



ITI Examination System

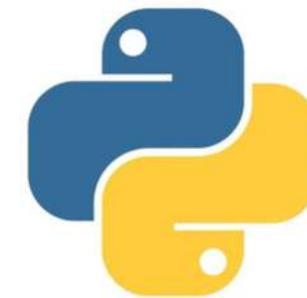
Agenda

- 1. Introduction
- 2. Timeline
- 3. Tools Used
- 4. Database Design
- 5. Stored Procedures
- 6. SSRS Reports
- 7. Data Warehousing
- 8. Power BI Dashboards
- 9. Power Apps Application
- 10. Chatbot
- 11. Conclusion

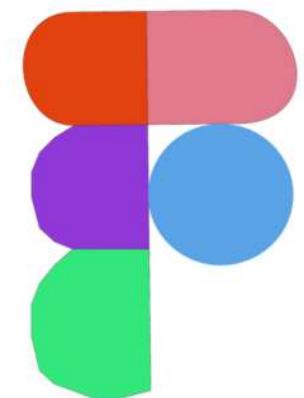
Introduction

This project presents an Online Examination System developed for ITI to automate exam creation, grading, and reporting. It integrates a structured SQL Server database, desktop application, and reporting tools such as SSRS and Power BI. The system aims to simplify exam management, improve data accuracy, and support ITI staff in monitoring student performance efficiently.

Tools Used



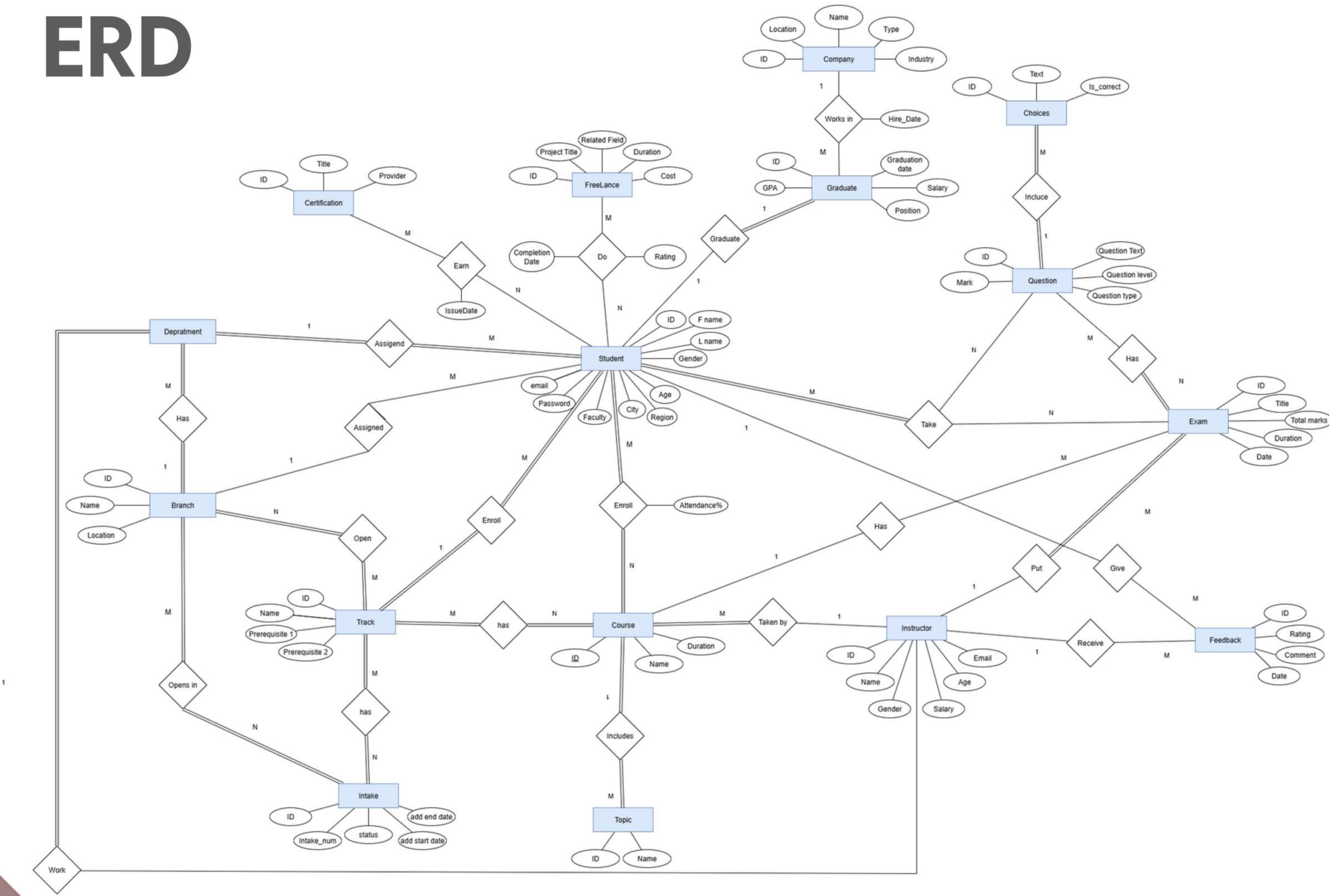
PowerBI



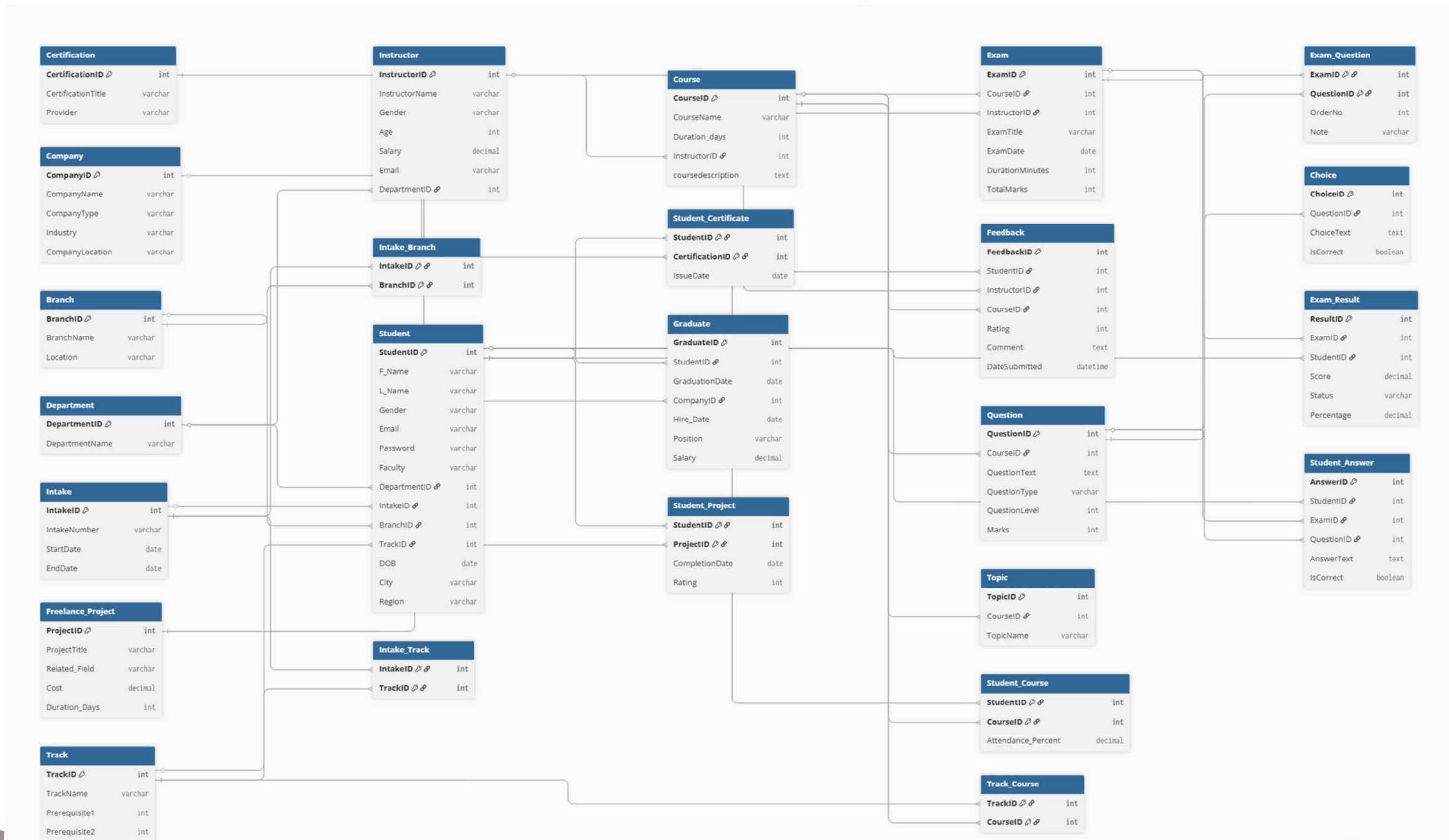
Canva



ERD



Mapping



Data Generation

Category	Details
Students	2053 students in total, including 913 graduates.
Intakes	3 intakes — two 4-month programs and one ongoing 9-month program.
Tracks	20 technical tracks covering various IT specializations.
Branches	22 branches across different regions.
Instructors	40 instructors with feedback provided by students.
Courses & Exams	50 courses and 50 exams consisting of MCQ and True/False question types.
Companies	20 companies employing graduates (local, multinational, and global).
Achievements	Students gained certifications and completed freelance projects.

Stored Procedure

- **Exam Stored Procedures:**
 - Exam Generation
 - Exam Answers
 - Exam Correction
- **CRUD Stored Procedures.**
- **Stored Procedures for SSRS Reports.**

Stored Procedure

Exam Generation

```
CREATE OR ALTER PROCEDURE sp_GenerateExam
    @CourseID INT,
    @InstructorID INT,
    @ExamTitle VARCHAR(100),
    @NumMCQ INT,
    @NumTF INT
AS
BEGIN
    SET NOCOUNT ON;

    DECLARE @ExamID INT;
    DECLARE @TotalMarks INT;

    INSERT INTO Exam (CourseID, InstructorID, ExamTitle, ExamDate, DurationMinutes, TotalMarks)
    VALUES (@CourseID, @InstructorID, @ExamTitle, GETDATE(), 60, 0);

    SET @ExamID = SCOPE_IDENTITY();

    INSERT INTO Exam_Question (ExamID, QuestionID, OrderNo)
    SELECT TOP (@NumMCQ)
        @ExamID AS ExamID,
        q.QuestionID,
        ROW_NUMBER() OVER (ORDER BY NEWID()) AS OrderNo
    FROM Question q
    WHERE q.CourseID = @CourseID AND q.QuestionType = 'MCQ'
    ORDER BY NEWID();

    INSERT INTO Exam_Question (ExamID, QuestionID, OrderNo)
    SELECT TOP (@NumTF)
        @ExamID AS ExamID,
        q.QuestionID,
        (SELECT COUNT(*) FROM Exam_Question WHERE ExamID = @ExamID)
        + ROW_NUMBER() OVER (ORDER BY NEWID()) AS OrderNo
    FROM Question q
    WHERE q.CourseID = @CourseID AND q.QuestionType = 'TF'
    ORDER BY NEWID();

    SELECT @TotalMarks = SUM(q.Marks)
    FROM Exam_Question eq
    INNER JOIN Question q ON eq.QuestionID = q.QuestionID
    WHERE eq.ExamID = @ExamID;

    -- Update Exam total marks
    UPDATE Exam
    SET TotalMarks = @TotalMarks
    WHERE ExamID = @ExamID;

    SELECT
        e.ExamID,
        e.ExamTitle,
        e.CourseID,
        COUNT(eq.QuestionID) AS TotalQuestions,
        e.TotalMarks
    FROM Exam e
    JOIN Exam_Question eq ON e.ExamID = eq.ExamID
    WHERE e.ExamID = @ExamID
    GROUP BY e.ExamID, e.ExamTitle, e.CourseID, e.TotalMarks;
END;
```

Stored Procedure

Exam Answers

```
CREATE PROCEDURE sp_AddStudentAnswers
    @StudentID INT,
    @ExamID INT,
    @Answers StudentAnswerList READONLY
AS
BEGIN
    SET NOCOUNT ON;

    -- Validation: ensure the student hasn't already submitted
    IF EXISTS (SELECT 1 FROM Student_Answer WHERE StudentID = @StudentID AND ExamID = @ExamID)
    BEGIN
        RAISERROR('Answers for this student and exam already exist.', 16, 1);
        RETURN;
    END

    -- Validation: ensure exam is valid
    IF NOT EXISTS (SELECT 1 FROM Exam WHERE ExamID = @ExamID)
    BEGIN
        RAISERROR('Invalid ExamID.', 16, 1);
        RETURN;
    END

    -- 1@ Insert all answers
    INSERT INTO Student_Answer (StudentID, ExamID, QuestionID, AnswerText)
    SELECT
        @StudentID,
        @ExamID,
        a.QuestionID,
        a.AnswerText
    FROM @Answers a
    WHERE EXISTS (
        SELECT 1 FROM Exam_Question eq
        WHERE eq.ExamID = @ExamID AND eq.QuestionID = a.QuestionID
    );

    -- 2@ Return confirmation summary
    SELECT
        COUNT(*) AS InsertedAnswers,
        @StudentID AS StudentID,
        @ExamID AS ExamID
    FROM Student_Answer
    WHERE StudentID = @StudentID AND ExamID = @ExamID;
```

Stored Procedure

Exam Correction

```
CREATE OR ALTER PROCEDURE sp_CorrectExam
    @StudentID INT,
    @ExamID INT
AS
BEGIN
    SET NOCOUNT ON;

    IF NOT EXISTS (
        SELECT 1
        FROM Student_Answer
        WHERE StudentID = @StudentID AND ExamID = @ExamID
    )
    BEGIN
        RAISERROR('No answers found for this student and exam.', 16, 1);
        RETURN;
    END;
    UPDATE sa
    SET sa.IsTrue = 
        CASE
            WHEN EXISTS (
                SELECT 1
                FROM Choice c
                WHERE c.QuestionID = sa.QuestionID
                AND c.IsTrue = 1
                AND LOWER(LTRIM(RTRIM(sa.AnswerText))) = LOWER(LTRIM(RTRIM(c.ChoiceText)))
            )
            THEN 1
            ELSE 0
        END
    FROM Student_Answer sa
    WHERE sa.StudentID = @StudentID
    AND sa.ExamID = @ExamID;

    DECLARE @TotalScore DECIMAL(10,2);
    DECLARE @MaxScore DECIMAL(10,2);

    SELECT @TotalScore = ISNULL(SUM(q.Marks), 0)
    FROM Student_Answer sa
    JOIN Question q ON sa.QuestionID = q.QuestionID
    WHERE sa.StudentID = @StudentID
    AND sa.ExamID = @ExamID
    AND sa.IsTrue = 1;

    SELECT @MaxScore = ISNULL(SUM(q.Marks), 0)
    FROM Exam_Question eq
    JOIN Question q ON eq.QuestionID = q.QuestionID
    WHERE eq.ExamID = @ExamID;

    IF @MaxScore = 0
    BEGIN
        RAISERROR('No questions or marks found for this exam.', 16, 1);
        RETURN;
    END;

    DECLARE @Percentage DECIMAL(5,2) = ROUND((@TotalScore / @MaxScore) * 100, 2);
    DECLARE @ResultStatus VARCHAR(10) = CASE
        WHEN @Percentage >= 60 THEN 'Pass'
        ELSE 'Fail'
    END;
```

Stored Procedure

CRUD Stored Procedures:

We have created a **64** stored procedures for inserting, updating Delete and other operations on main tables.

Stored Procedure

Entity	Stored Procedures (Examples)
Student	sp_CreateStudent • sp_GetStudent • sp_UpdateStudent • sp_DeleteStudent
Instructor	sp_CreateInstructor • sp_GetInstructor • sp_UpdateInstructor • sp_DeleteInstructor
Course	sp_CreateCourse • sp_GetCourses • sp_UpdateCourse • sp_DeleteCourse
Question	sp_CreateQuestion • sp_GetQuestions • sp_UpdateQuestion • sp_DeleteQuestion
Feedback	sp_CreateFeedback • sp_GetFeedback • sp_UpdateFeedback • sp_DeleteFeedback
Department	sp_CreateDepartment • sp_GetDepartments • sp_UpdateDepartment • sp_DeleteDepartment

Stored Procedure

SSRS reports retrieve data using SQL Stored Procedures, ensuring optimized queries.

- Students Information By Department
- Students' Questions & Answers
- Student Grades For All Courses
- Instructor's Courses
- Course Topics
- Exam Questions

SSRS Reports

```
CREATE OR ALTER PROCEDURE sp_getStudentFromDept
    @DepartmentID INT = NULL
AS
BEGIN
    SELECT
        s.StudentID,
        s.F_Name,
        s.L_Name,
        s.Email,
        d.DepartmentID,
        s.Gender,
        b.BranchName,
        t.TrackName
    FROM Student s
    JOIN Department d
        ON s.DepartmentID = d.DepartmentID
    join Branch b
        on b.BranchID = s.BranchID
    join Track t
        on t.TrackID = s.TrackID
    WHERE (@DepartmentID IS NULL OR s.DepartmentID = @DepartmentID)
END;
GO
```



Student information by department: 1

Student ID	Full Name	Gender	Email	Branch Name	Track Name
5012	AliSamy	Male	ali.samyy@yahoo.com	Smart Village	Full Stack Web Development
5018	ZeinabMoustafa	Female	zeinab.moustafa@yahoo.com	Smart Village	Full Stack Web Development
5019	BoulesEmad	Male	boules.emad@yahoo.com	Smart Village	Full Stack Web Development
5024	MahmoudTarek	Male	mahmoud.tarek@gmail.com	Smart Village	Social Media Marketing
5029	SalmaMostafa	Female	salma.mostafa@gmail.com	Smart Village	Social Media Marketing
5031	LamiaMohamed	Female	lamia.mohamed@hotmail.com	Smart Village	Social Media Marketing
5033	HanaMoustafa	Female	hana.moustafa@hotmail.com	Smart Village	Cloud Computing and Automation
5034	SherifMahmoud	Male	sherif.mahmoud@hotmail.com	Smart Village	Cloud Computing and Automation
5036	Amiralbrahim	Female	amira.ibrahim@hotmail.com	New Capital	Back-End Development
5038	AliSaeed	Male	ali.saeed@hotmail.com	New Capital	Back-End Development
5040	WalidEmad	Male	walid.emad@hotmail.com	New Capital	Back-End Development

SSRS Reports

```
CREATE OR ALTER PROCEDURE sp_GetStudentAnsweredQuestions
    @ExamID INT,
    @StudentID INT
AS
BEGIN
    SET NOCOUNT ON;

    SELECT
        e.ExamID,
        s.F_Name,
        s.L_Name,
        q.QuestionText,
        sa.AnswerText AS StudentAnswer
    FROM Student_Answer sa
    INNER JOIN Exam e ON sa.ExamID = e.ExamID
    INNER JOIN Course c ON e.CourseID = c.CourseID
    INNER JOIN Question q ON sa.QuestionID = q.QuestionID
    INNER JOIN Student s ON sa.StudentID = s.StudentID
    LEFT JOIN Choice ch ON q.QuestionID = ch.QuestionID AND ch.IsTrue = 1
    WHERE sa.ExamID = @ExamID
        AND sa.StudentID = @StudentID
    ORDER BY q.QuestionID;
END;
GO
```



Answers Of Student :Mahmoud Hany (ID:5010) in Exam: #1100

Question Text	Student Answer
What is Power BI primarily used for?	Business Intelligence and Data Visualization
True or False: Power BI is a Microsoft product.	False
Which component is used to create reports in Power BI?	Power BI Desktop
True or False: Power BI Desktop is web-based only.	False
What is a DAX formula used for in Power BI?	Creating calculated columns and measures
Which visualization shows trends over time most effectively?	Pie Chart
True or False: Power BI can connect to Excel files.	True
What is the purpose of Power Query in Power BI?	Data transformation and preparation
True or False: Dashboards and reports are the same in Power	False

SSRS Reports

```
CREATE OR ALTER PROCEDURE sp_StudentCourseGrades
    @StudentID INT
AS
BEGIN
    SET NOCOUNT ON;

    SELECT
        s.StudentID,
        s.F_Name,
        s.L_Name,
        c.CourseName,
        e.TotalMarks AS ExamTotalMarks,
        er.Score AS StudentScore,
        er.Percentage AS StoredPercentage,
        er.Status,
        e.ExamDate
    FROM Exam_Result er
    INNER JOIN Exam e ON er.ExamID = e.ExamID
    INNER JOIN Course c ON e.CourseID = c.CourseID
    INNER JOIN Student s ON er.StudentID = s.StudentID
    WHERE s.StudentID = @StudentID
    ORDER BY e.ExamDate DESC;
END;
go
```



Grades of the student: Mahmoud Hany (ID: 5010)

Course Name	Exam Total Marks	Student Score	Score Percentage	Status
Django Framework	17.00	15.00	88.24	Pass
Flask Web Development	19.00	17.00	89.47	Pass

SSRS Reports

```
CREATE OR ALTER PROCEDURE sp_GetInstructorCoursesAndStudents
    @InstructorID INT
AS
BEGIN
    SET NOCOUNT ON;

    SELECT
        i.InstructorID,
        i.InstructorName,
        c.CourseID,
        c.CourseName,
        COUNT(DISTINCT sc.StudentID) AS NumberOfStudents
    FROM Instructor i
    INNER JOIN Course c ON i.InstructorID = c.InstructorID
    LEFT JOIN Student_Course sc ON c.CourseID = sc.CourseID
    WHERE i.InstructorID = @InstructorID
    GROUP BY i.InstructorID, i.InstructorName, c.CourseID, c.CourseName
    ORDER BY c.CourseName;
END;
GO
```



Courses taught by instructor: Mona Ibrahim (ID: 1021)

Course Name	Number Of Students
Azure Fundamentals	101
Flask Web Development	282
Git and Version Control	189
Google Cloud Platform Basics	137
Machine Learning Basics	74

SSRS Reports

```
CREATE OR ALTER PROCEDURE sp_GetCourseTopics
    @CourseID INT
AS
BEGIN
    SET NOCOUNT ON;

    SELECT
        c.CourseID,
        c.CourseName,
        t.TopicName
    FROM Topic t
    INNER JOIN Course c ON t.CourseID = c.CourseID
    WHERE t.CourseID = @CourseID
    ORDER BY t.TopicName;

END;
go
```



Topics For Course ID:1

Course Name: Python Programming

Topic Name
Control Flow & Functions
Data Structures in Python
Modules & Libraries
Object-Oriented Programming
Python Basics
Working with Files

SSRS Reports



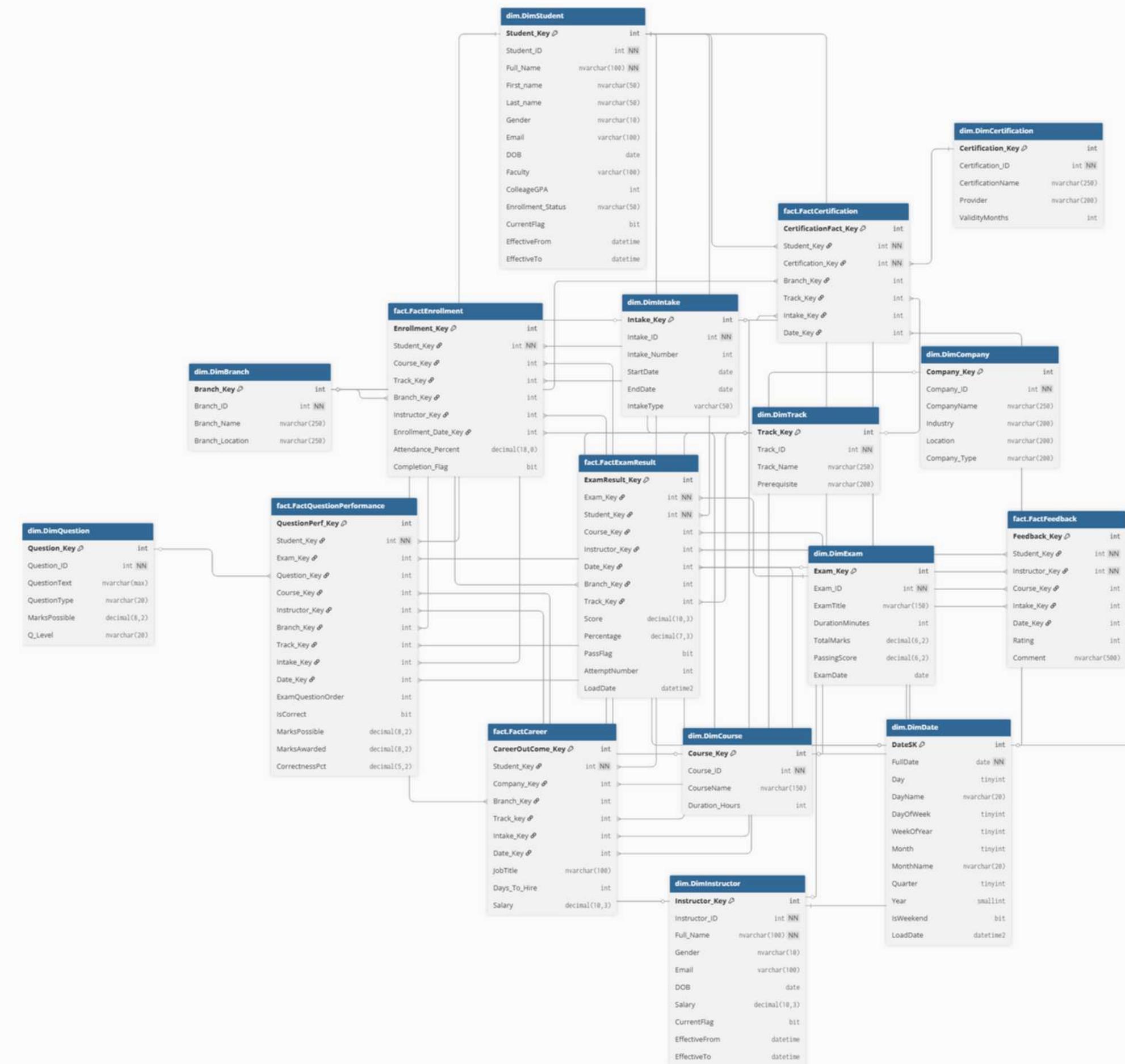
```
CREATE OR ALTER PROCEDURE sp_GetExamQuestionsWithChoices
    @ExamID INT
AS
BEGIN
    SET NOCOUNT ON;

    SELECT
        eq.OrderNo,
        q.QuestionID,
        q.QuestionText,
        q.QuestionType,
        q.Marks,
        c.ChoiceID,
        c.ChoiceText
    FROM Exam_Question eq
    INNER JOIN Question q
        ON eq.QuestionID = q.QuestionID
    LEFT JOIN Choice c
        ON q.QuestionID = c.QuestionID
    WHERE eq.ExamID = @ExamID
    ORDER BY eq.OrderNo, q.QuestionID, c.ChoiceID;
END;
GO
```

Exam Questions

- * What is Power BI primarily used for?
 - Business Intelligence and Data Visualization
 - Web Development
 - Video Editing
- * True or False: Power BI is a Microsoft product.
 - True
 - False
- * Which component is used to create reports in Power BI?
 - Power BI Desktop
 - Power BI Gateway
 - Power BI Embedded
- * True or False: Power BI Desktop is web-based only.
 - False
 - True
- * What is a DAX formula used for in Power BI?
 - Creating calculated columns and measures
 - Designing visualizations
 - Managing user permissions
- * Which visualization shows trends over time most effectively?
 - Line Chart
 - Pie Chart
 - Donut Chart
- * True or False: Power BI can connect to Excel files.
 - True
 - False

Data Warehouse



Facts and Grain Levels

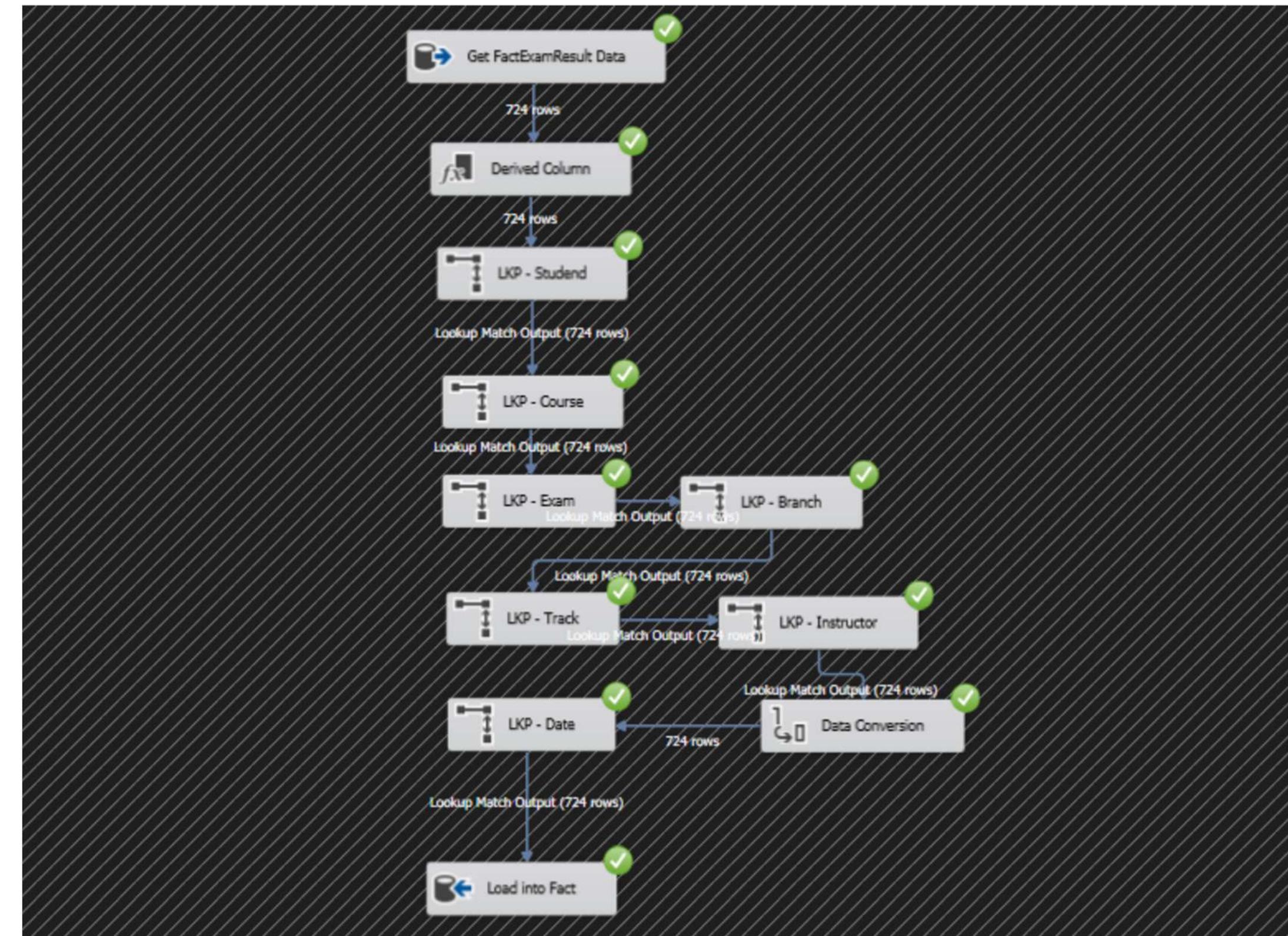
Fact Table	Grain Level
FactExamResult	One student's single exam attempt (Student × Exam × Exam Date)
FactQuestionPerformance	One student's response to one question in one exam attempt (Student × Exam × Question × Attempt)
FactEnrollment	one student's enrollment in one course
FactFeedback	One feedback submission from a student for a course/instructor at a specific time
FactCareer	One career placement event for a student (Student × Company × PlacementDate)
FactCertification	One student's certification (Student × Certification × Date)

Dimensions Overview

Dimension	Description
DimStudent	Student details – name, gender, faculty, GPA
DimInstructor	Instructor info – name, gender, salary
DimCourse	Course offered
DimExam	Exam metadata – title, marks, date
DimQuestion	Question text and type
DimDate	Calendar info (day, month, year)
DimBranch	branch Name , location
DimTrack	Track info
DimIntake	Intake type , start date and end date
DimCompany	Company for hiring
DimCertification	Certification name and provider

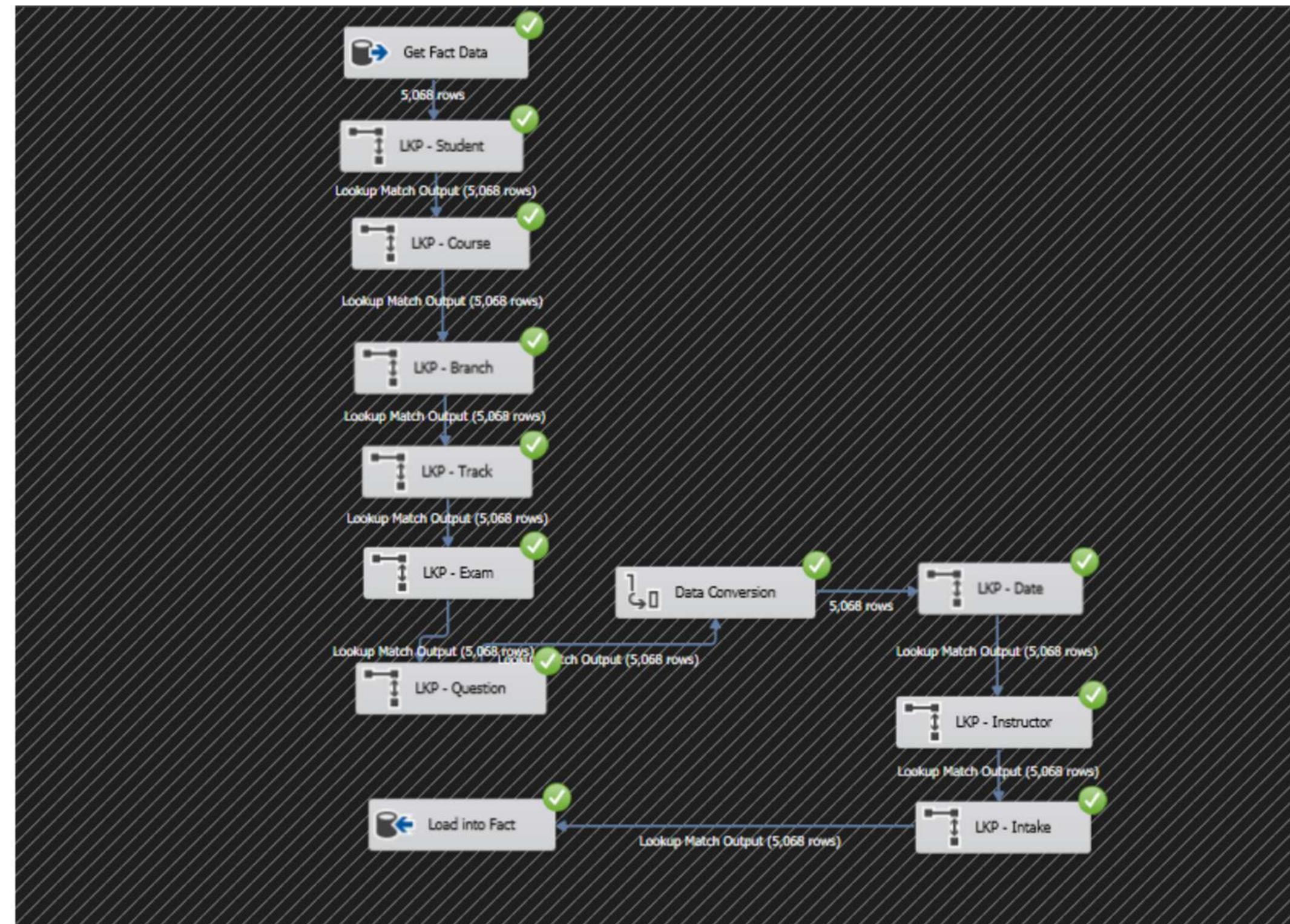
ETL

Exam_Result Fact



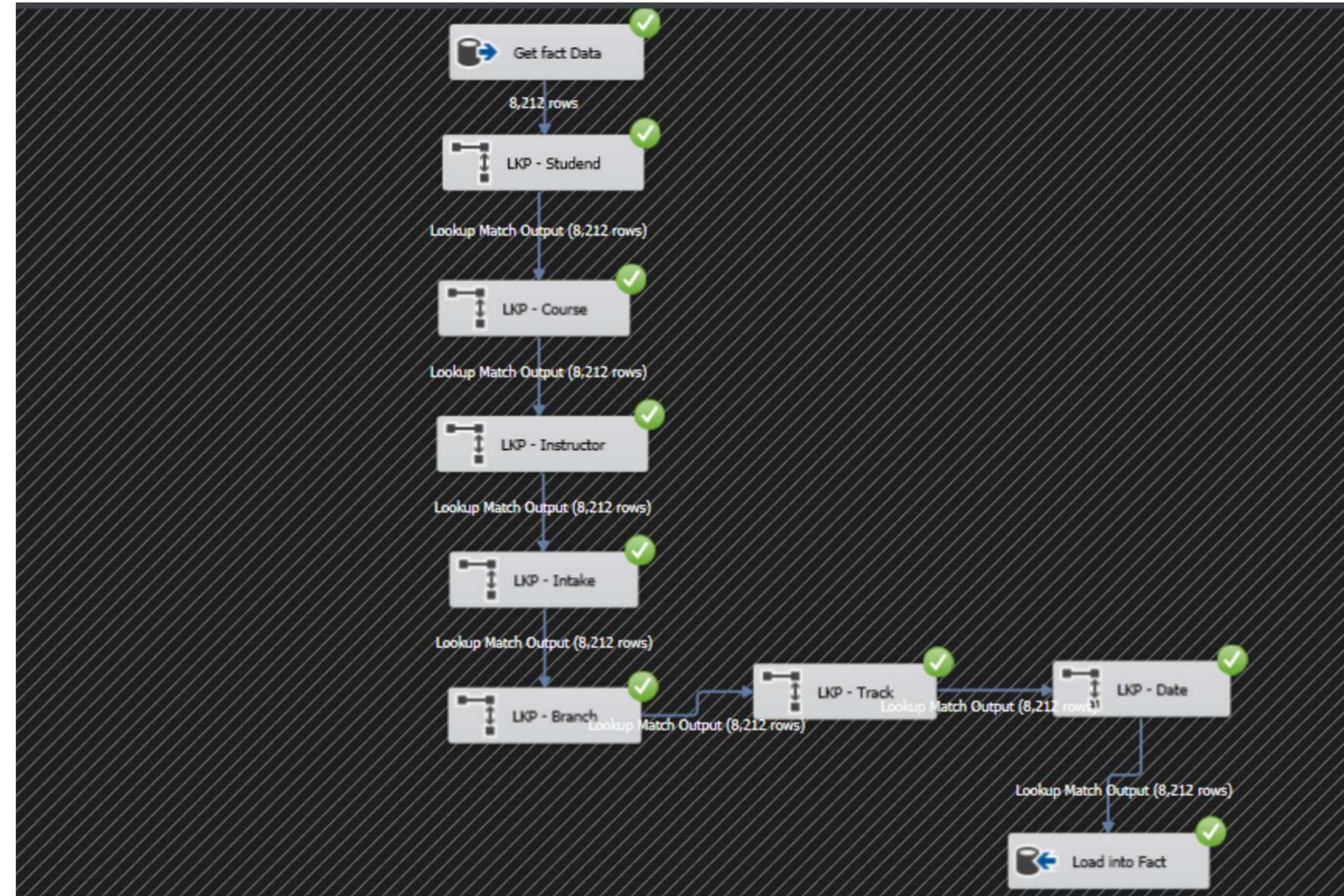
ETL

Question_Performance Fact



Enrollment Fact

ETL



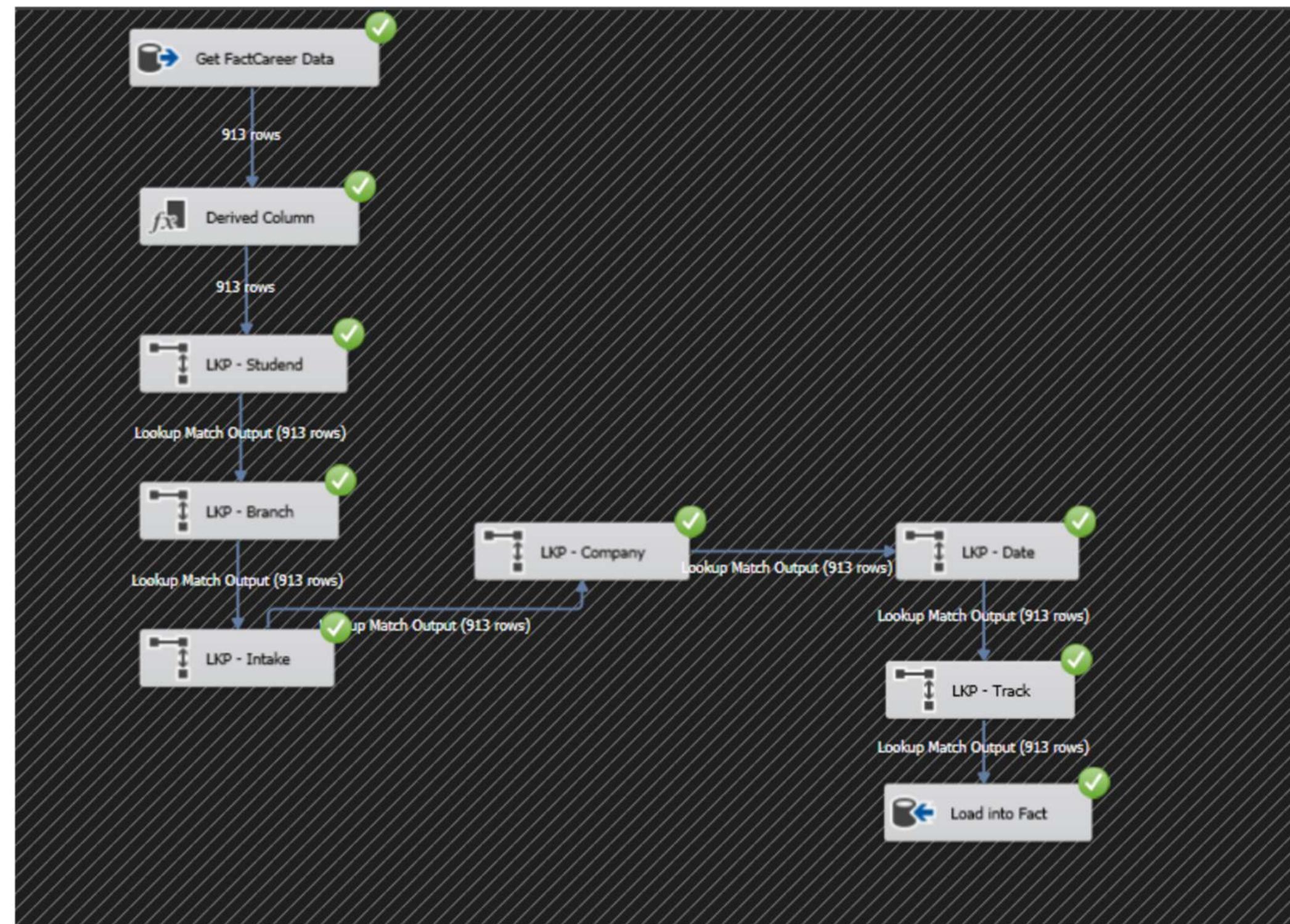
ETL

Certification Fact



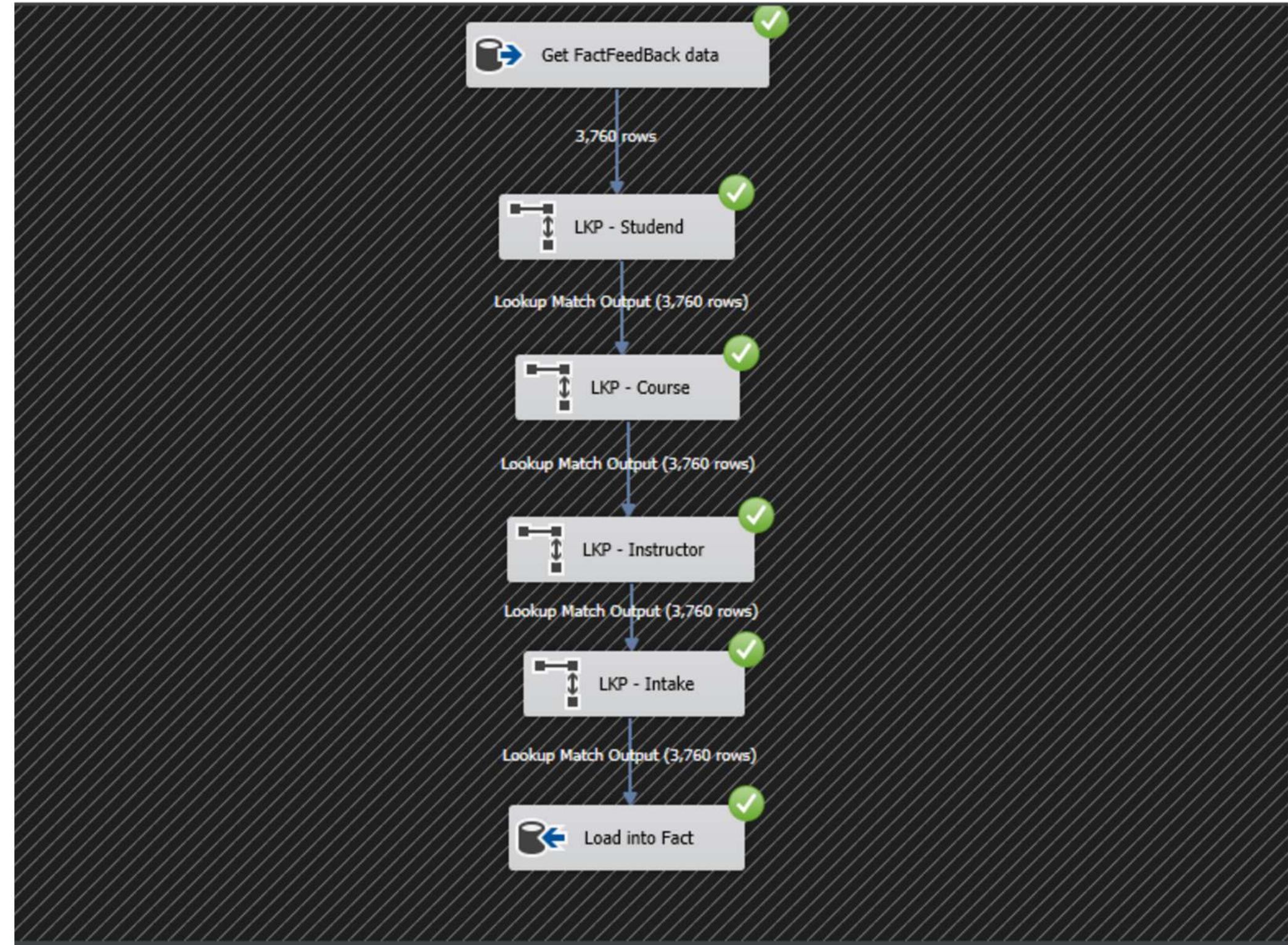
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Career Fact



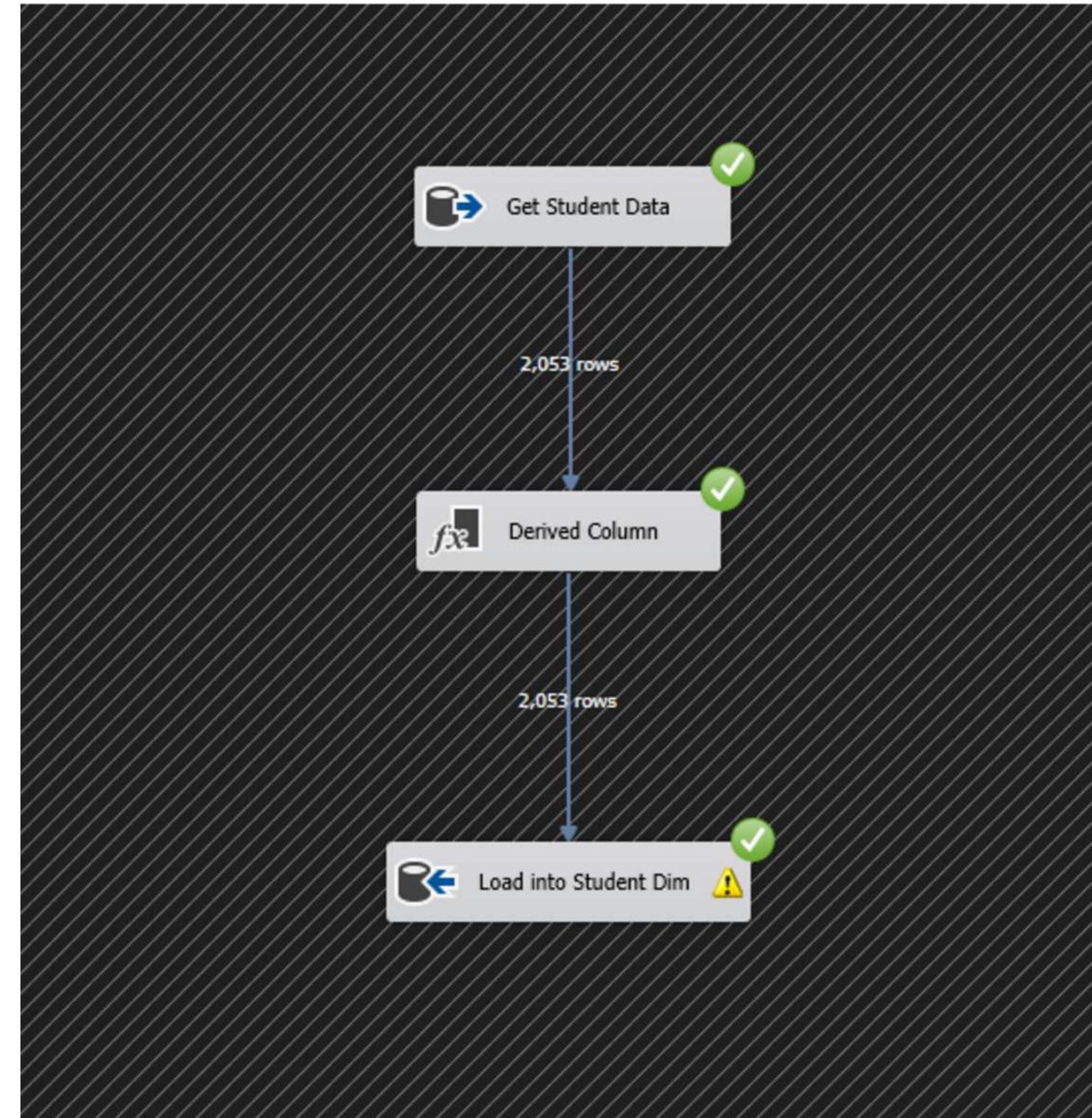
ETL

Feedback Fact



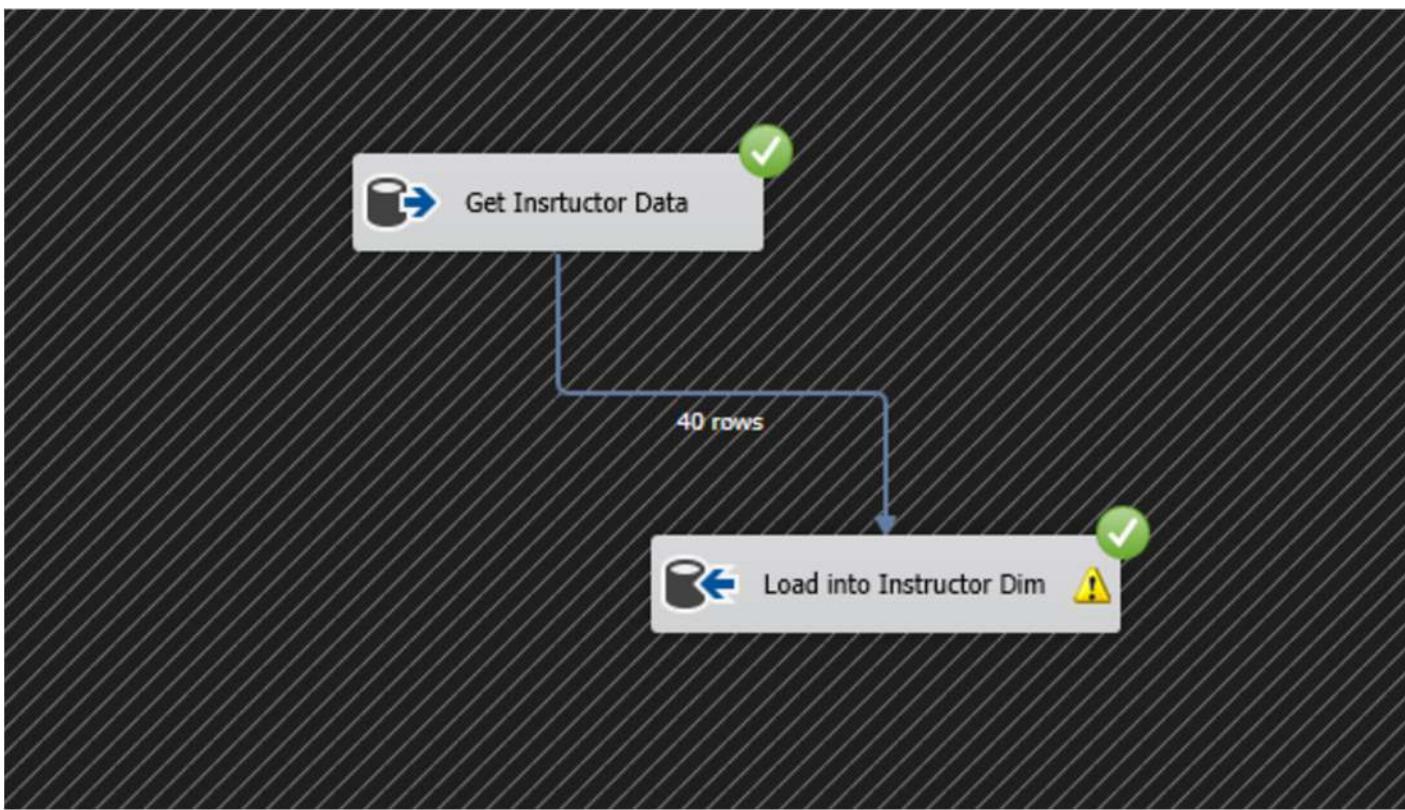
Student Dimension

ETL



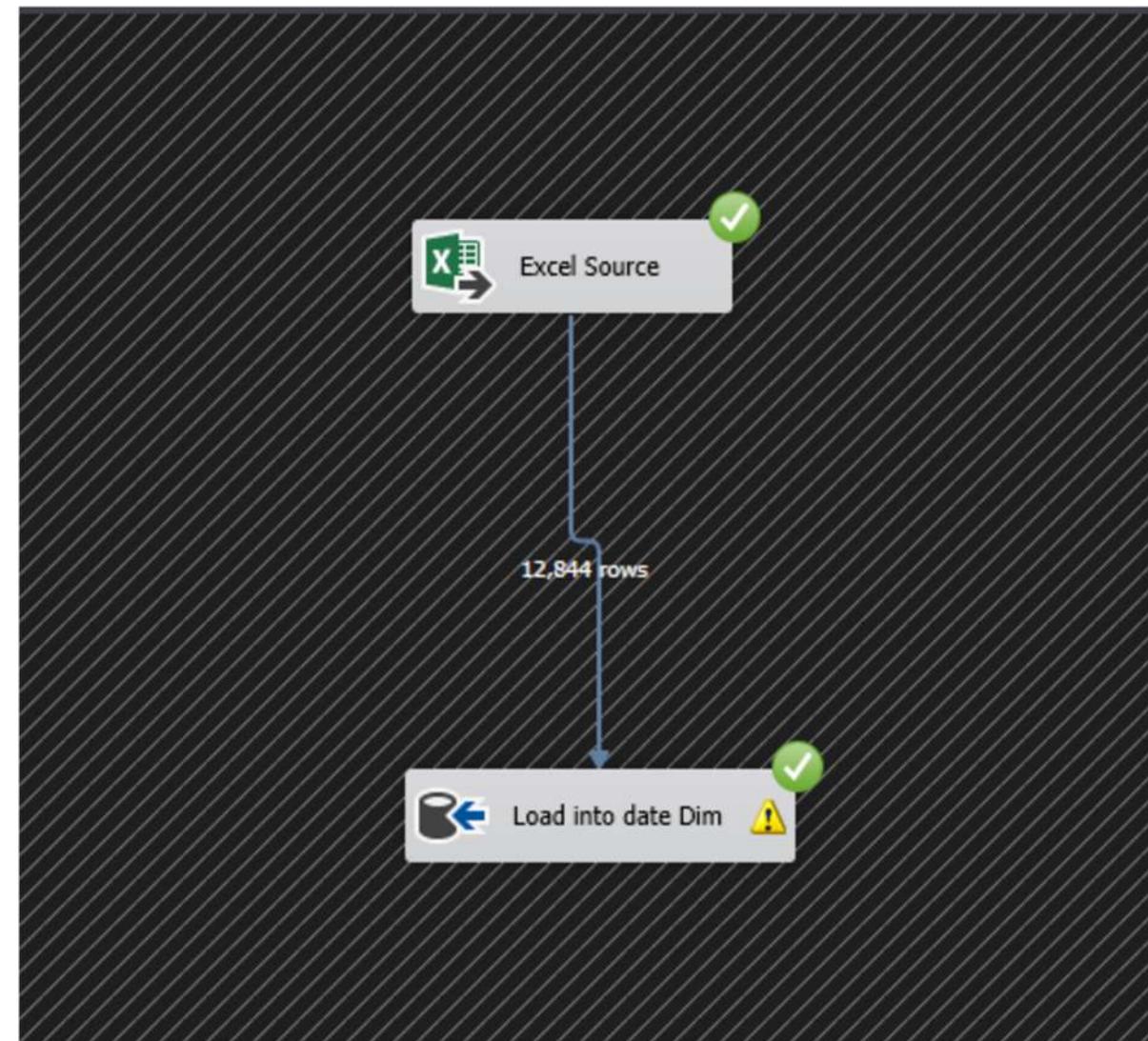
ETL

Instructor Dimension



ETL

Date Dimension



Data Marts

- **Exams Mart** → Focuses on exam results and student performance (pass rate, average score).
- **Question Performance Mart** → Analyzes student responses per question to evaluate difficulty and correctness.
- **Enrollment Mart** → Tracks student enrollment .
- **Career Mart** → Analyzes student placement outcomes (placement rate, salary, time-to-hire).
- **Certification Mart** → Tracks certifications achieved.
- **Feedback Mart** → Captures student feedback on courses and instructors (average rating, satisfaction trends).



Student | Overview

Filter by Intake

All

Date
11/2/1992 / 1/1/2028

Overview

Location&Education

Track-Branch

Instructor

Course

2053

Total Students

1169

No. Graduates

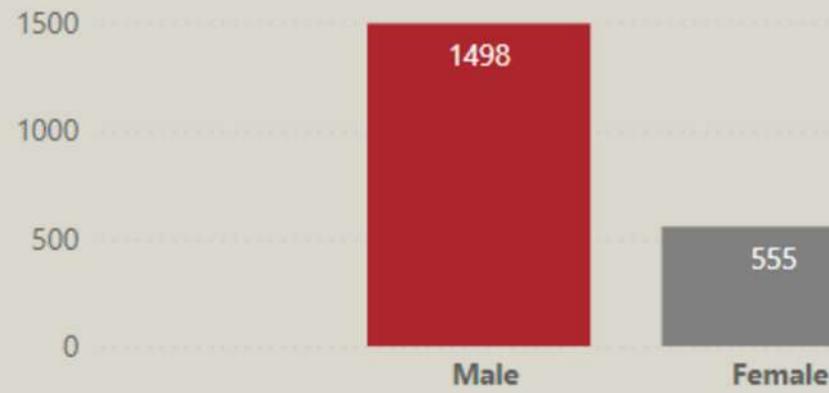
884

No. Current Students

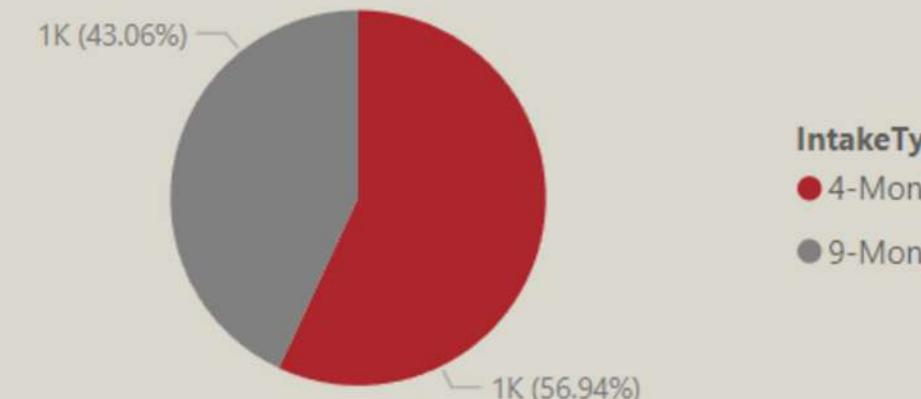
26

Average Age

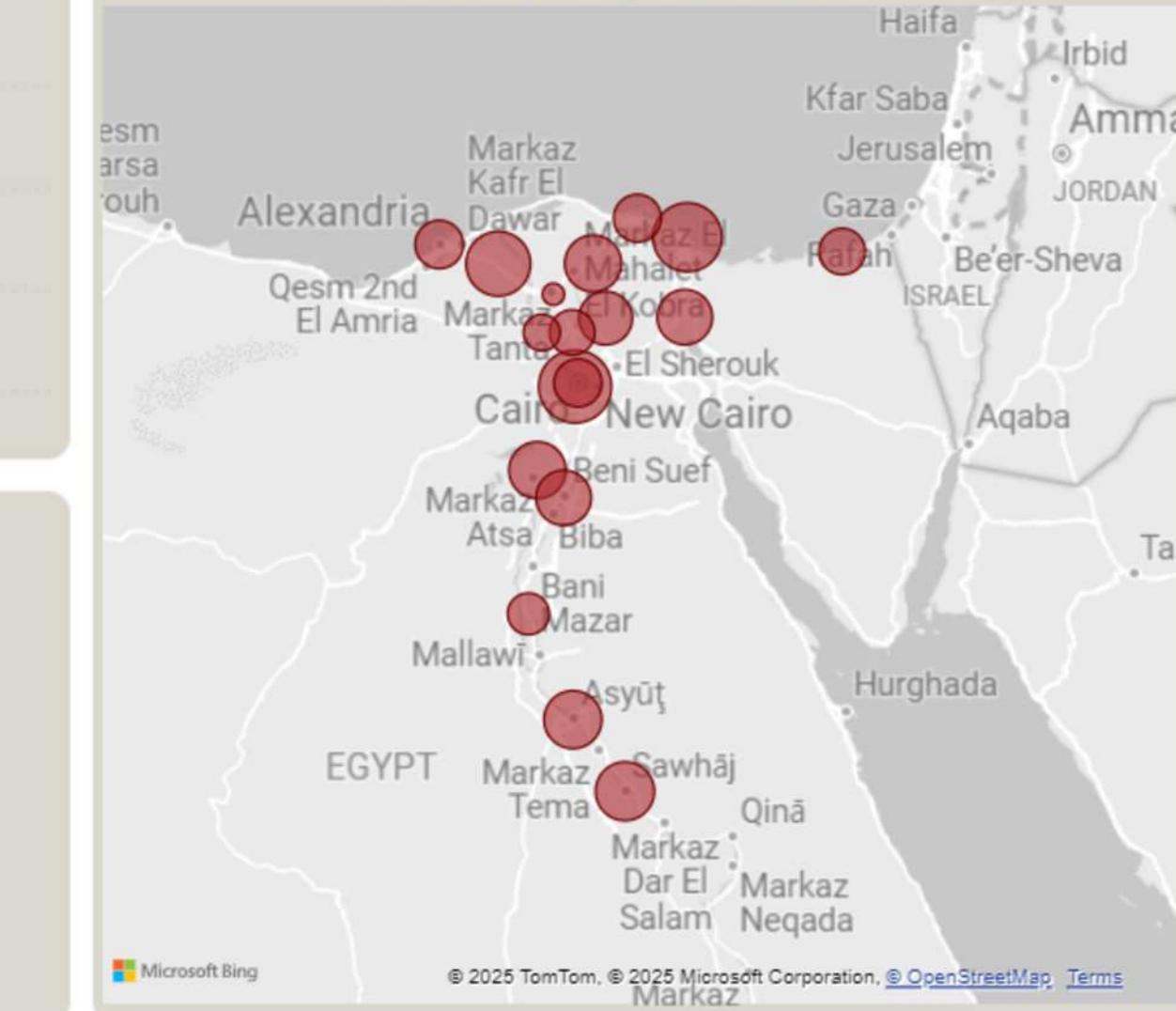
Total Students by Gender



Total Students by Intake Type



Total Students by Branch Location





Student | Location & Education

Filter by Track Name

All

Date
11/2/1992 - 1/1/2028

Overview

Location&Education

Track-Branch

Instructor

Course

31

No. of Student Cities

5

No. of Student Regions

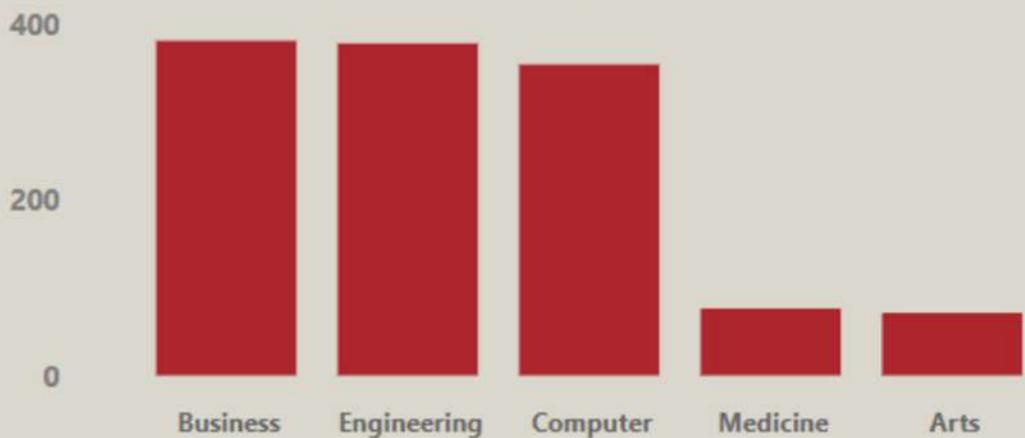
18

No. Faculties

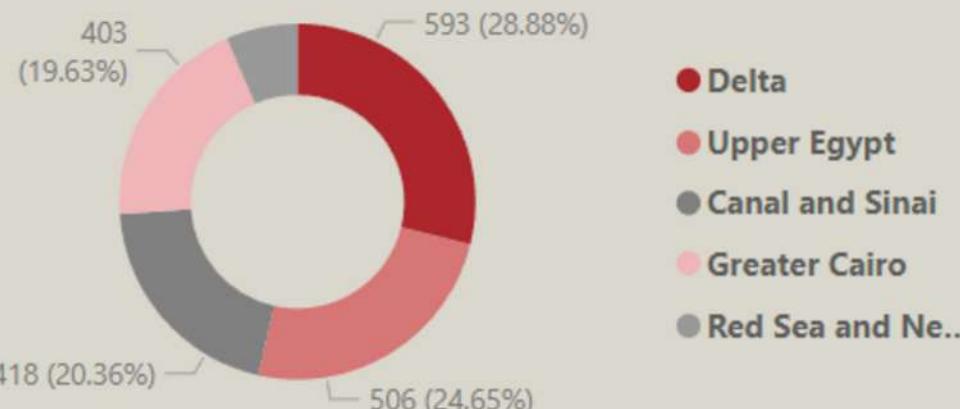
3.3

Average GPA

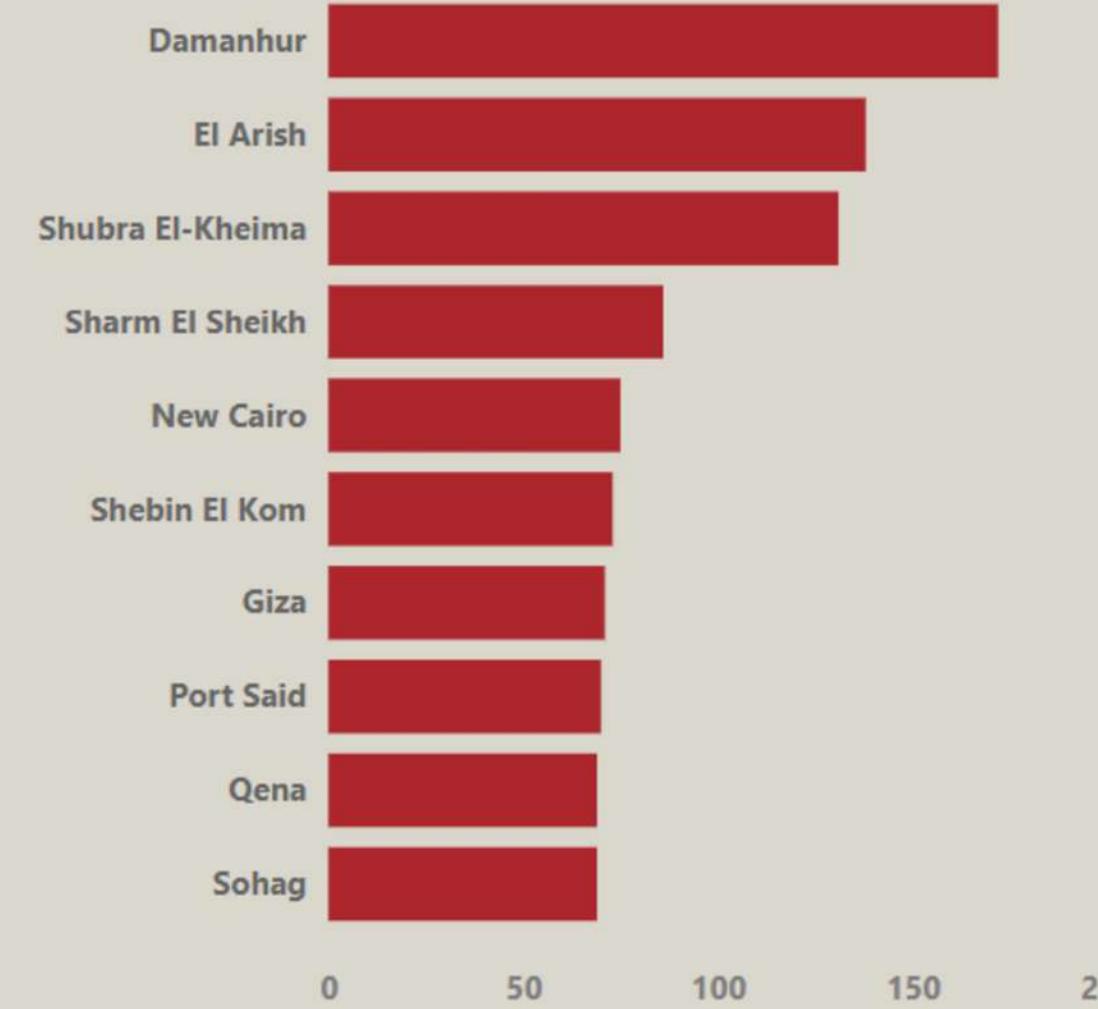
Top 5 Faculties by No. Students



Total Students by Region



Top 10 Cities by No. Students





Student | Track & Branch

Filter by Intake

All

Date
11/2/1992 | 1/1/2028

Overview

Location & Education

Track-Branch

Instructor

Course

3

No. Intakes

22

No. Branches

20

No. Tracks

5

No. Eng&CS Tracks

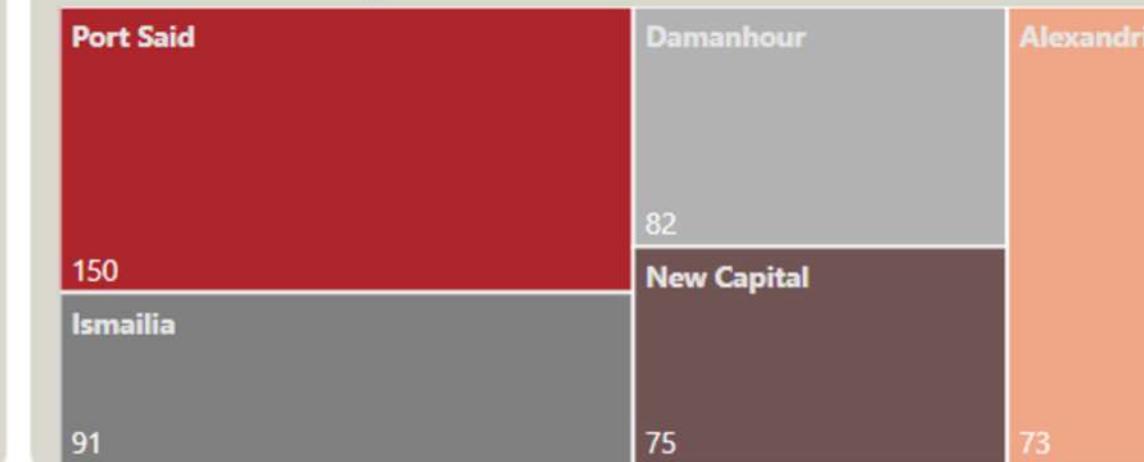
Top 3 Prerequisites by Tracks



Prerequisites

- Programming Concepts
- Database Fundamentals
- OOP Fundamentals

Top 5 Branches by No. Graduates



Top 5 Tracks by No. Students





Instructor

Filter by Gender

All

Date
11/2/1992 | 1/1/2028

Overview

Location & Education

Track-Branch

Instructor

Course

40

Total No. Instructors

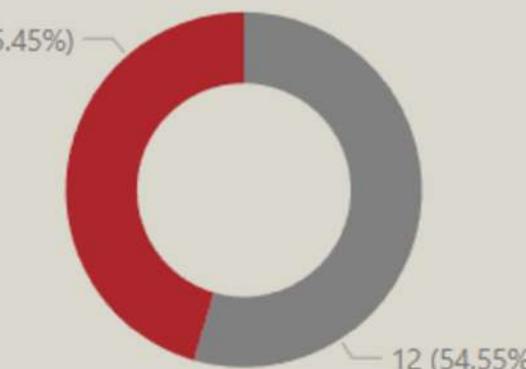
39

Avg Instructor Age

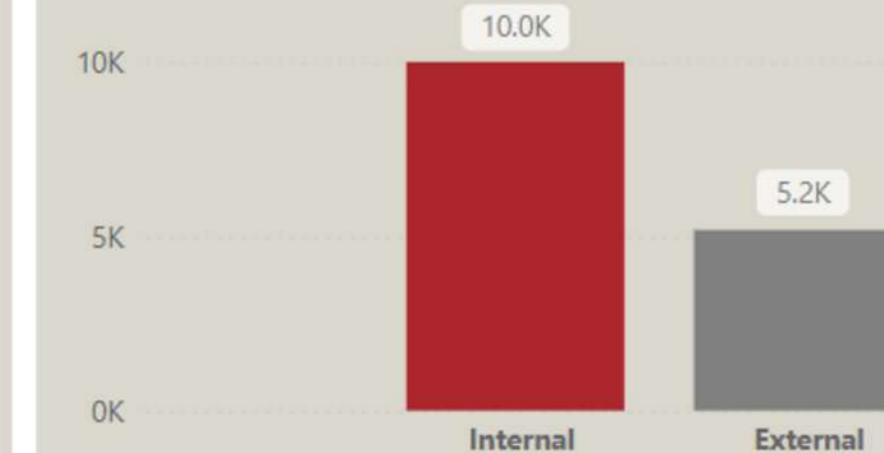
7.23K

Avg Instructor Salary

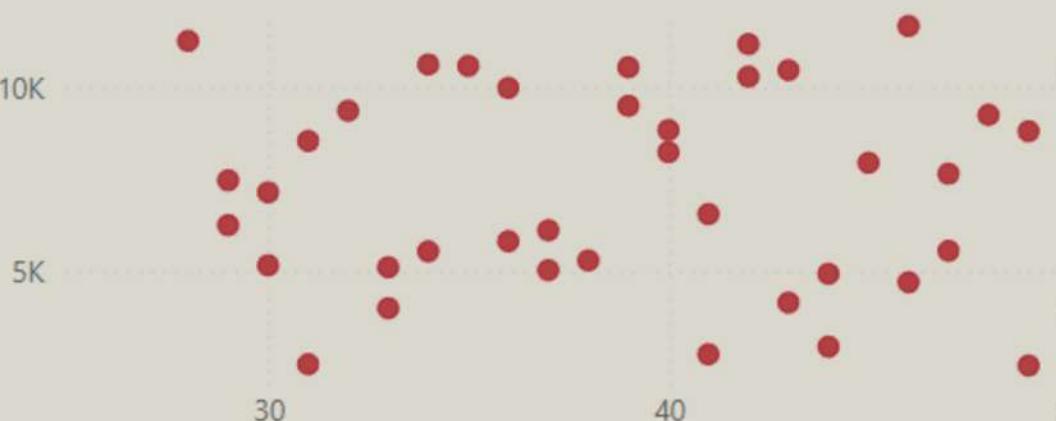
Total No. Instructors by Gender



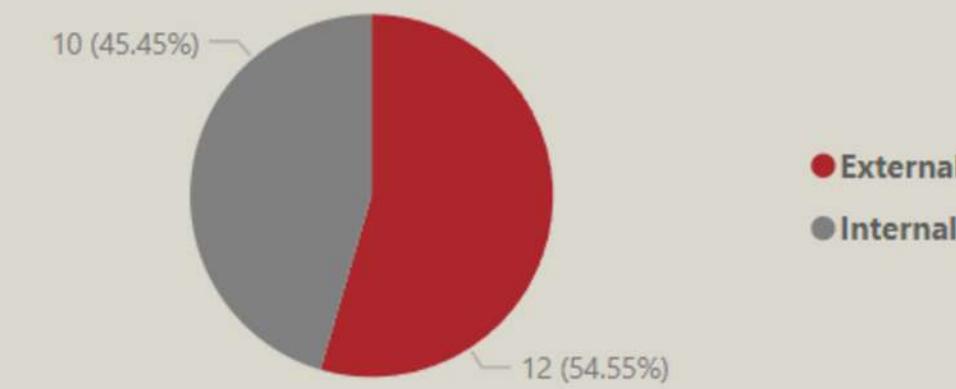
Avg Instructor Salary by Instructor Type



Age and Salary Distribution by Instructor



Total No. Instructors by Instructor Type





Filter by Track

All

Date
11/2/1992 - 1/1/2028

Overview

Location & Education

Track-Branch

Instructor

Course

Course

50

No. Courses

6

Avg Course Duration (Days)

80%

Avg Student Attendance %

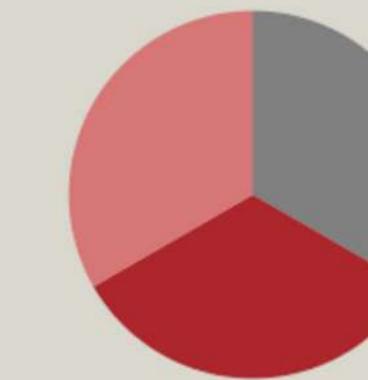
2

Avg Courses per Instructor

Top 3 instructors by No. Courses Taught

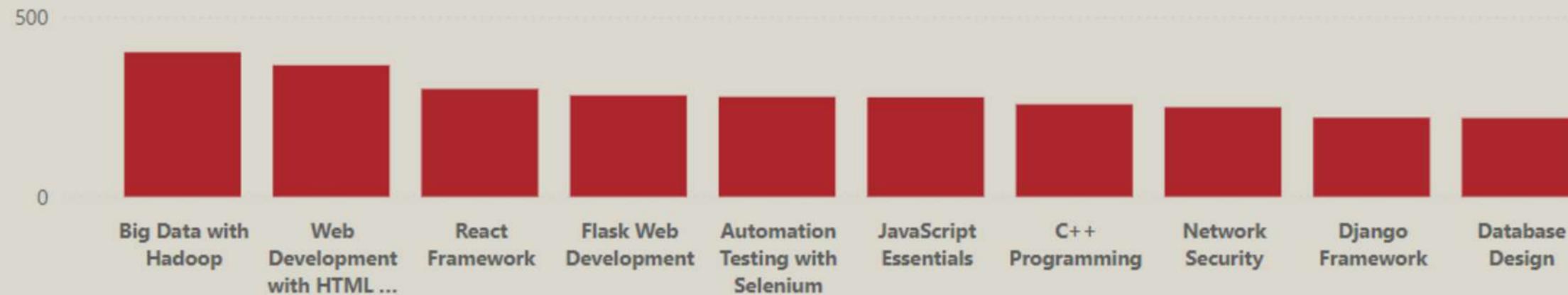


No. Courses by Intake



- IntakeNumber
- 45
 - 46
 - 47

Top 10 Courses by Total Enrollments





Feedback | Overview

Filter by Intake Number

All

Date

11/2/1992 1/1/2028

[Overview](#)

[Course Insights](#)

3760

Total No. Feedbacks

4.0

Average Rating

Hisham Hassan

Top Rated Instructor

Total No. Feedbacks by Course



- Web Development...
- Big Data with Had...
- React Framework
- JavaScript Essentials

Top 10 Tracks with Submitted Feedback



Average Rating by Month





Feedback | Course Insights

Filter by Track Name

All

Date

11/2/1992 1/1/2028

Data Governance

Top Rated Course

50

Courses with Feedback

Web Development with HTML & CSS

Top Course by Feedback Count

Average Rating and Max of Rating

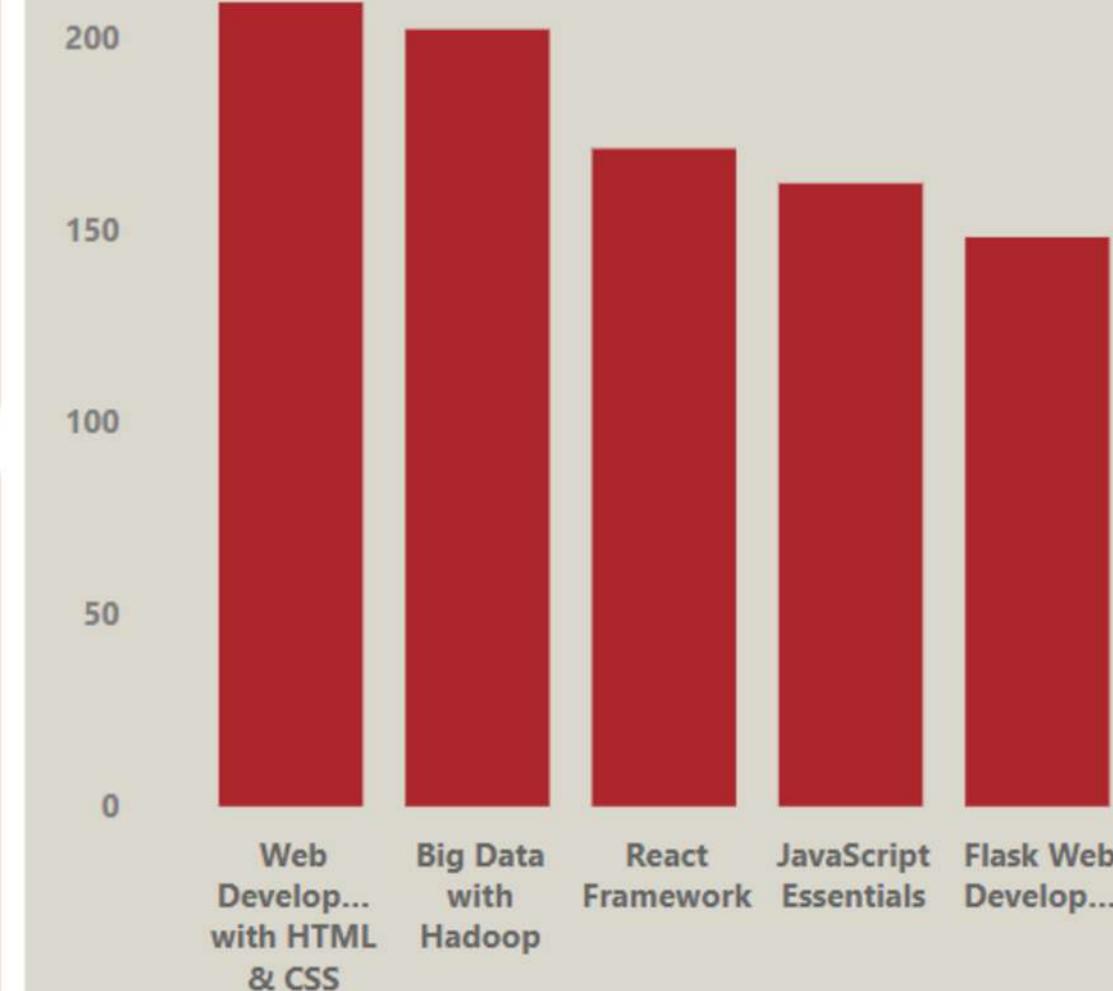
4.0

Top 5 Courses by Rating



0 2 4

Top Course Name by No. Feedbacks





Certifications | Overview

2053

Total Students

5141

Certifications Count By Student

100

Total Certification

13

Total providers

CertificationName

All

Date

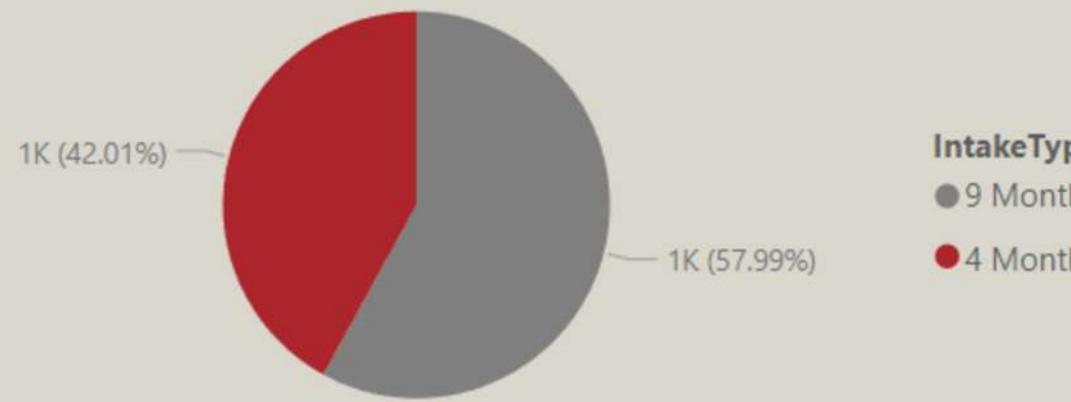
11/2/1992 1/1/2028

Overview

Students

Branch-Track Performance

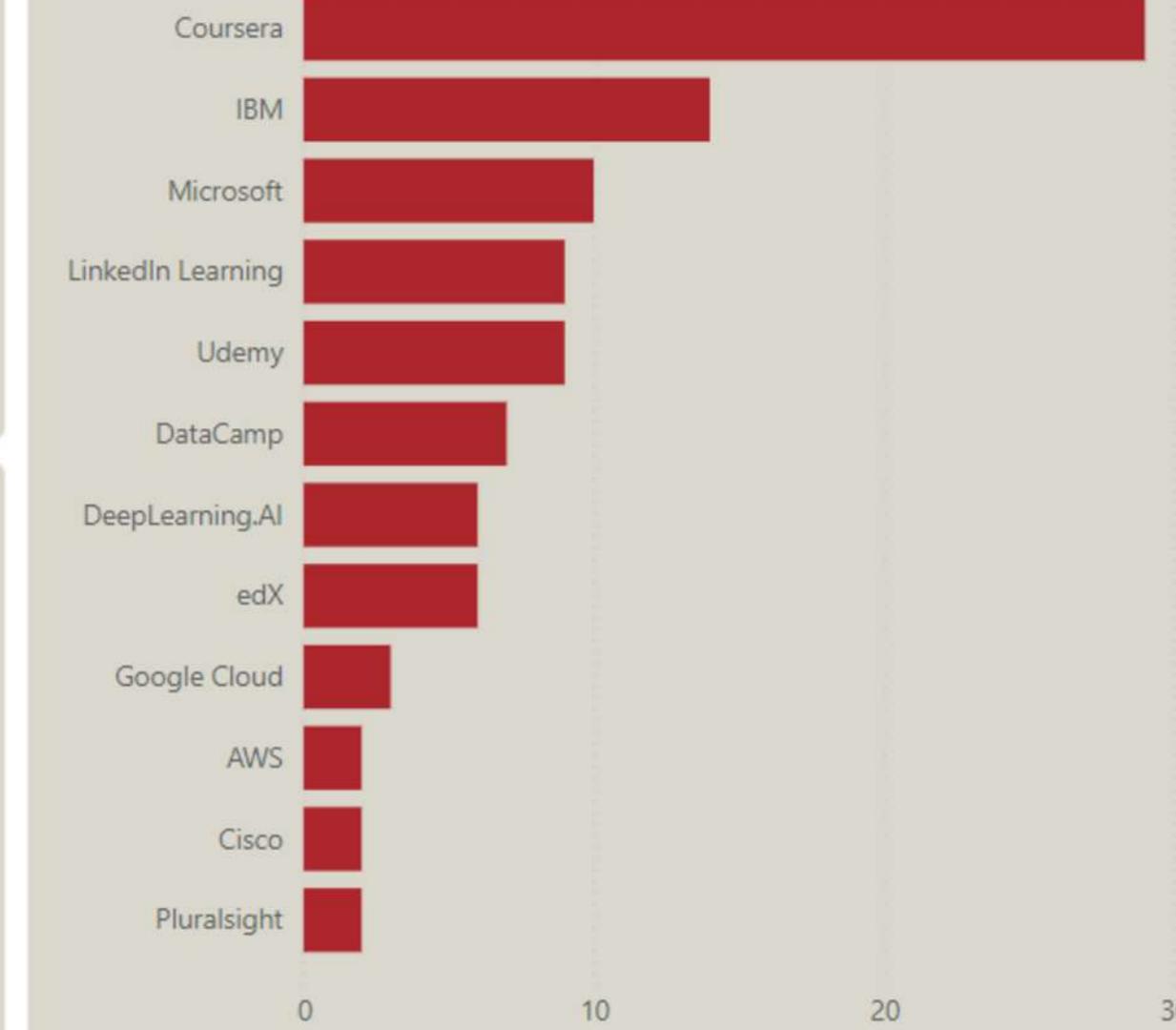
Certifications Count By Student by IntakeType



Certifications Count By Student by Month



Top 10 Provider By No oF certification





CertificationName

All

Date

11/2/1992 1/1/2028

Overview

Students

Branch-Track Performance

Certifications | Students

2053

Total Students

5141

Certifications Count By Student

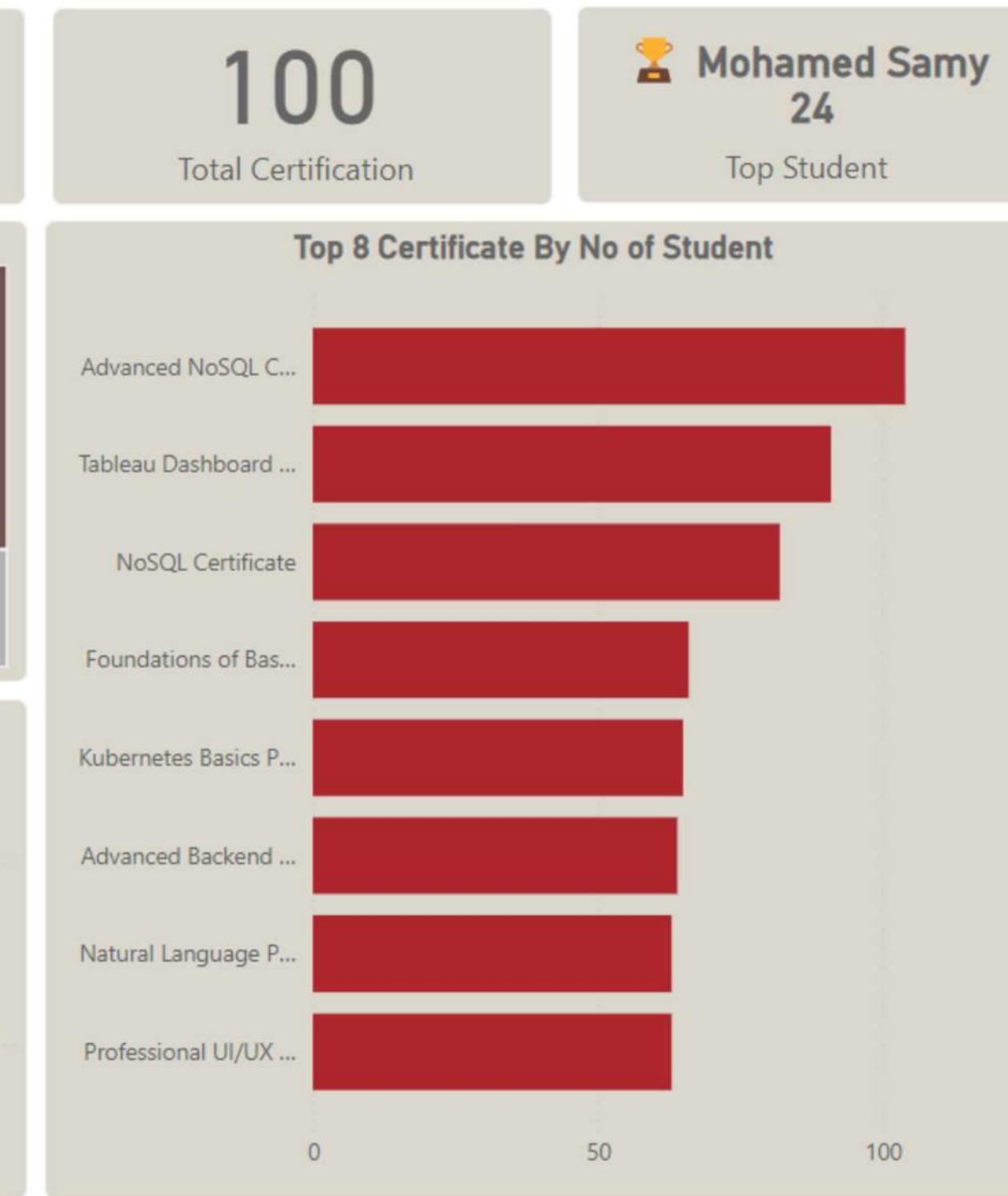
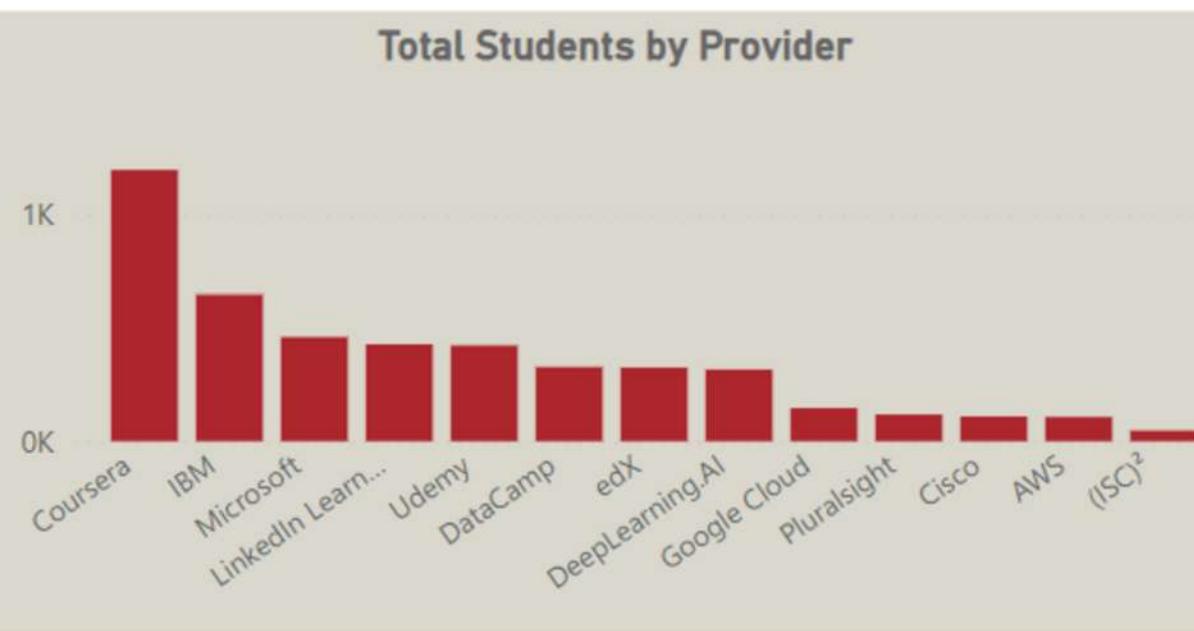
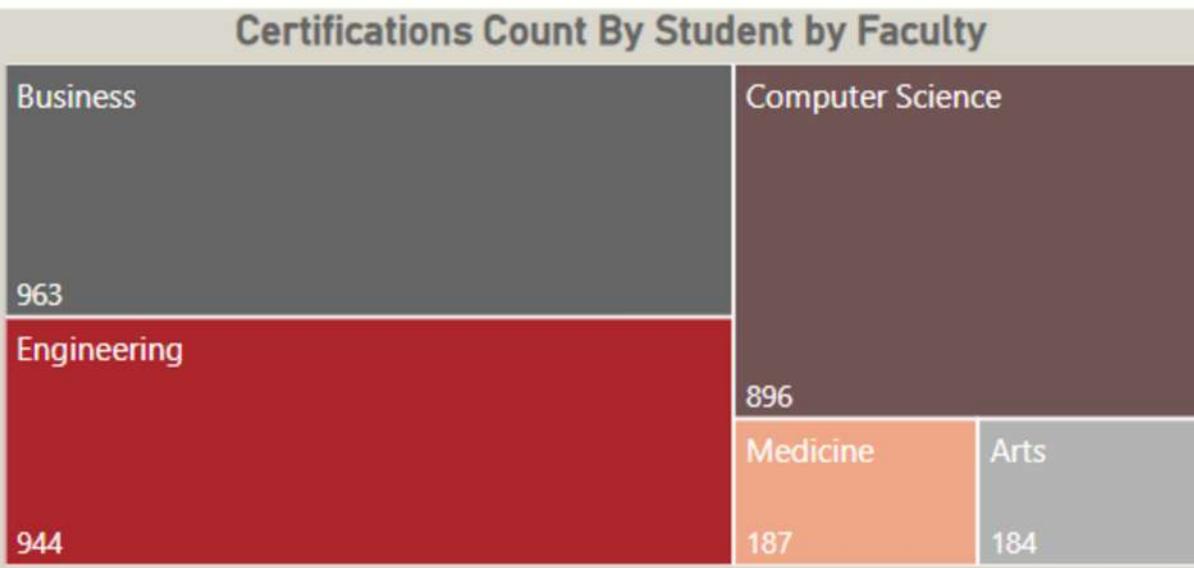
100

Total Certification



Mohamed Samy
24

Top Student





Certifications | Branch-Track Performance

CertificationName

All

Date

11/2/1992 1/1/2028

Overview

Students

Branch-Track Performance

2053

Total Students

5141

Certifications Count By Student

20

Total Tracks

22

Total Branches

Top 10 Tracks By No of certifications



Top 10 branches By No of certifications



Track_Name	Total Certification	Track Rank
Game Development	100	1
Full Stack Web Development	100	2
UI/UX Design	100	3
Front-End Development	98	4
IOS Development	93	5
Data Engineering	96	6
Network Engineering	85	7
Cloud Computing and Automation	95	8
Power BI Development	93	9
Industrial Automation	86	10
Embedded Systems	92	11
Back-End Development	92	12
Software Testing	90	13
Motion Graphics	85	14
Cybersecurity	81	15
Business Analysis	78	16
Social Media Marketing	86	17
Data Science	76	18
Artificial Intelligence	72	19
Robotics	68	20



Exam Result | Overview

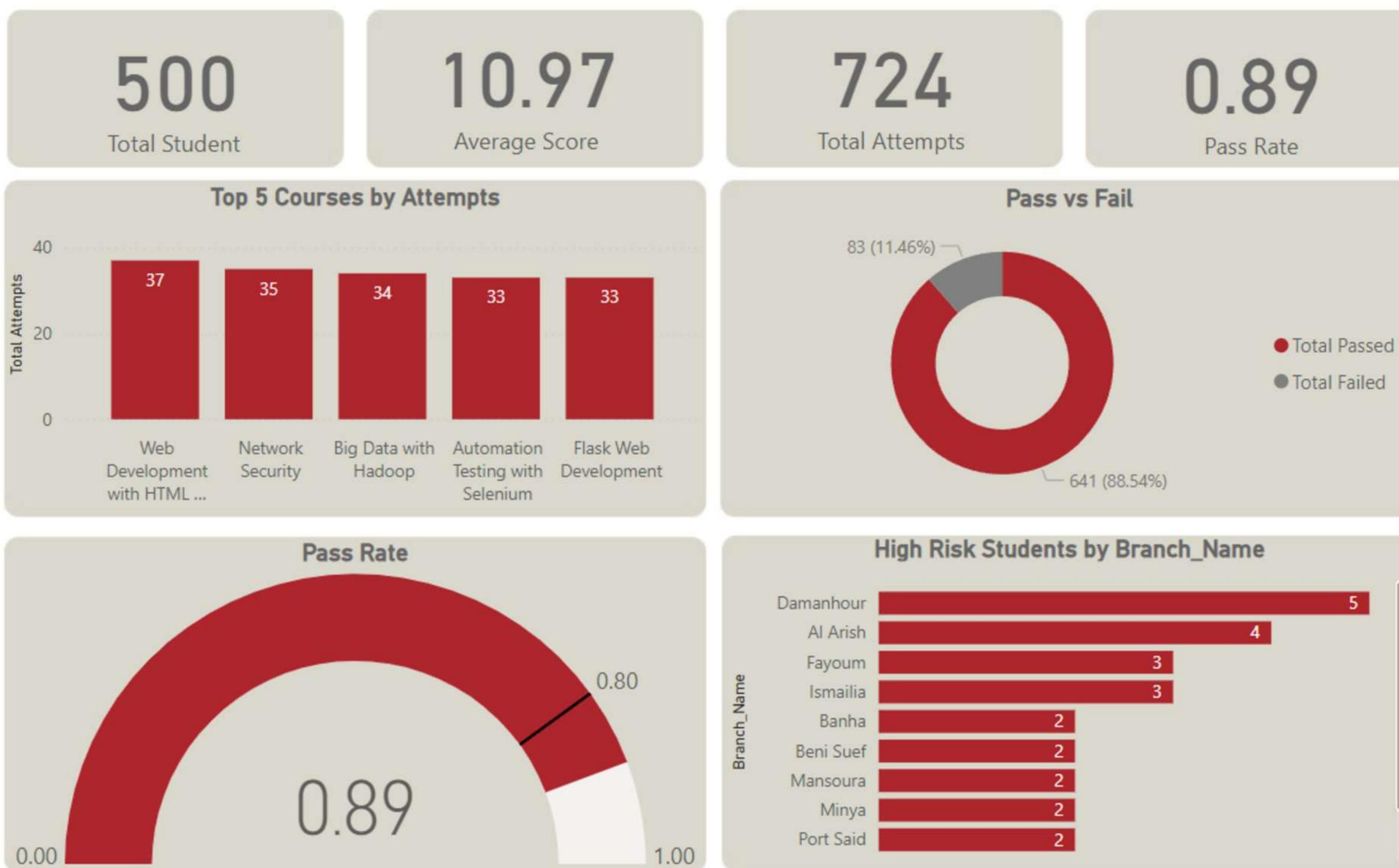
Gender: All

Date: 11/2/1992 - 1/1/2028

[Overview](#)

[Student Performance](#)

[Course & Instructor Performance](#)





Exam Result | Student

Gender

All

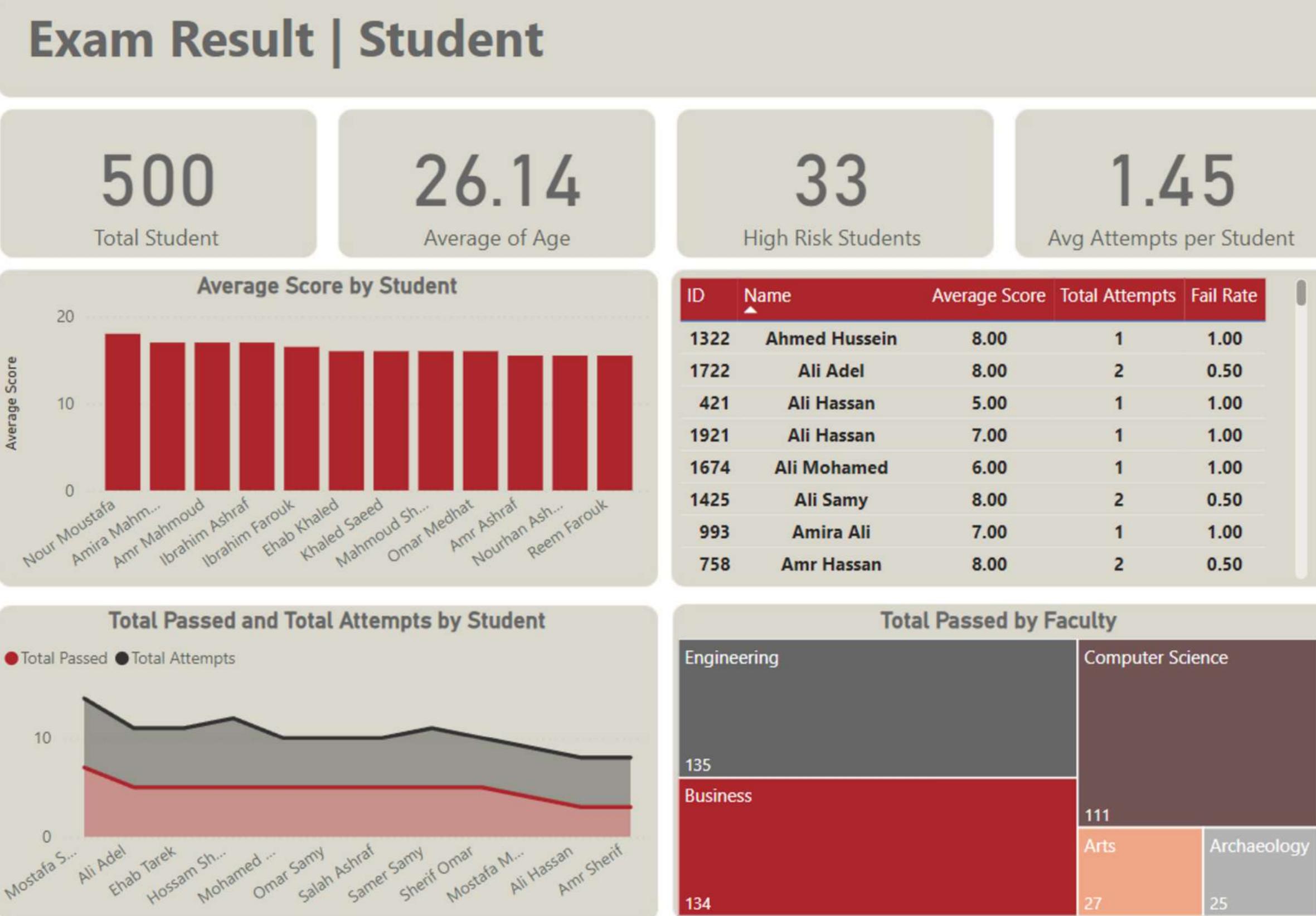
Date

11/2/1992 1/1/2028

Overview

Student Performance

Course & Instructor Performance





Exam Result | Course - Instructor

Gender

All

Date

11/2/1992 1/1/2028

Overview

Student Performance

Course & Instructor Performance

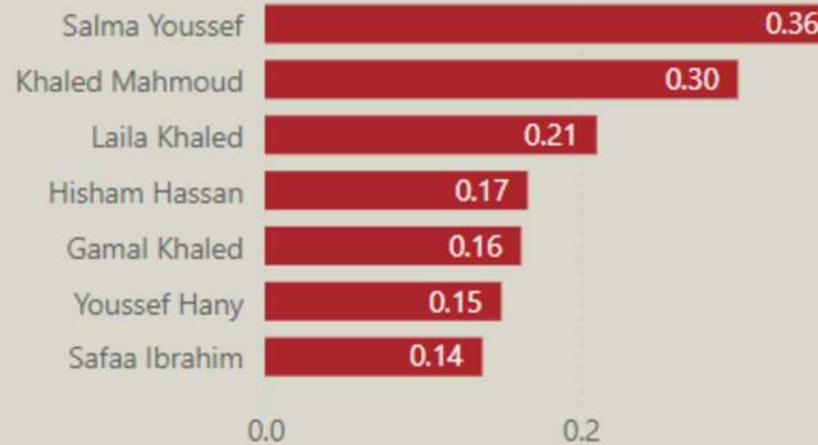
500
Total Student

10.97
Average Score

724
Total Attempts

11.02
Avg Score by Course

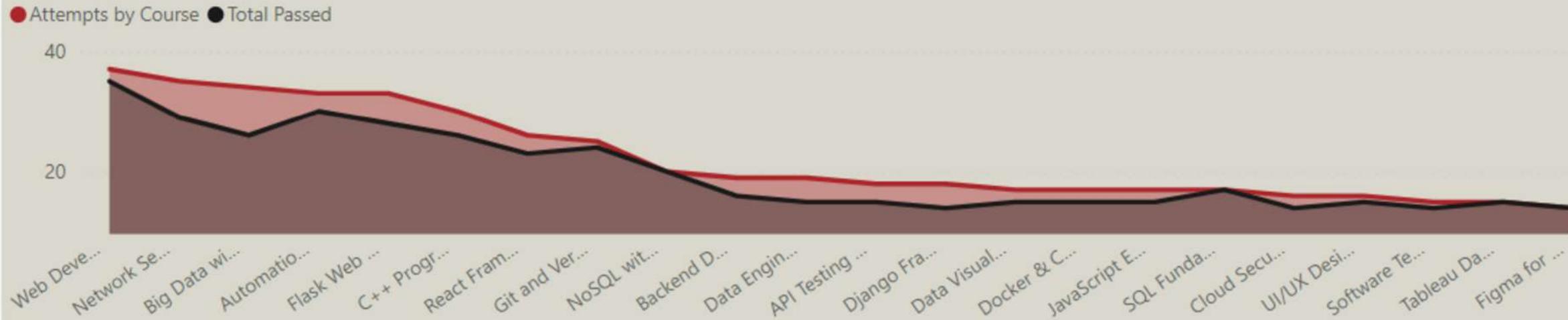
Top 10 Instructors by Fail Rate



Average Score by Course



Attempts by Course and Total Passed by CourseName





Question Performance | Overview

5068

Total Attempts

80.41%

Avg Score %

7.94K

Total Marks Awarded

350

Total Questions

Question Level

All

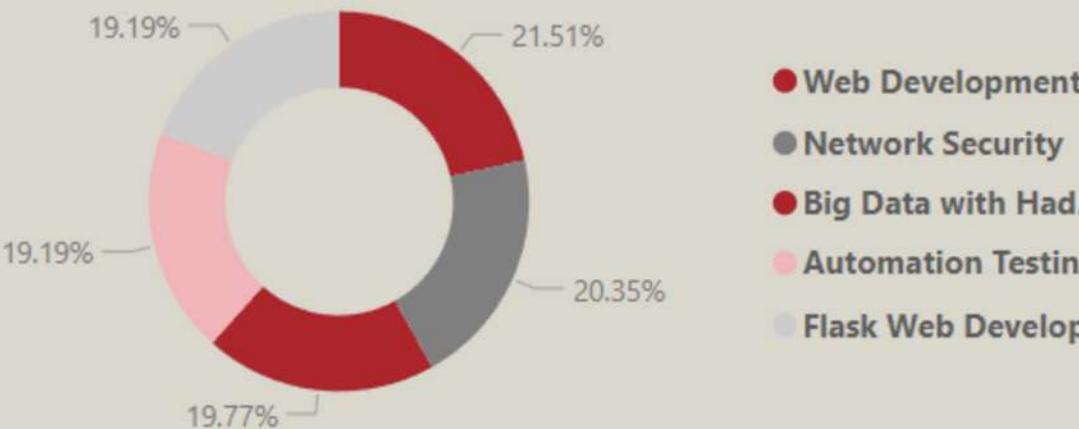
Date
11/2/1992 1/1/2028

Overview

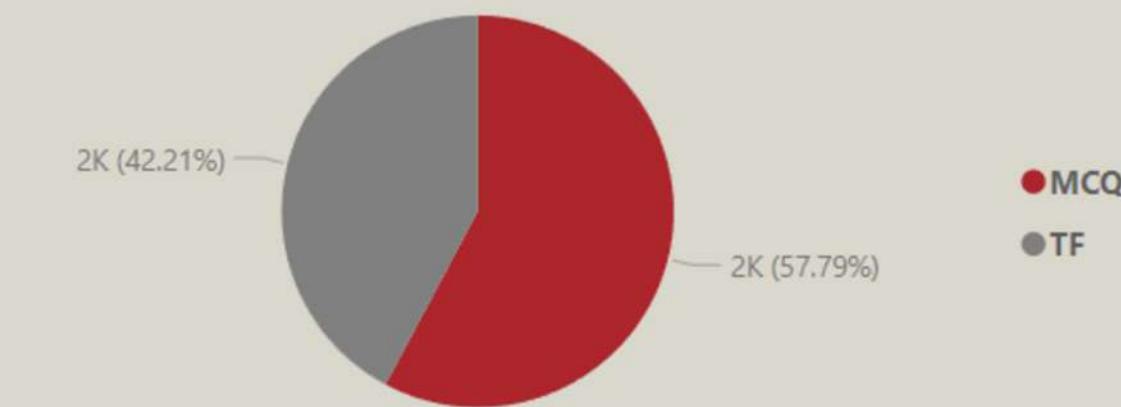
Students Performance

Course & Instructor Performance

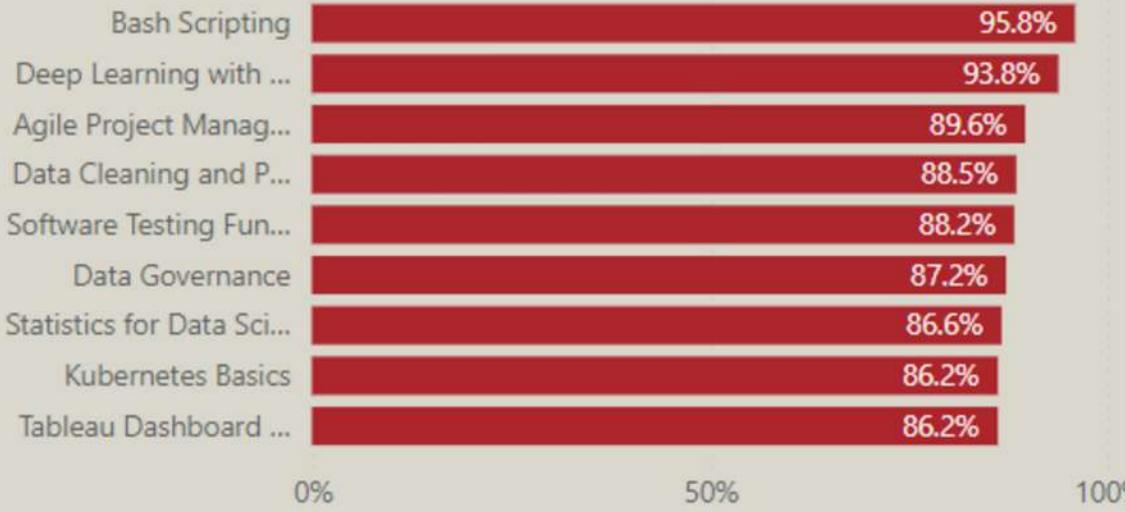
Total Attempts by Course



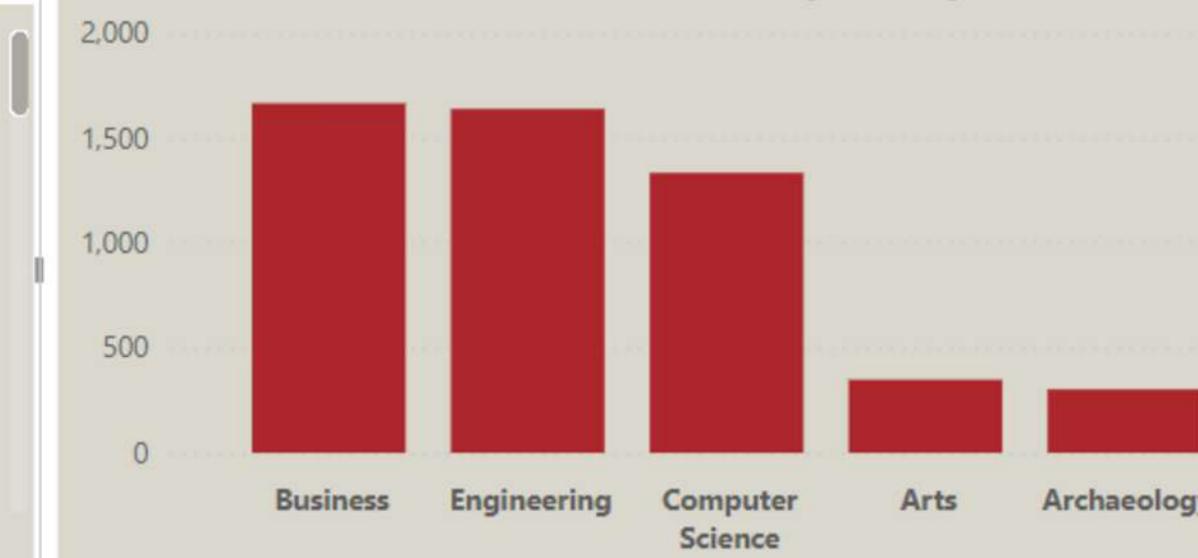
Correct Answers by Question Type



Avg Score % by Course



Total Marks Awarded by Faculty





Question Performance | Student

5068

TotalAttempts

80.41%

AvgScorePct

7.94K

TotalMarksAwarded



Mostafa Samy

Top Student

Question Level

All

Date

11/2/1992

1/1/2028



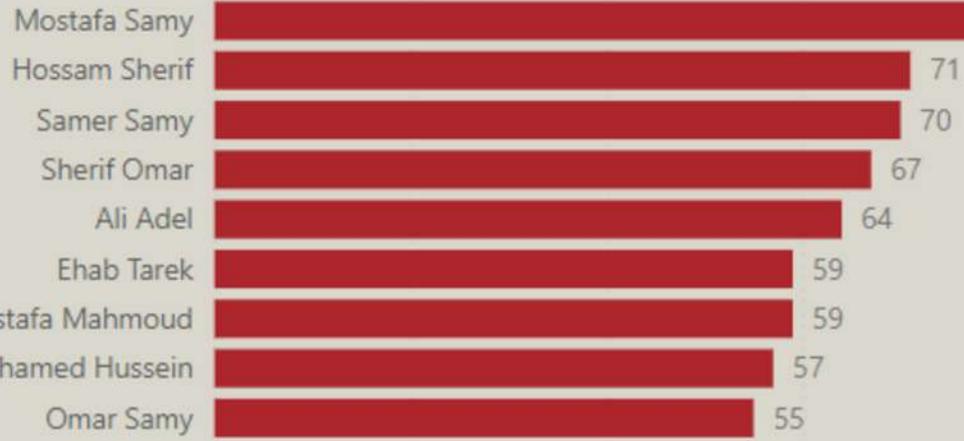
Overview

Students Performance

Course & Instructor Performance

ID	Name	Avg Score %	Marks Awarded	Marks Possible	TotalAttempts
142	Ahmed Adel	100.00%	14.00	14.00	7
1563	Ahmed Ashraf	80.77%	21.00	26.00	14
2005	Ahmed Hany	87.50%	14.00	16.00	7
447	Ahmed Hassan	89.29%	25.00	28.00	14
178	Ahmed Hussein	100.00%	28.00	28.00	14
1322	Ahmed Hussein	47.06%	8.00	17.00	7
1903	Ahmed Hussein	66.67%	10.00	15.00	7
47	Ahmed Ibrahim	92.00%	23.00	25.00	14

Top 10 Students by Marks Awarded



0 20 40 60 80

Avg Marks Per Attempt by Student



0 1 2 3

Attempts vs Avg Score





Question Performance | Course - Instructor

5068

Total Attempts

80.41%

Avg Score %

7.94K

Total Marks Awarded

1.57

Course Avg Marks Awarded

Question Level

All

Date

11/2/1992 1/1/2028

Overview

Students Performance

Course & Instructor Performance

Incorrect Rate by Instructor

Khaled Mahmoud	0.26
Salma Youssef	0.25
Hisham Hassan	0.25
Laila Khaled	0.22
Gamal Khaled	0.21
Safaa Ibrahim	0.21
Mona Ibrahim	0.21
Inas Ahmed	0.20
Rami Khaled	0.20

Correct vs Incorrect by Course

● Correct ● Incorrect

Web Development with...	83%	17%
Network Security	80%	20%
Big Data with Hadoop	76%	24%
Automation Testing wit...	78%	22%
Flask Web Development	78%	22%
C++ Programming	80%	20%
React Framework	80%	20%

Course Name	Instructor Name	Avg Score %
Bash Scripting	Ashraf Tarek	95.83%
Deep Learning with TensorFlow	Reem Samir	93.75%
Agile Project Management	Omar Hassan	89.58%
Data Cleaning and Preparation	Ghada Hassan	88.46%
Software Testing Fundamentals	Rania Mahmoud	88.21%
Data Governance	Omar Hassan	87.18%
Statistics for Data Science	Reem Samir	86.61%
Kubernetes Basics	Reem Samir	86.15%
Tableau Dashboard Design	Reem Samir	86.15%
Data Warehousing	Safaa Ibrahim	86.11%
Docker & Containerization	Mariam Khaled	85.78%
Data Analysis with Pandas	Shaimaa Tarek	85.71%
Prompt Engineering	Youssef Hany	84.71%
Object-Oriented Programming in Java	Rami Khaled	83.93%
JavaScript Essentials	Inas Ahmed	83.92%
Business Intelligence Concepts	Hassan Ali	83.57%
SQL Fundamentals	Sara Ahmed	83.42%
Computer Vision Basics	Maha Youssef	83.33%
Git and Version Control	Mona Ibrahim	83.08%
NASQI with MongoDB	Reem Samir	82.86%



Career | Overview

Filter by Intake

All

Date
11/2/1992 / 1/1/2028

Overview

Company Performance

Track & Branch

Location

Job Titles

913

Total No. Graduates

657

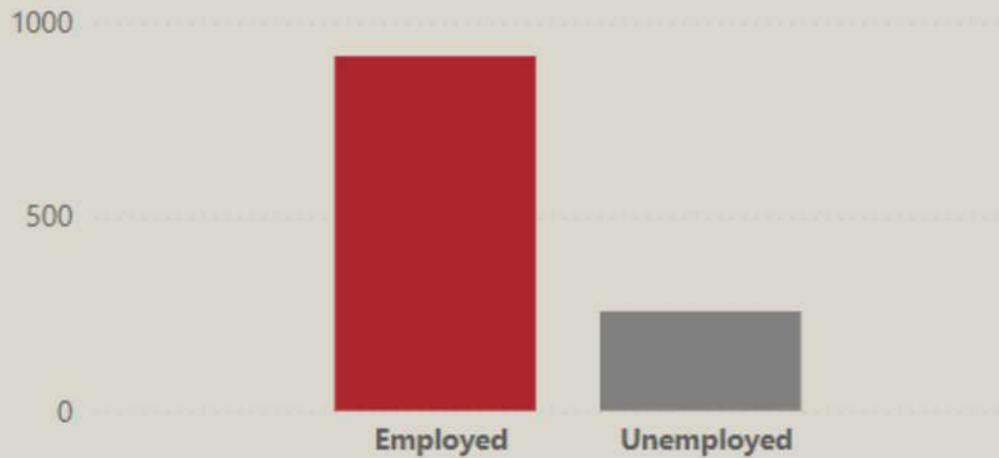
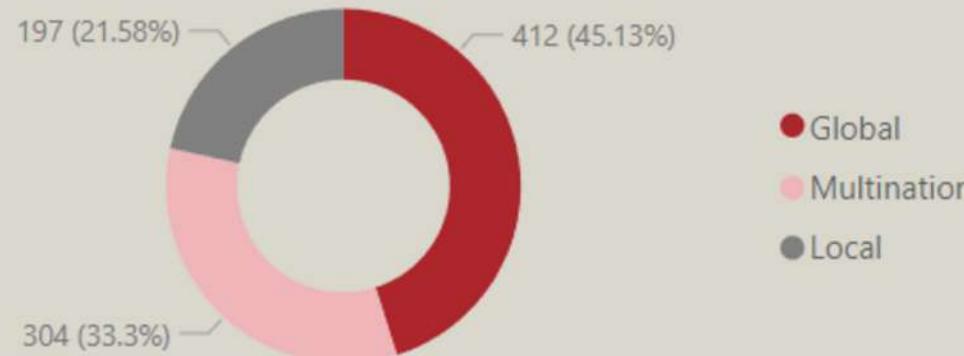
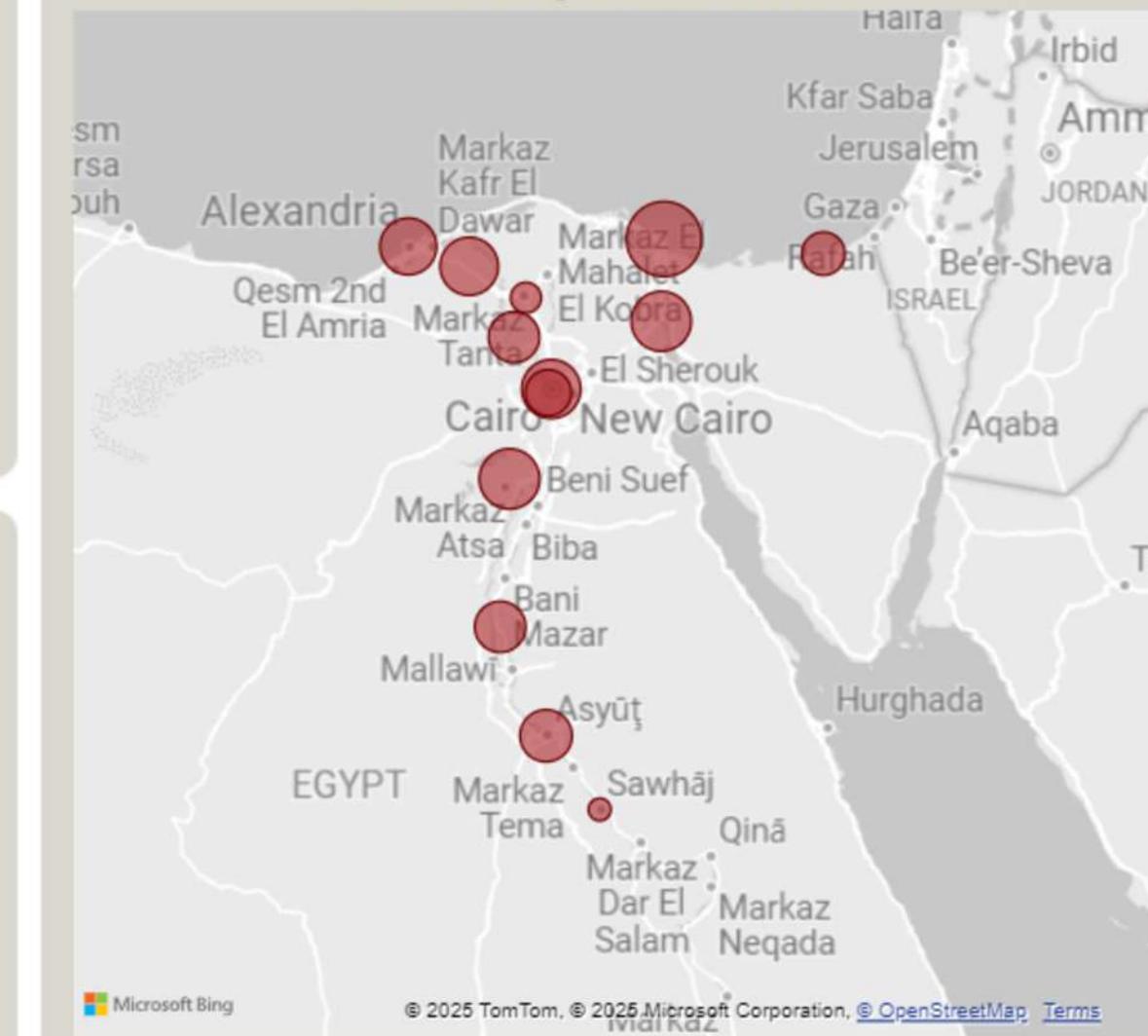
No. of Employed

256

No. of Unemployed

20

No. Companies

No. Graduates by Employment Status**No. of Employed by Company Type****No. Hired by Branch Location**



Career | Company Performance

Filter by Intake

All

Date
11/2/1992 | 1/1/2028

Overview

Company Performance

Track & Branch

Location

Job Titles

Etisalat

Top Company by Hiring Count

25K

Max Salary

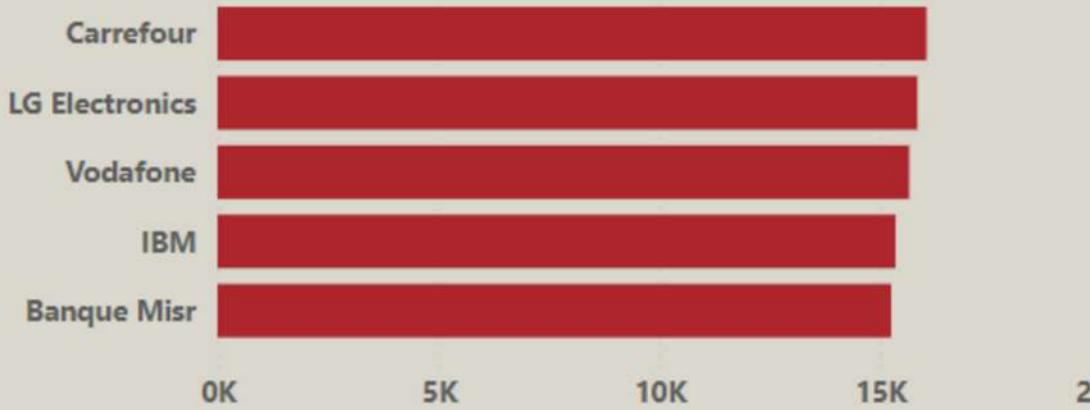
15K

Average Salary

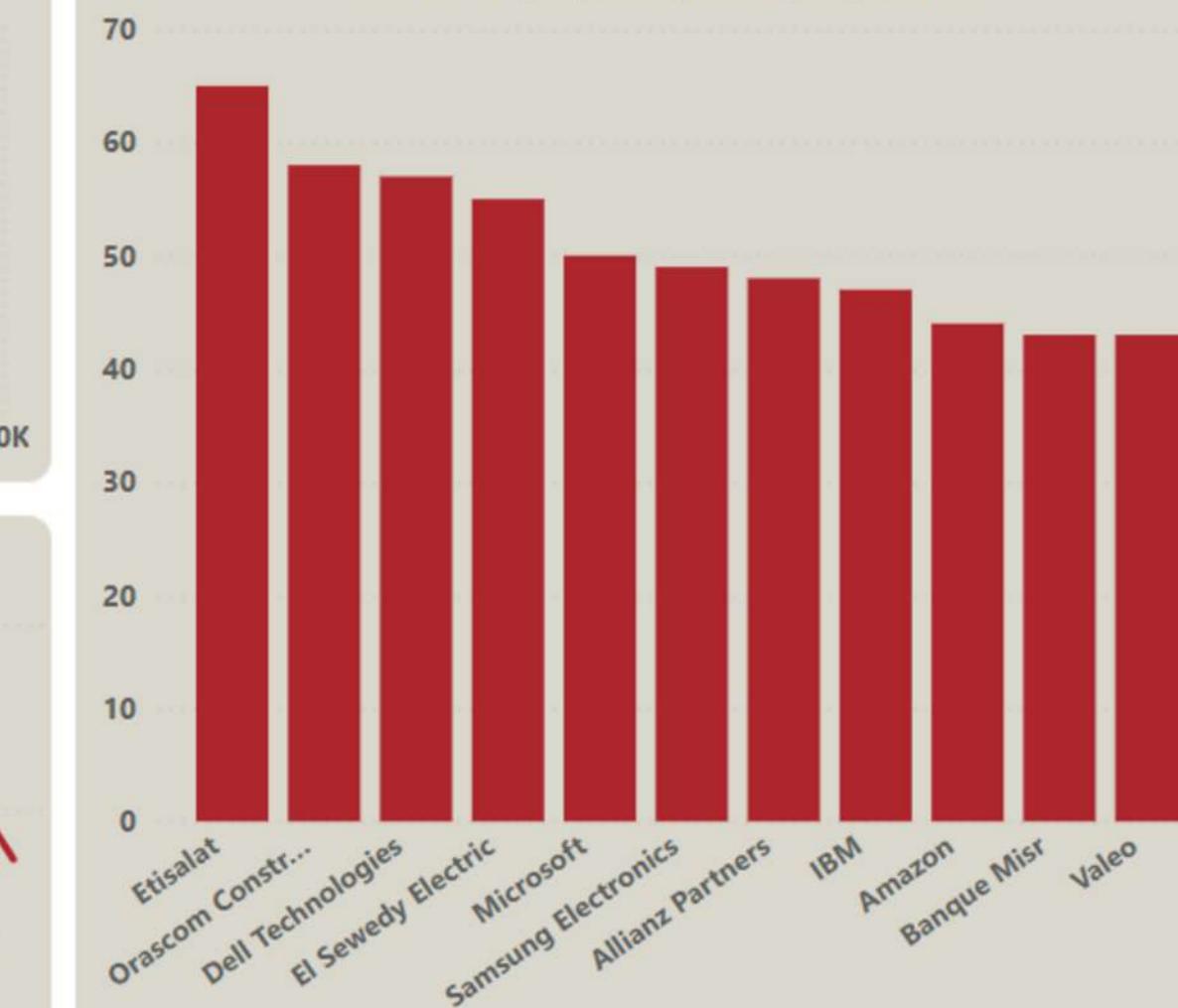
Carrefour

Top Company by Avg Salary

Average Salary by CompanyName



No. of Employed by CompanyName



Hired % by Company by MonthName





Career | Track & Branch

Filter by Branch

All

Date
11/2/1992 / 1/1/2028

Overview

Company Performance

Track & Branch

Location

Job Titles

Port Said

Top Hired Branch

44%

Avg Hiring % per Track

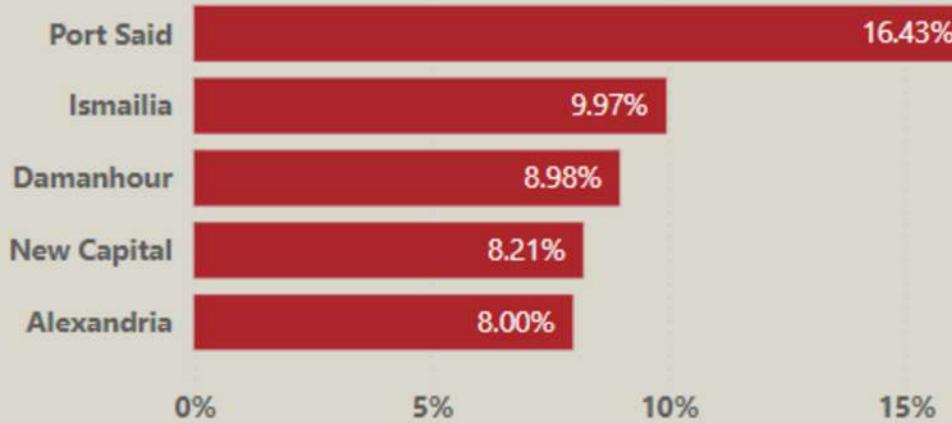
1.00

Hire Speed Index

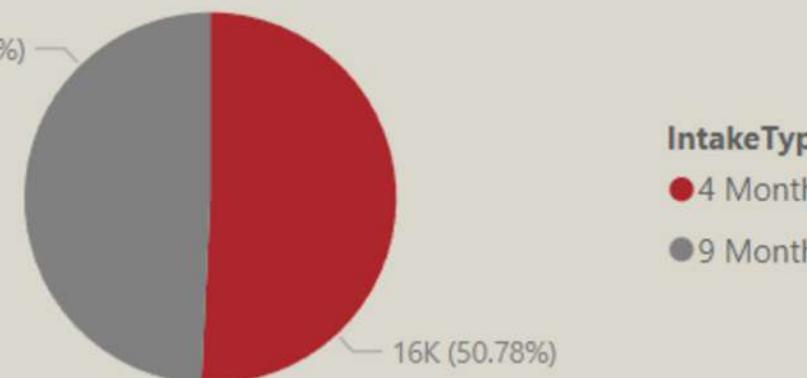
Game Development

Top Hired Track

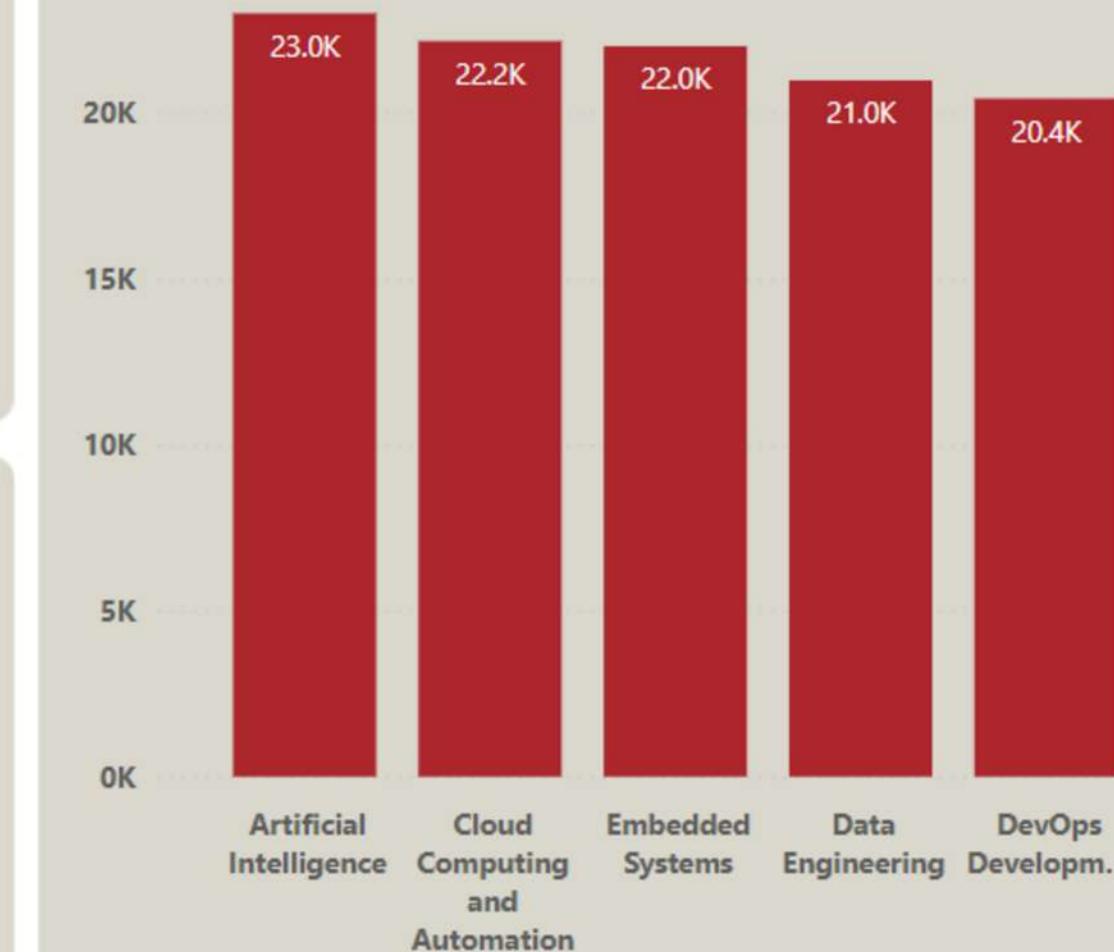
Top 5 Branches by Hiring %



Average Salary by IntakeType



Average Salary by Track





Career | Location & Industry

Filter by Intake

All

Date
11/2/1992 - 1/1/2028

Overview

Company Performance

Track & Branch

Location

Job Titles

Retail

Top Industry by Avg Salary

12

No. Industries

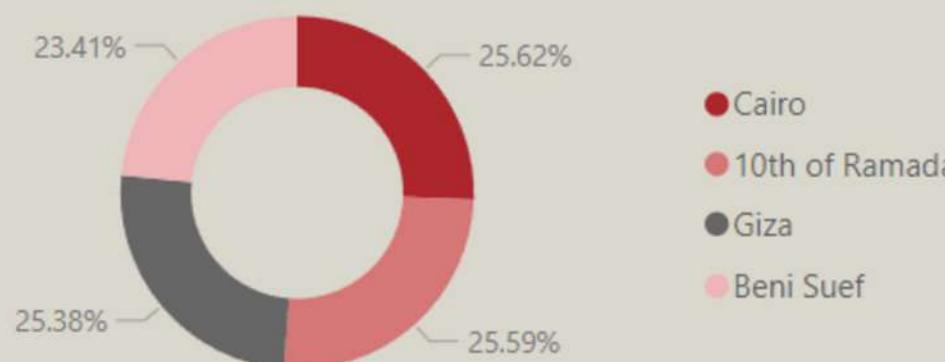
4

No. Companies' Locations

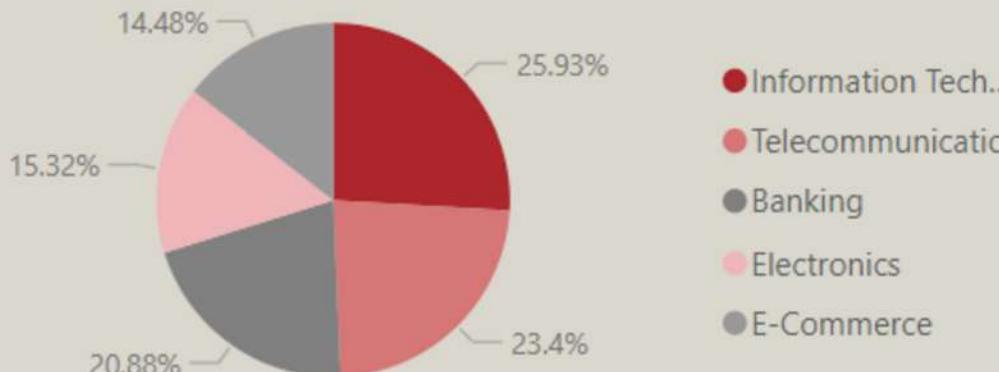
Cairo

Max Salary Location

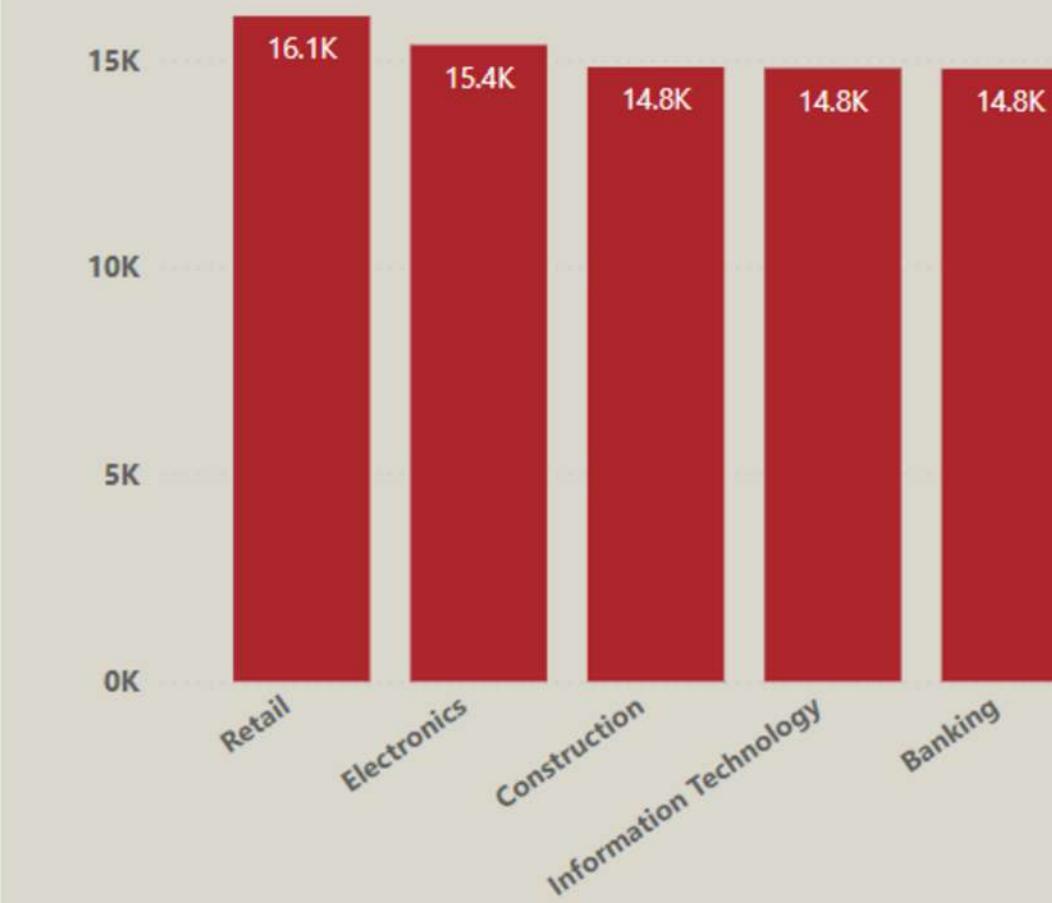
Max Salaries by Location



No. Hired by Industry



Average Salary by Industry





Career | Job Titles

Filter by Industry

All

Date

11/2/1992 1/1/2028

Overview

Company Performance

Track & Branch

Location

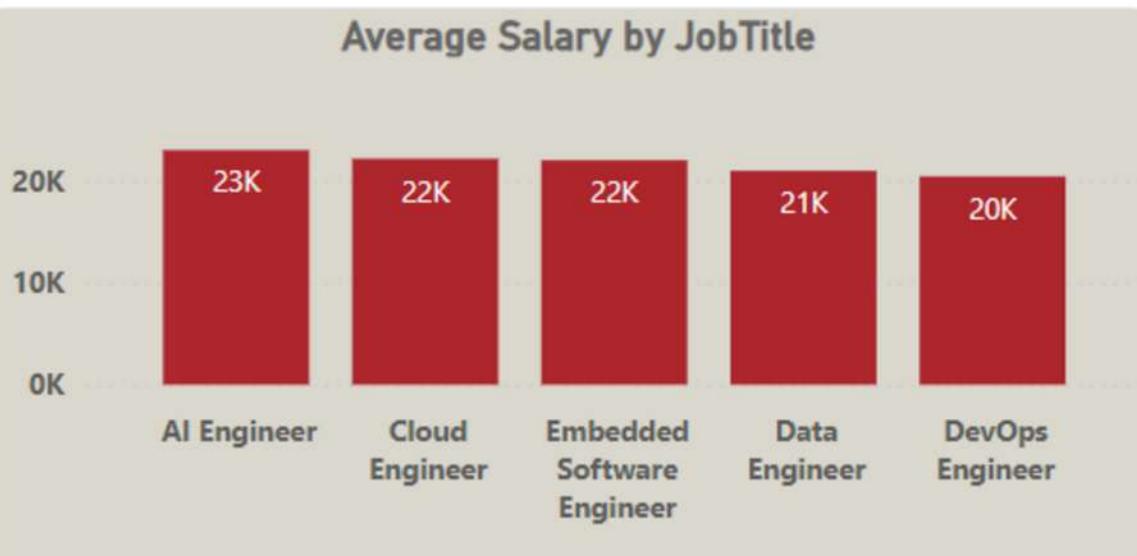
Job Titles

20

No Job Titles

AI Engineer

Top Avg Salary by Job Title



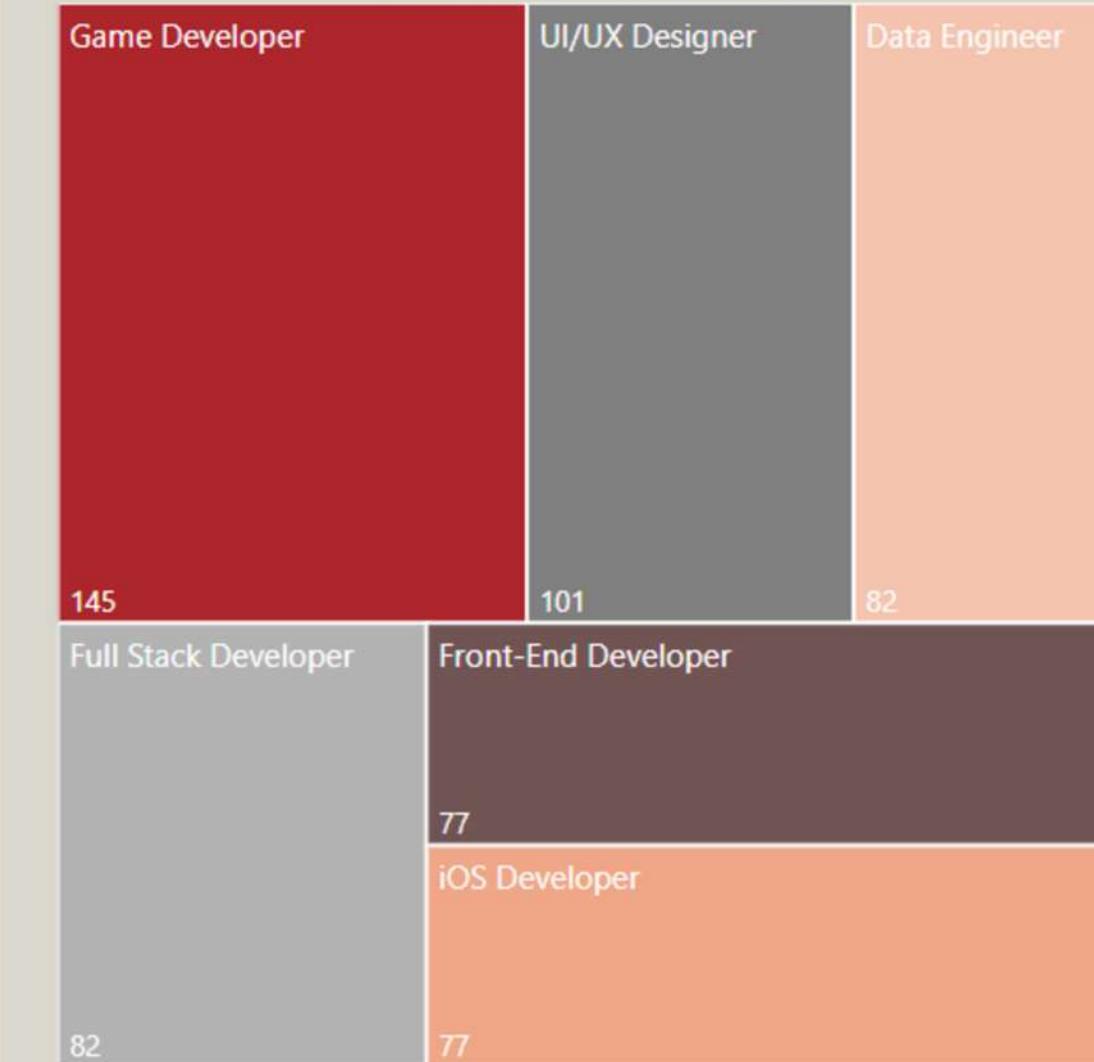
Game Developer

Top Hiring Rate by Job Title

89

Avg Grad-Hiring Gap (Days)

Total No. Graduates by JobTitle





Branch
**Smart
Village**

Track
**Full Stack Web
Development**

Ali Samy



1.00

Pass Rate

12

Max Score

12.00

Average Score

7

Total Attempts

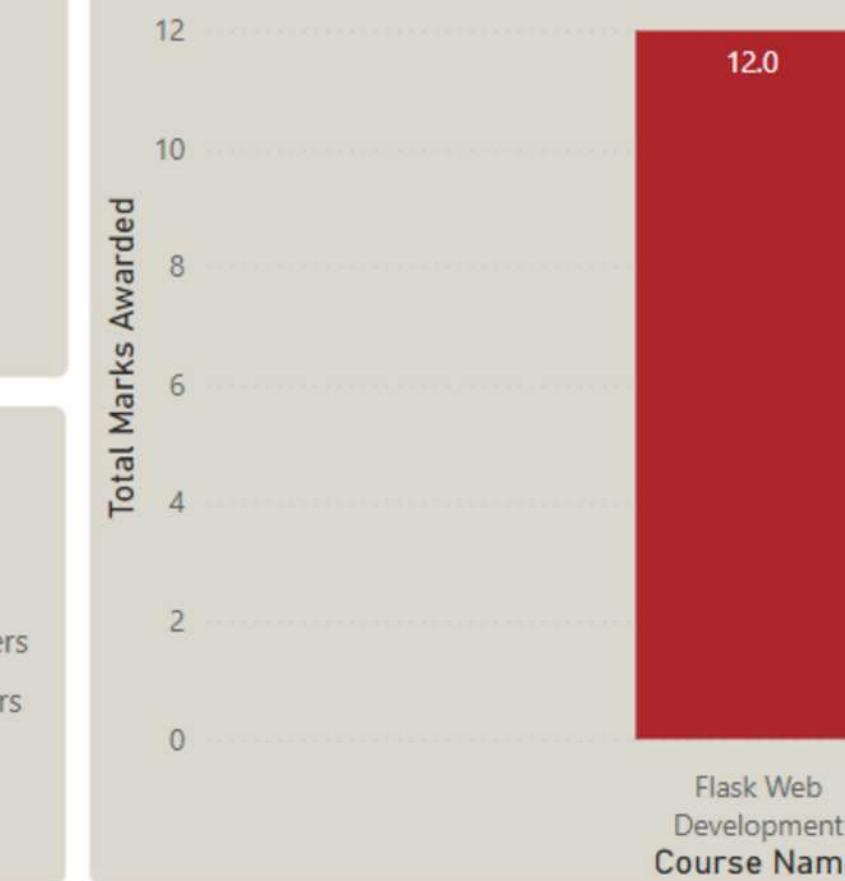
1

Total Exams

Total Marks Awarded in All Exams



Marks by Course



Correct vs Wrong Answers





Branch
Damanhour

Track
**Artificial
Intelligence**

Salma Khaled



1.00

Pass Rate

12

Max Score

11.50

Average Score

14

Total Attempts

2

Total Exams

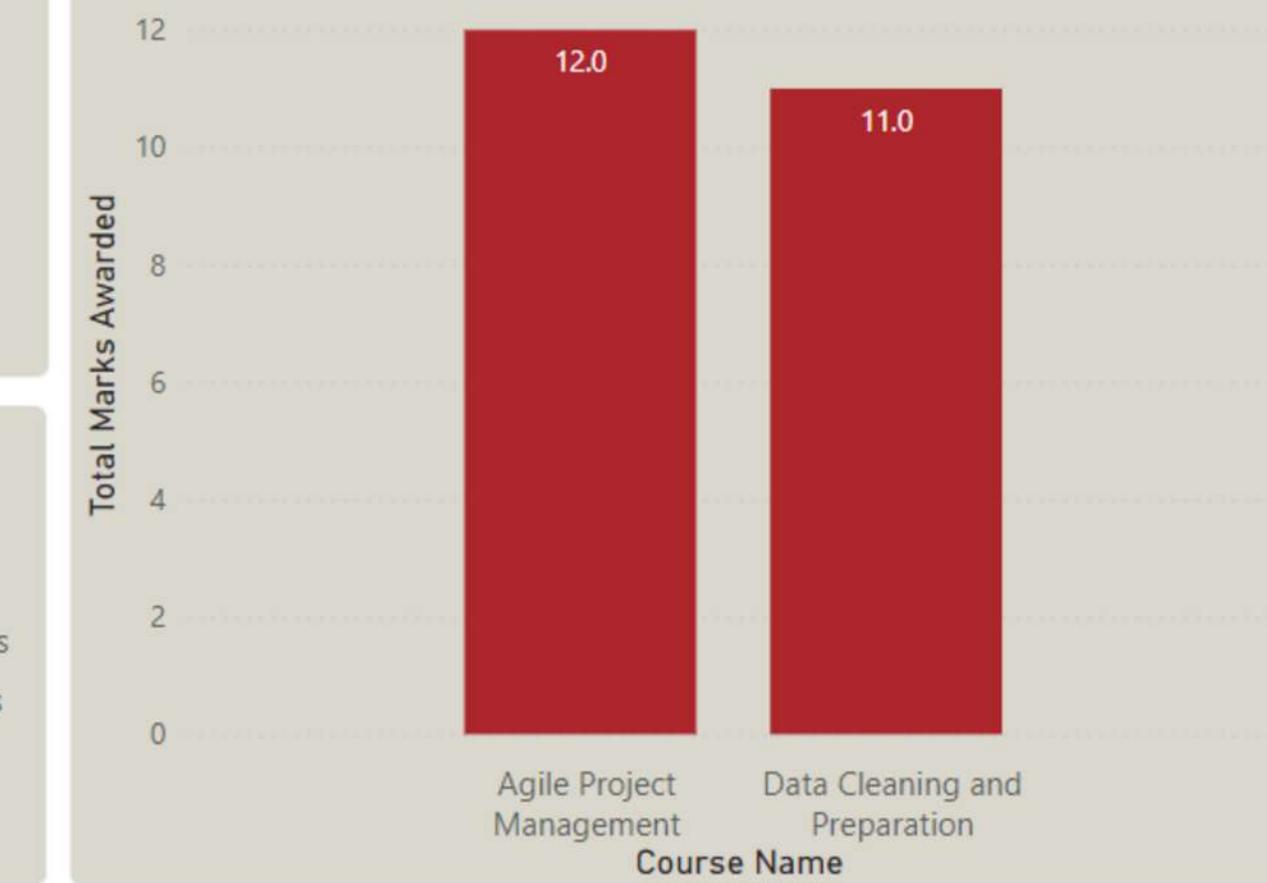
Total Marks Awarded in All Exams



Correct vs Wrong Answers



Marks by Course





Branch
Assiut

Track
IOS Development

Bouls Emad



1.00

Pass Rate

12

Max Score

10.50

Average Score

14

Total Attempts

2

Total Exams

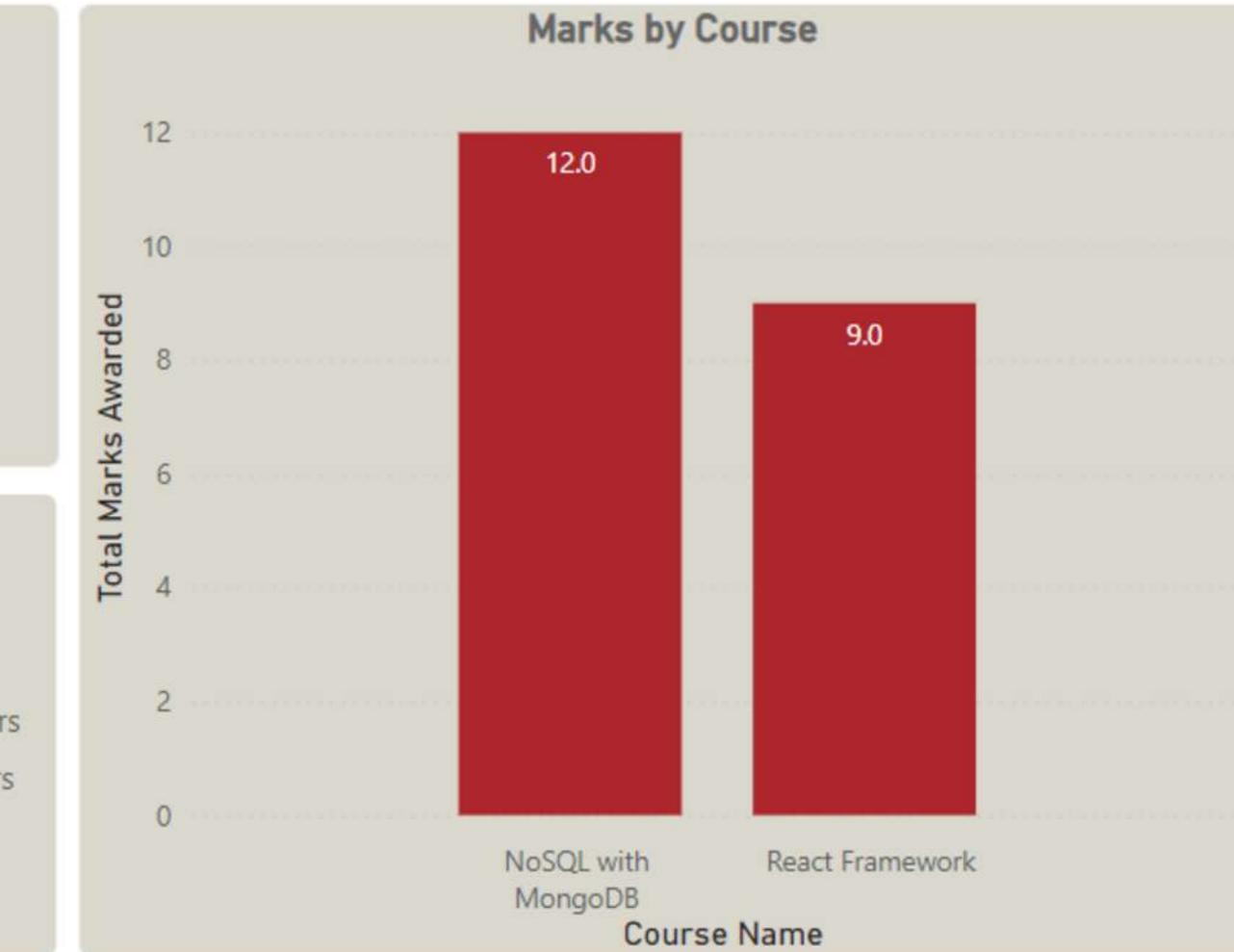
Total Marks Awarded in All Exams



Correct vs Wrong Answers



Marks by Course



Power Apps Exam System

Objective :

Building an interactive exam app using Power Apps + SQL Server to let students log in, answer questions, and view scores instantly.

App Flow :

Student Login (Email & Password) → Dynamic Exam Questions & Choices → Instant Score After Submission → Student Dashboard & Analytics

Login

mahmoud.hany@gmail.com

.....

Login

59:49

What is a DAX formula used for in Power BI?

- Creating calculated columns and measures**
- Designing visualizations**
- Managing user permissions**

What type of data sources can Power BI connect to?

- Multiple sources including databases, files, and cloud services**
- Only Excel files**
- Only SQL databases**

Which component is used to create reports in Power BI?

- Power BI Desktop**
- Power BI Gateway**
- Power BI Embedded**

Submit

Exam Results

Your Score: 16 / 22

Percentage: 72.73%

Status: Pass



Student: Mahmoud Hany

CourseName	Percentage	Score	Status	TotalMarks	InstructorName
Django Framework	88.24	15	Pass	17	Maha Youssef
Flask Web Development	89.47	17	Pass	19	Mona Ibrahim

Rows: 2



Hi, I am your virtual assistant



what are the top 3 courses in failure rate ?

who are the instructors achieve highest exam scores

Ask a question..

0/2000



Exam Result | Course - Instructor

Gender

All

Date

11/2/1992 1/1/2028

Overview

Student Performance

Course & Instructor Performance

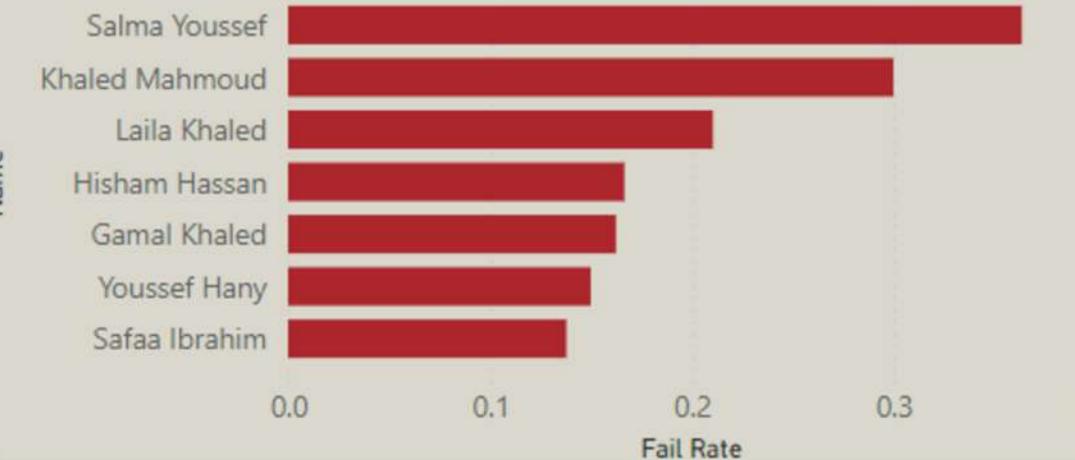
500
Total Student

10.97
Average Score

724
Total Attempts

11.02
Avg Score by Course

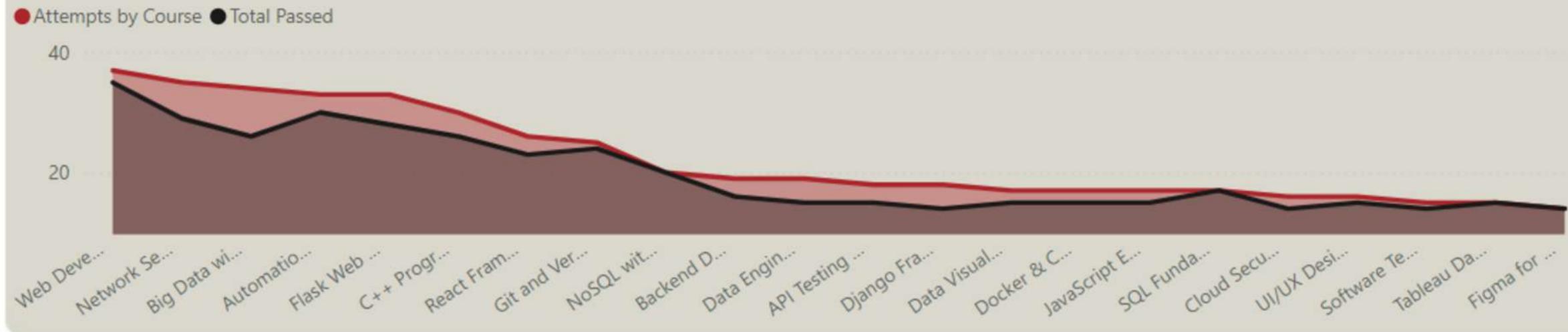
Top 10 Instructors by Fail Rate



Average Score by Course



Attempts by Course and Total Passed by CourseName





Hi, I am your virtual assistant

how many students failed at power bi exams?



The number of students who failed the Power BI exams is 2.
Would you like to know more about the students who failed?

Ask a question..

0/2000

Problems:

- High cost
- Limited to filter context
- Low customization



Hi, I am your virtual assistant



who are the instructors achieve highest exam scores



The instructors who achieved the highest exam scores are:

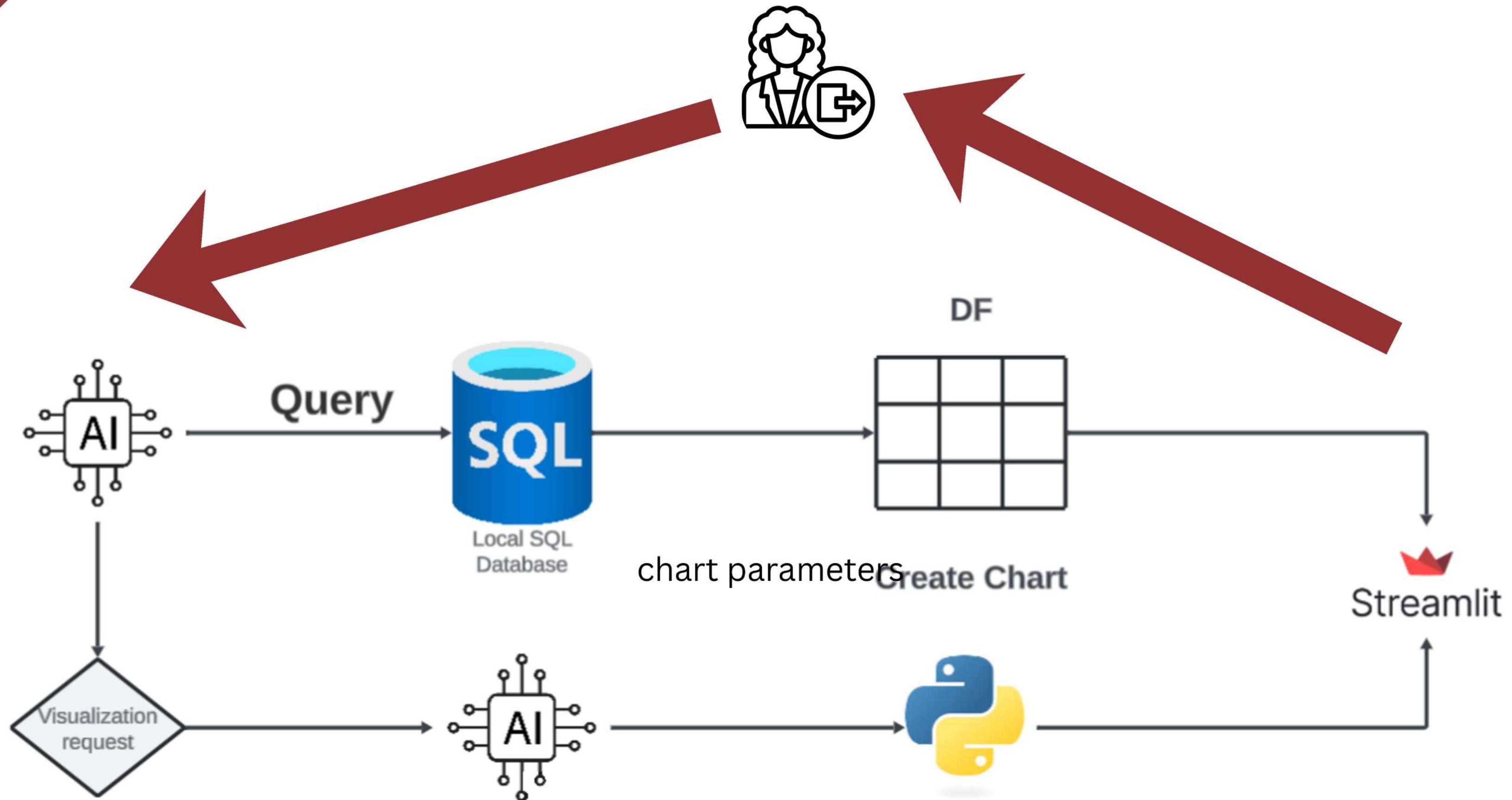
Instructor Full Name	Total Score
Mona Ibrahim	6,573.37%
Gamal Khaled	6,267.36%
Reem Samir	5,771.73%

These scores reflect the total percentage achieved by each instructor. Would you like to know more about their courses or student performance?

Ask a question..



0/2000



Ask questions about students, courses, exams, and more...



give me 2 students in intake 46



Two students from intake 46 are Hager Ali and Heba Mostafa.

StudentID	FullName	IntakeNumber
1085	Hager Ali	46
1086	Heba Mostafa	46



give me the list of courses registered by student named ali ahmed



Ali Ahmed is not currently registered for any courses. Let me know if you'd like help reviewing course options or checking another student's registration details.

Ask a question about the examination system...



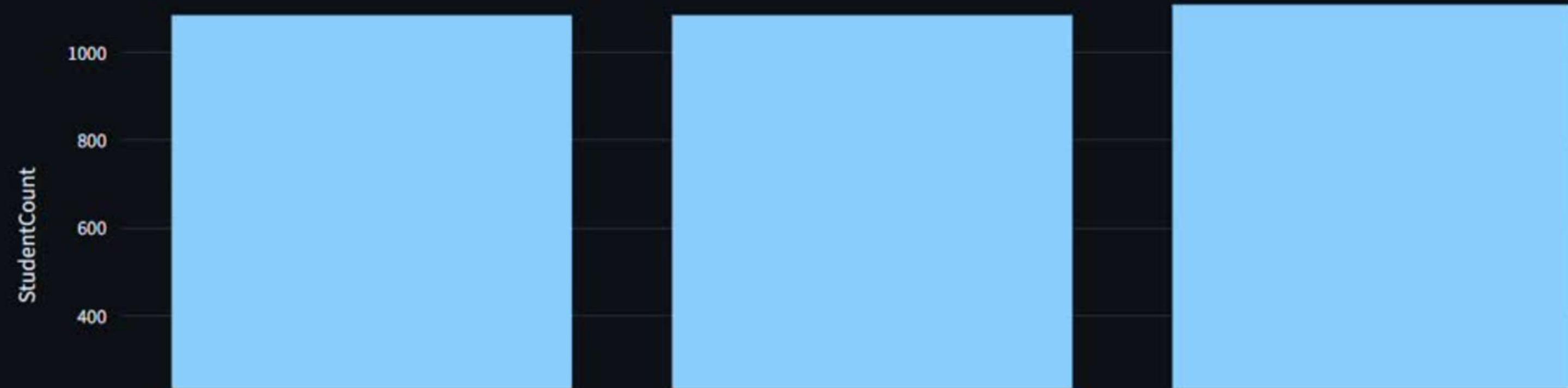
```
select s.F_Name,s.L_Name  
from Student s  
where s.F_Name = 'ali' and s.L_Name ='ahmed'
```

Results	Messages
F_Name	L_Name



- 3 total rows
- IntakeIDs: 1, 2, 3

IntakeID	StudentCount	
1	1084	
2	1084	
3	1108	



Ask a question about the examination system... >

key features:

1. It keeps the context of the session chat
2. It can handle non-tech users.
3. It optimizes the token usage.
4. Outputs: Query results, viz charts, natural language explanation

Conclusion:

The Online Examination System for ITI successfully streamlines the entire examination process, from test creation to result analysis. By integrating a robust SQL Server database with a user-friendly desktop application and advanced reporting tools like SSRS and Power BI, the system enhances accuracy, efficiency, and transparency in exam management. It not only reduces manual effort but also provides ITI staff with valuable insights into student performance, supporting informed decision-making and continuous improvement in academic operations.

THANK you