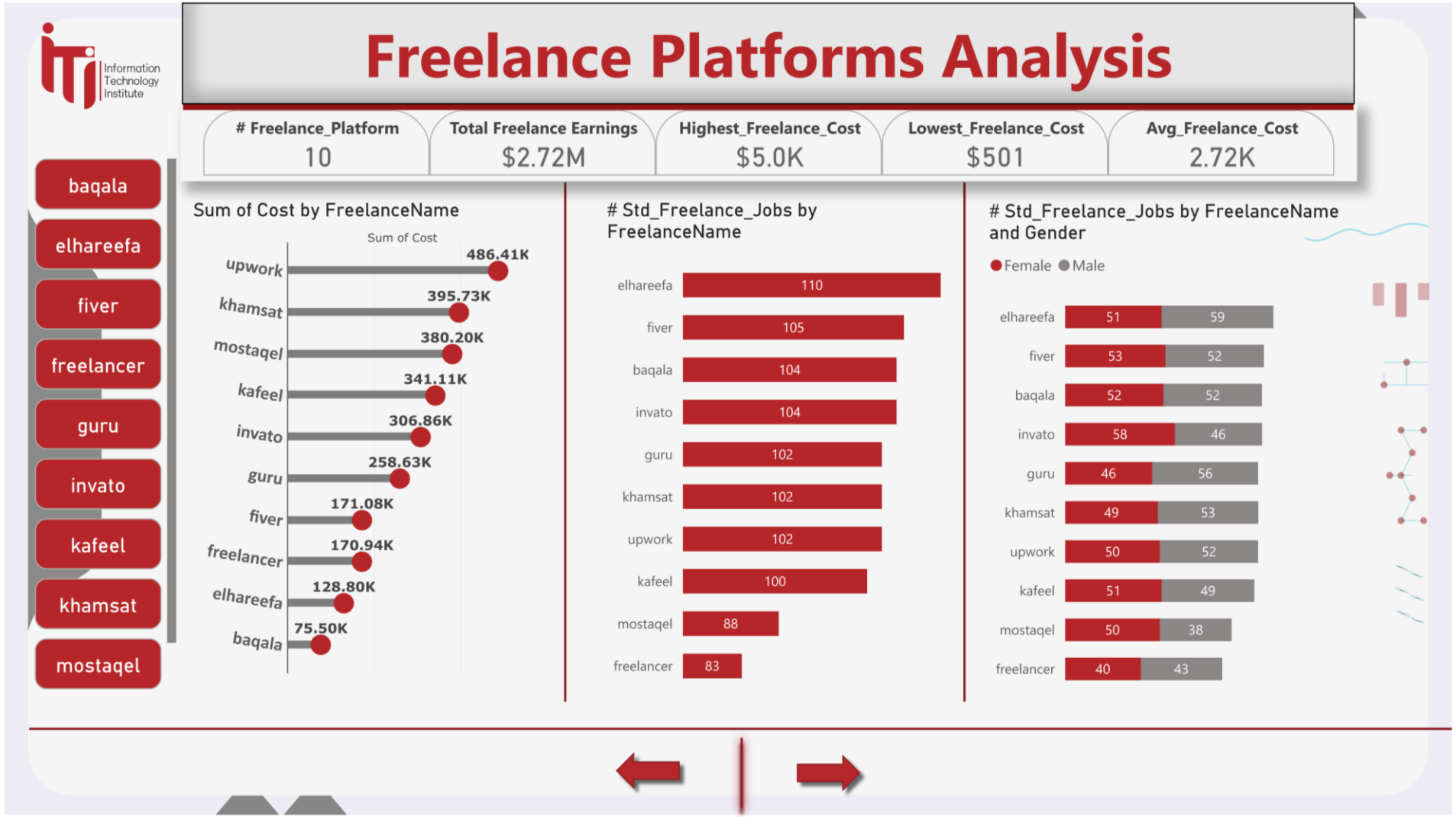
Student Employment Dashboard



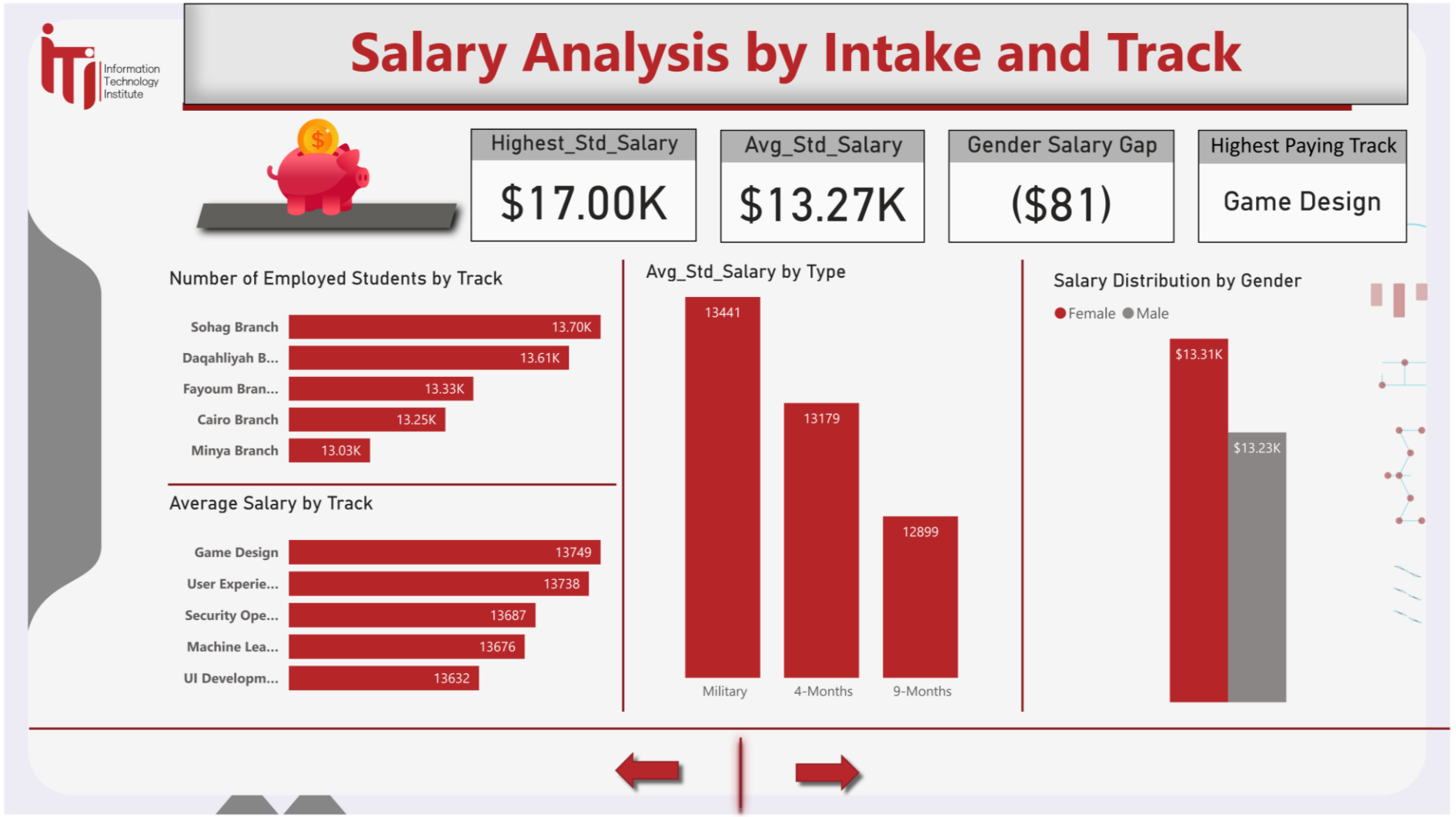
Freelance Financial Overview Dashboard



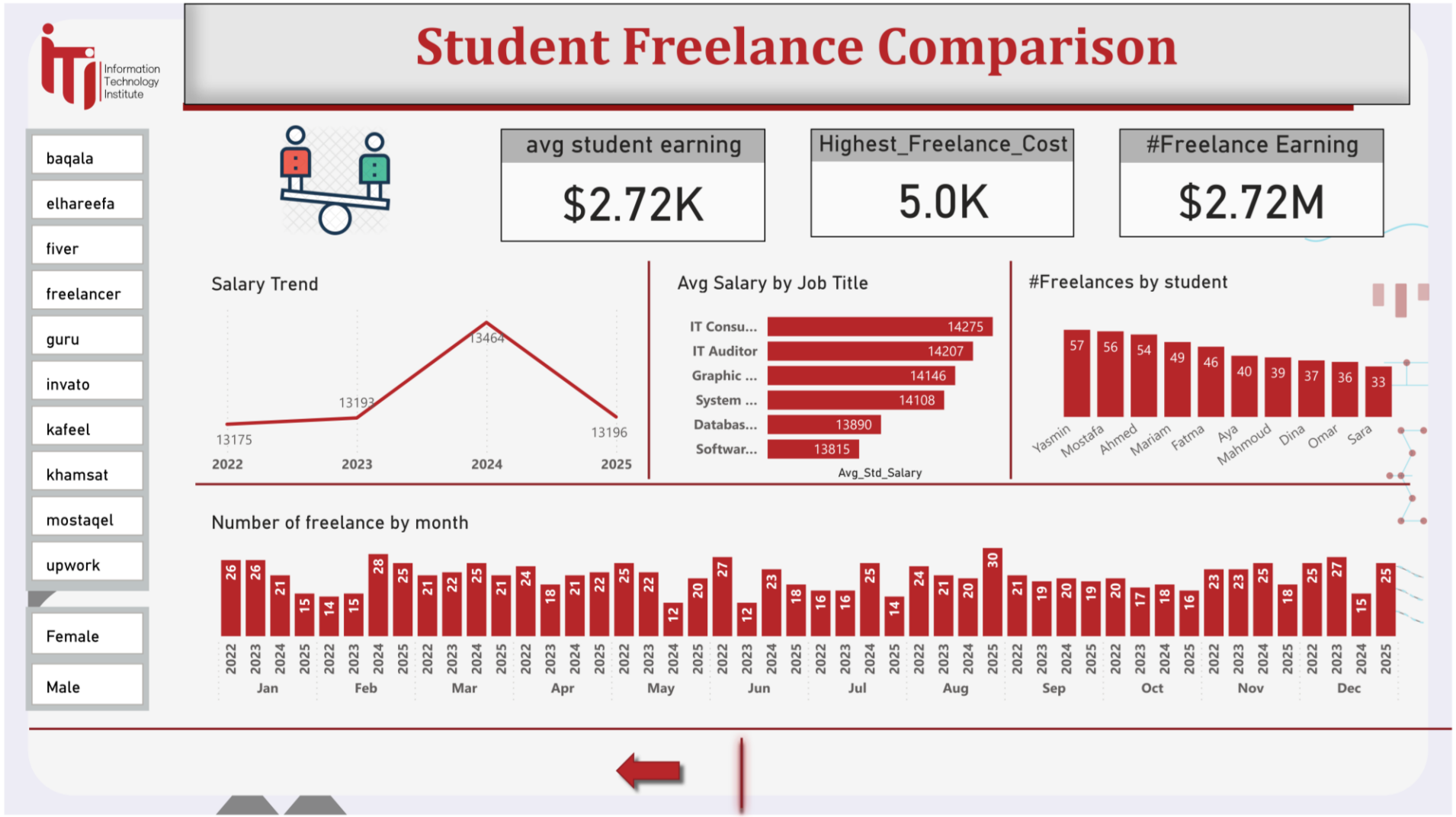
Freelance Platforms Analysis Dashboard



Salary Analysis by Intake and Track Dashboard



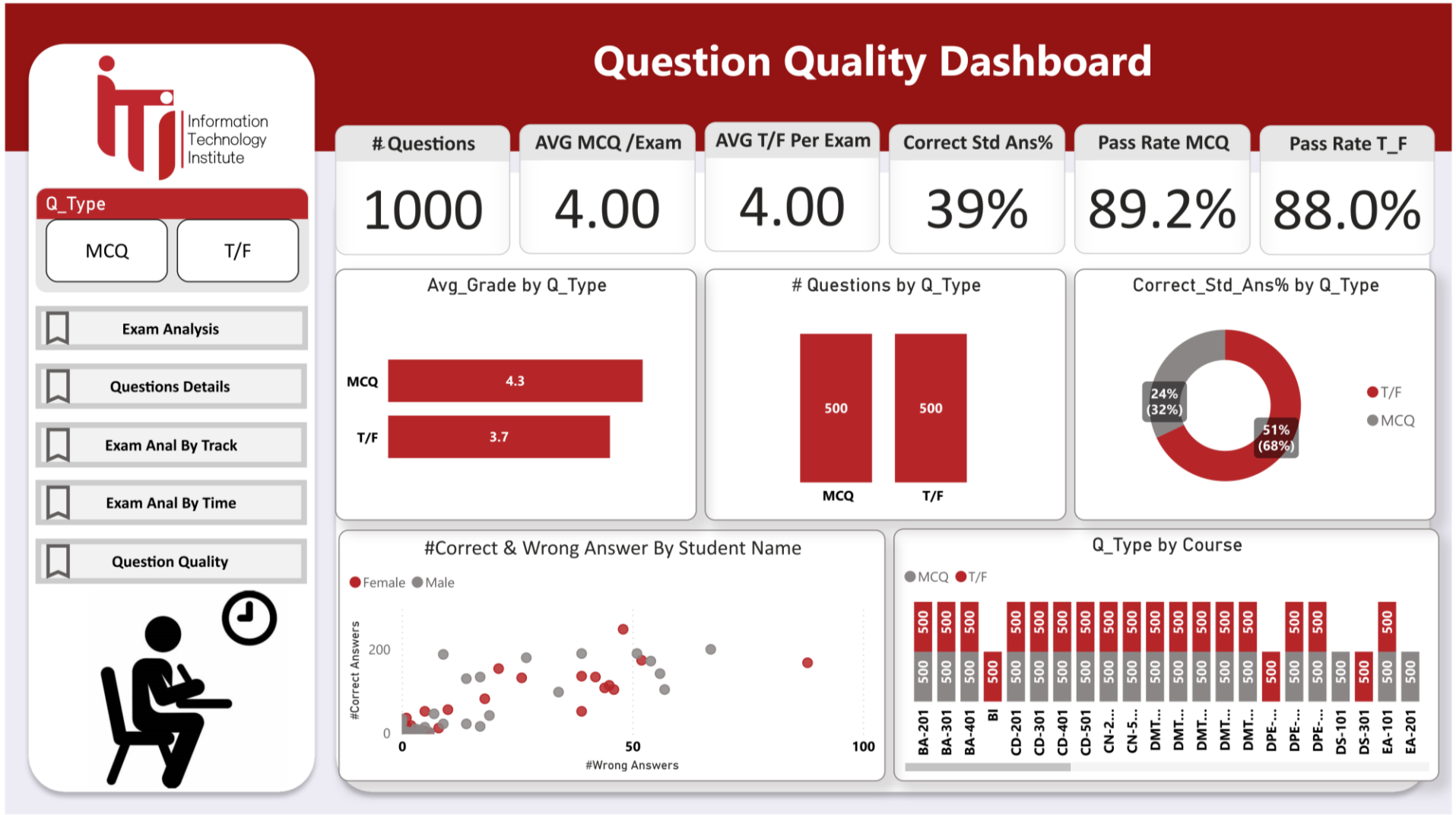
Student Freelance Comparison Dashboard



Branches & Tracks Details DrillThrough

Track_Name	Cairo Branch	Daqahliyah Branch	Fayoum Branch	Sohag Branch	**Total**
Game Design		13,749.37			**13,749.37**
Game Programming		13,326.96	13,086.17		**13,280.35**
IoT Systems			13,010.96		**13,010.96**
Machine Learning			13,676.18		**13,676.18**
Mobile Development	13,125.42		13,901.43		**13,224.18**
Network Engineering	13,162.21				**13,162.21**
Security Operations	13,625.80			13,751.68	**13,686.57**
UI Development				13,632.43	**13,632.43**
User Experience				13,737.86	**13,737.86**
Total	**13,252.15**	**13,485.36**	**13,333.35**	**13,701.26**	**13,440.72**

Question Quality Dashboard



Question Details Dashboard

Questions Details

Exam Anal By Time | Exam Analysis | Exam Anal By Track | Question Quality

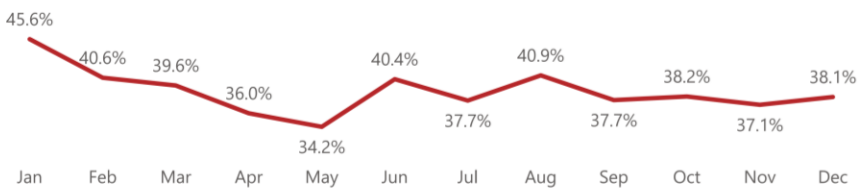
Year: All

Top Challenging Questions

What does HTTPS stand for?
21.2%
Success_Rate for Qst

Which practice improves web security?
22.1%

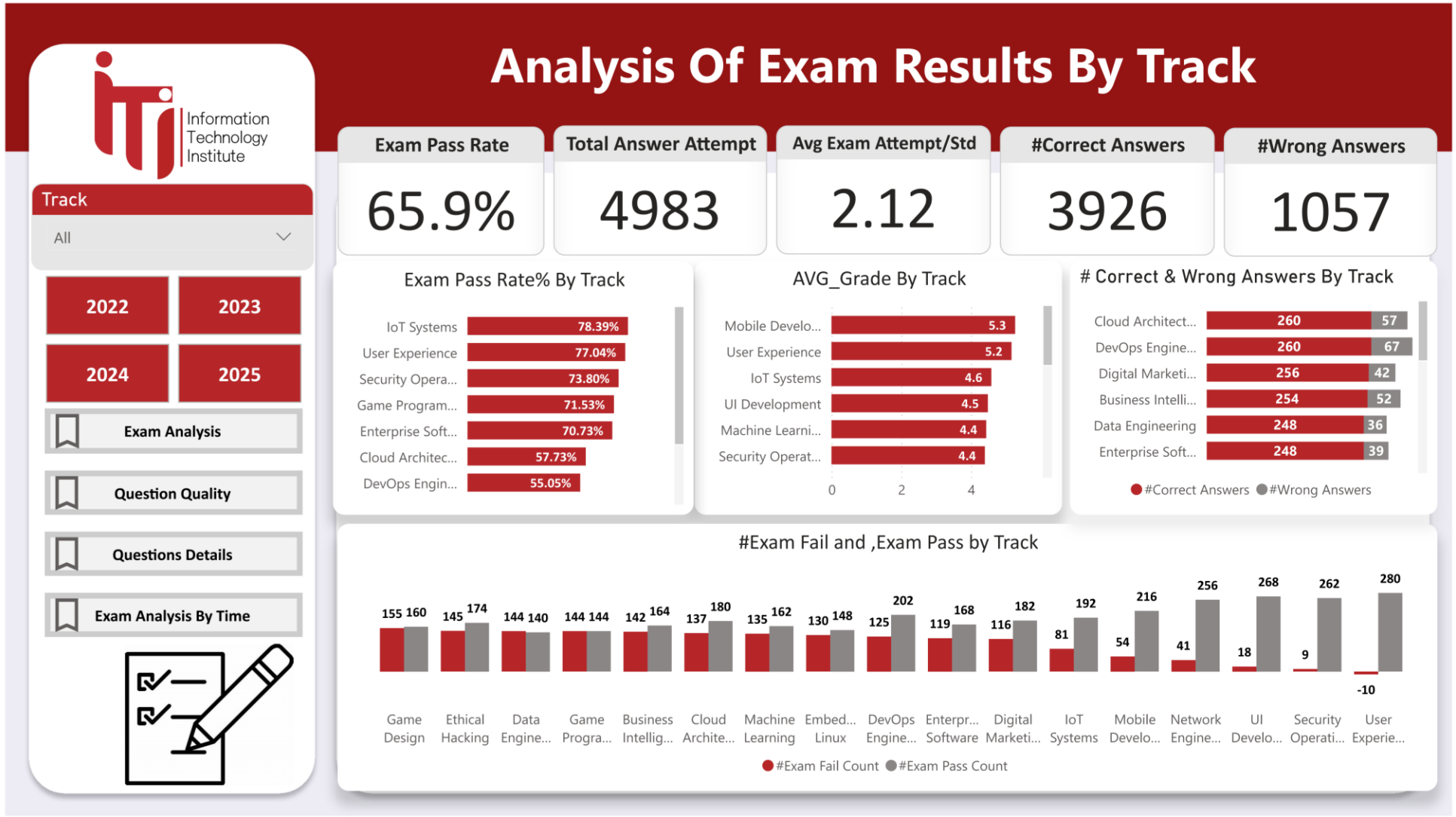
Success_Rate for Qst by Mon



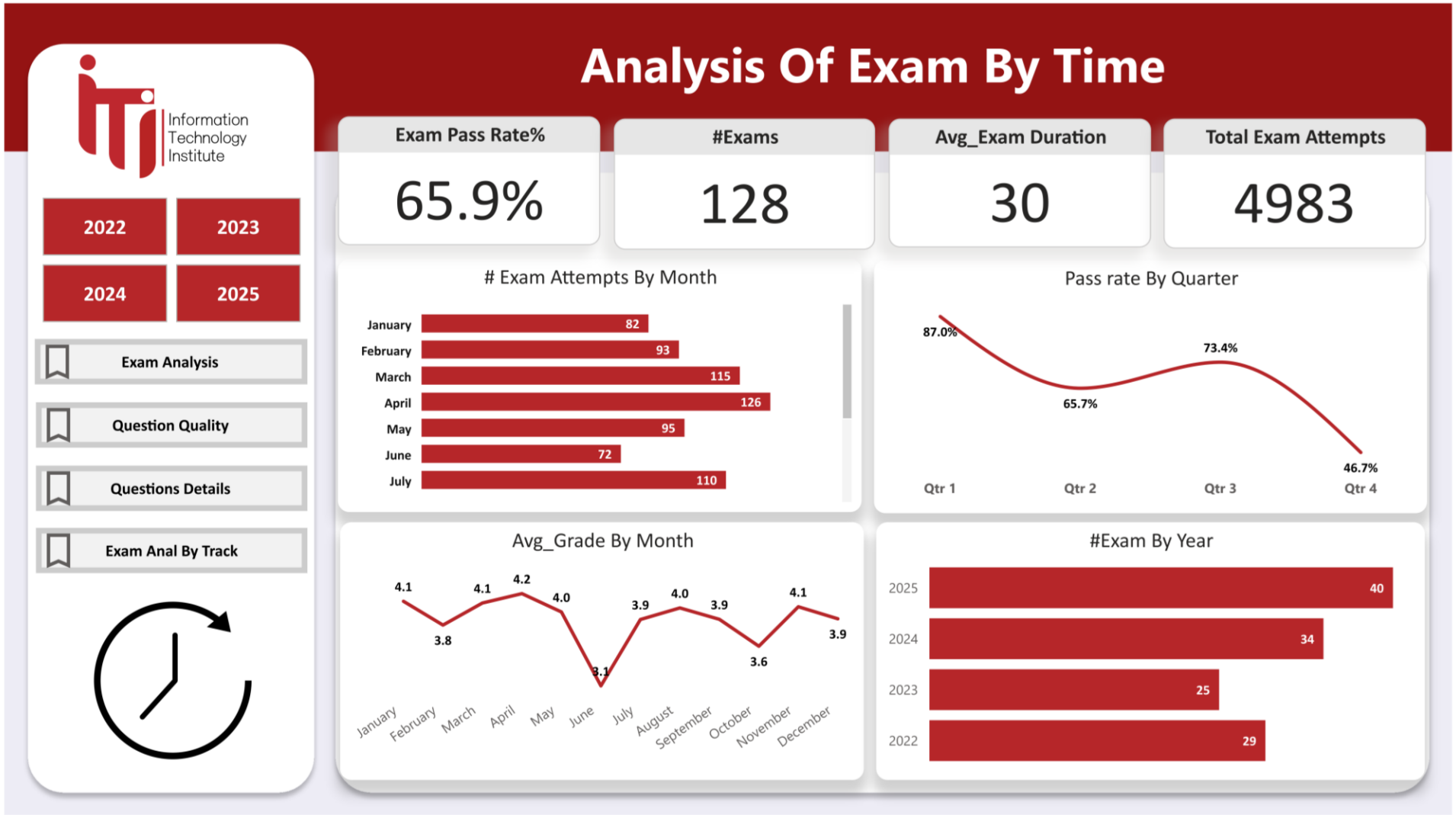
Questions_Details

QST_Content	Q_Type	Total Question Attempts	#Correct Answers	#Wrong Answers	Pass Rate T_F	Pass Rate MCQ	#Exam Fail Count	#Exam Pass Count
Which practice improves web security?	MCQ	1168	258	324		88.2%	186	396
What does HTTPS stand for?	MCQ	868	184	250		88.9%	92	342
What is a common web application vulnerability?	MCQ	828	240	174		90.3%	84	330
What is the goal of cybersecurity?	MCQ	812	216	190		87.4%	108	298
Which of the following is an example of multi-factor authentication?	MCQ	732	162	204		91.8%	82	284
Encryption helps in securing communication.	T/F	644	280	42	87.3%		126	196
Data breaches can be prevented by firewalls.	T/F	706	406	0	86.7%		165	188
HTTPS provides more security than HTTP.	T/F	560	278	2	86.4%		104	176
Cybersecurity involves only hardware protection.	T/F	582	266	25	86.9%		117	174
Using strong passwords enhances account safety.	T/F	548	316	0	92.3%		100	174
Malware is a physical threat to hardware.	T/F	556	290	0	90.6%		108	170
Cybersecurity includes protecting networks and data.	T/F	598	286	13	87.6%		133	166
Phishing attacks target software vulnerabilities.	T/F	506	242	11	87.0%		93	160
Total		**10028**	**3926**	**1057**	**88.0%**	**89.2%**	**1685**	**3298**

Analysis of Exam Results by Dashboard



Analysis of Exam by Time Dashboard



Thank You