

ITI Examination System

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ABSTRACT

To evaluate and enhance the effectiveness of academic qualifications, it is crucial to have a reliable system that determines whether these qualifications are applied appropriately. For this purpose, we propose an examination system designed to measure students' comprehension and mastery of specific subjects or courses.

The outcomes of these exams can highlight strengths and weaknesses, guiding future training and development initiatives. Additionally, with the growing popularity of online learning and freelance opportunities, such systems can help track and assess students' acquired skills more efficiently.

In essence, an examination system represents a vital element in the educational evaluation process. It ensures that learning standards are upheld and that students receive fair, accurate, and constructive feedback on their academic performance.

INTRODUCTION

The rapid evolution of technology is reshaping the world at an extraordinary pace. As innovation continues to advance daily, it has become essential to adapt, understand, and evaluate our capabilities within this constantly changing environment. In this context, the examination system plays a vital role in accurately measuring learners' knowledge, identifying strengths and weaknesses, and supporting data-driven decisions related to skill development and continuous improvement—particularly in fields such as data science and other technology-based disciplines.

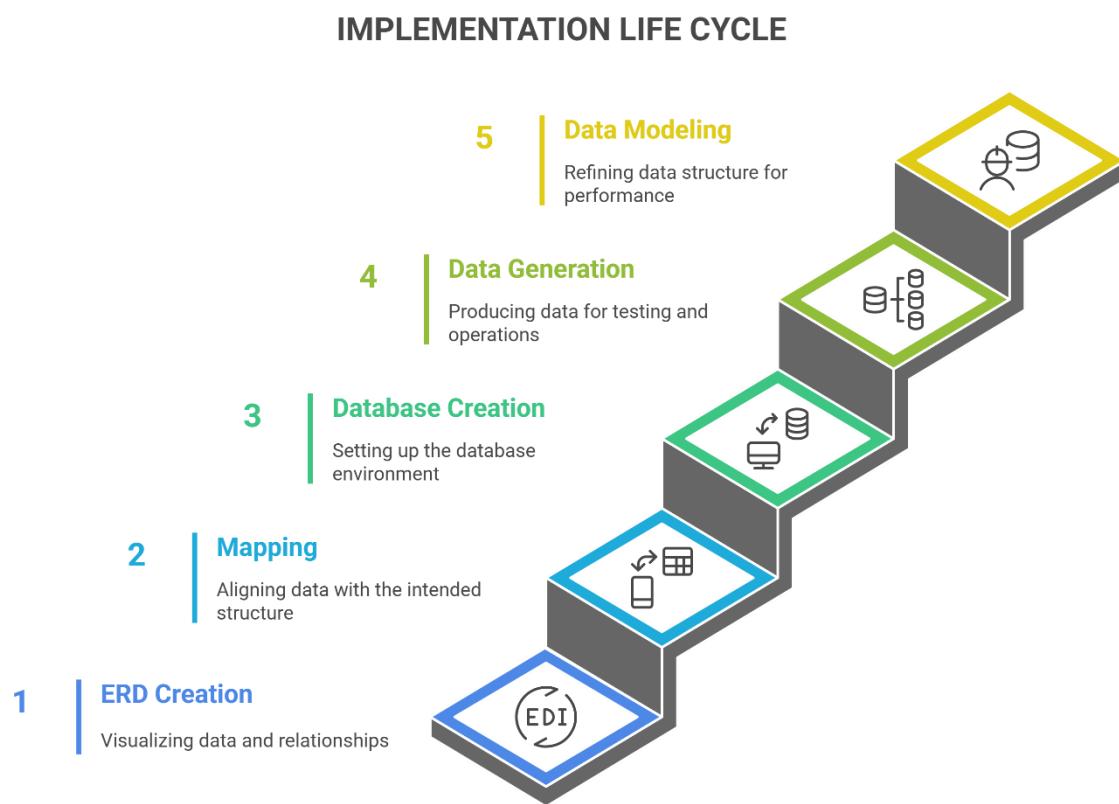
The proposed system will be organized into departments that include instructors responsible for guiding students throughout their learning journey and preparing them for future careers. The offered courses are aligned with modern technological trends and emphasize the importance of data-driven skills, including Python, SQL and Data Warehousing.

The system can include multiple exam formats such as multiple-choice and true/false questions, which allow for efficient assessment and help reduce stress, promoting better mental well-being among learners.

Through continuous testing and feedback, students can recognize areas that need further development, refine their learning focus, and remain up to date with emerging technologies and best practices. Once feedback is given, learners receive their grades and can determine whether to revisit specific course content or advance to higher levels. Ultimately, completing all courses and assessments leads to certification—an acknowledgment of proficiency that enhances employability and provides organizations with qualified professionals ready to meet industry demands.

IMPLEMENTATION LIFE CYCLE

The implementation life cycle is an iterative process designed to ensure that the system fulfills all specified requirements. It includes several phases, starting from developing entity-relationship diagrams (ERDs) and creating the database structure, followed by mapping entities and relationships, and then performing detailed data modelling to ensure consistency and integrity. Finally, the process concludes with generating reports and building interactive dashboards that transform data into meaningful insights.



ERD (Entity Relationship Diagram):

In this phase, we designed the entity-relationship diagram to define the main entities, their attributes, and the relationships between them. This step provided a clear conceptual view of how data flows within the system.

Mapping:

After completing the ERD, we performed the mapping process to translate the

conceptual model into a logical database structure. This included defining primary and foreign keys, establishing relationships between tables, and preparing the foundation for database creation and further data modeling.

Database creation: In this stage, we implemented the database schema by writing and executing the required SQL scripts. The system components were then integrated into a functional database environment, followed by testing to verify that it effectively handles exam data, student responses, and related operations.

Data Generation:

In this phase, we used Python alongside several artificial intelligence platforms to generate the required dataset. These AI-based tools were employed to create realistic and diverse data that simulate actual exam results, student behaviors, and course interactions. This helped us obtain high-quality synthetic data suitable for testing and system evaluation.

Data Modelling:

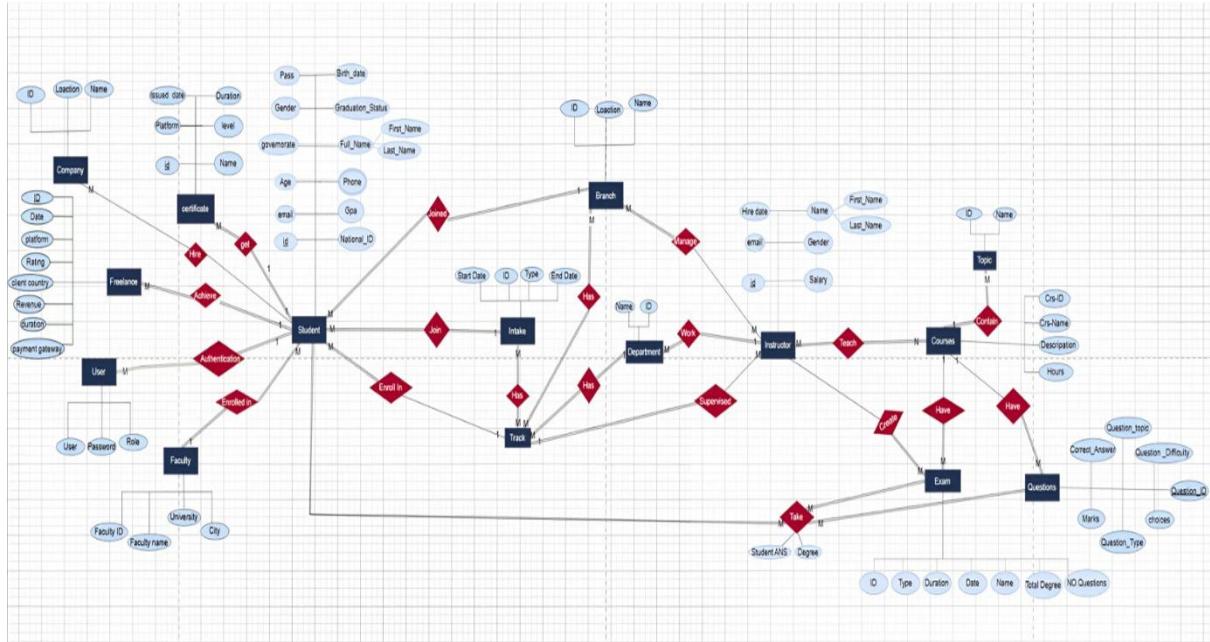
In this phase, we implemented a Snowflake Data Model designed to organize and manage complex academic data efficiently.

The model ensures normalization by minimizing redundancy and maintaining strong referential integrity.

This structure enables better analytical reporting and scalability for future data expansion.

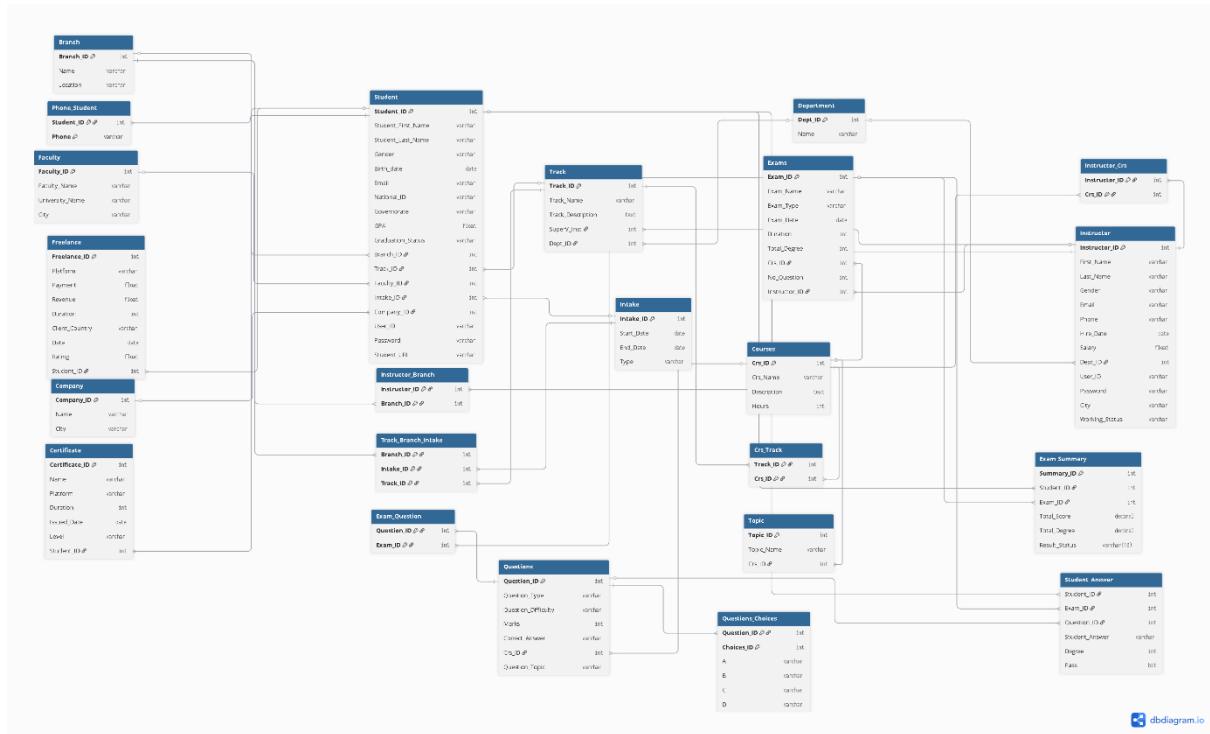
ERD (Entity Relationship Diagram)

Examination system ERD includes entities such as Student, Intake, Department, questions, exams, Courses, and other entities, then relation between each other.



MAPPING

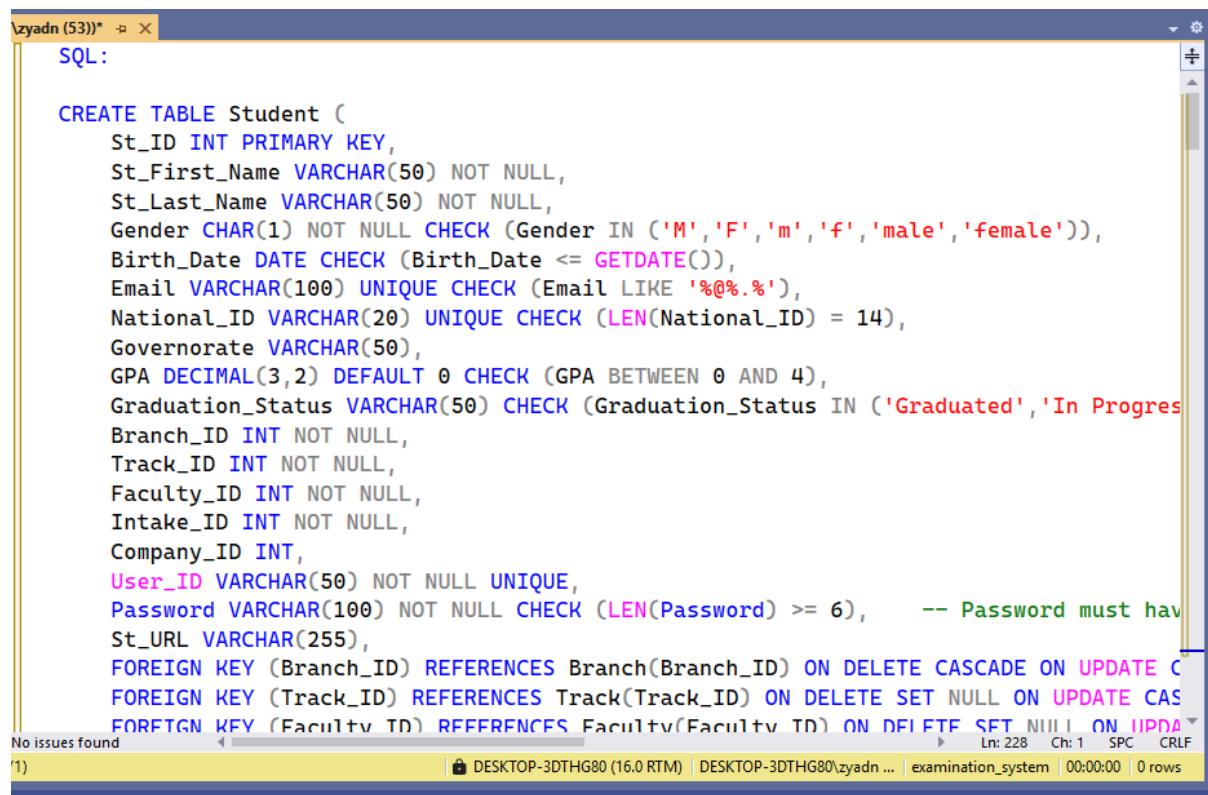
Mapping in the examination system refers to the process of creating a correspondence or association between different entities or attributes in the system needed to implement in the SQL Server Management Studio.



dbdiagram.io

Data Base Creation

In this phase, we implemented the database by creating all necessary tables, relationships, and constraints based on the ERD and mapping design. SQL scripts were used to build the database structure, define primary and foreign keys, and ensure data integrity.



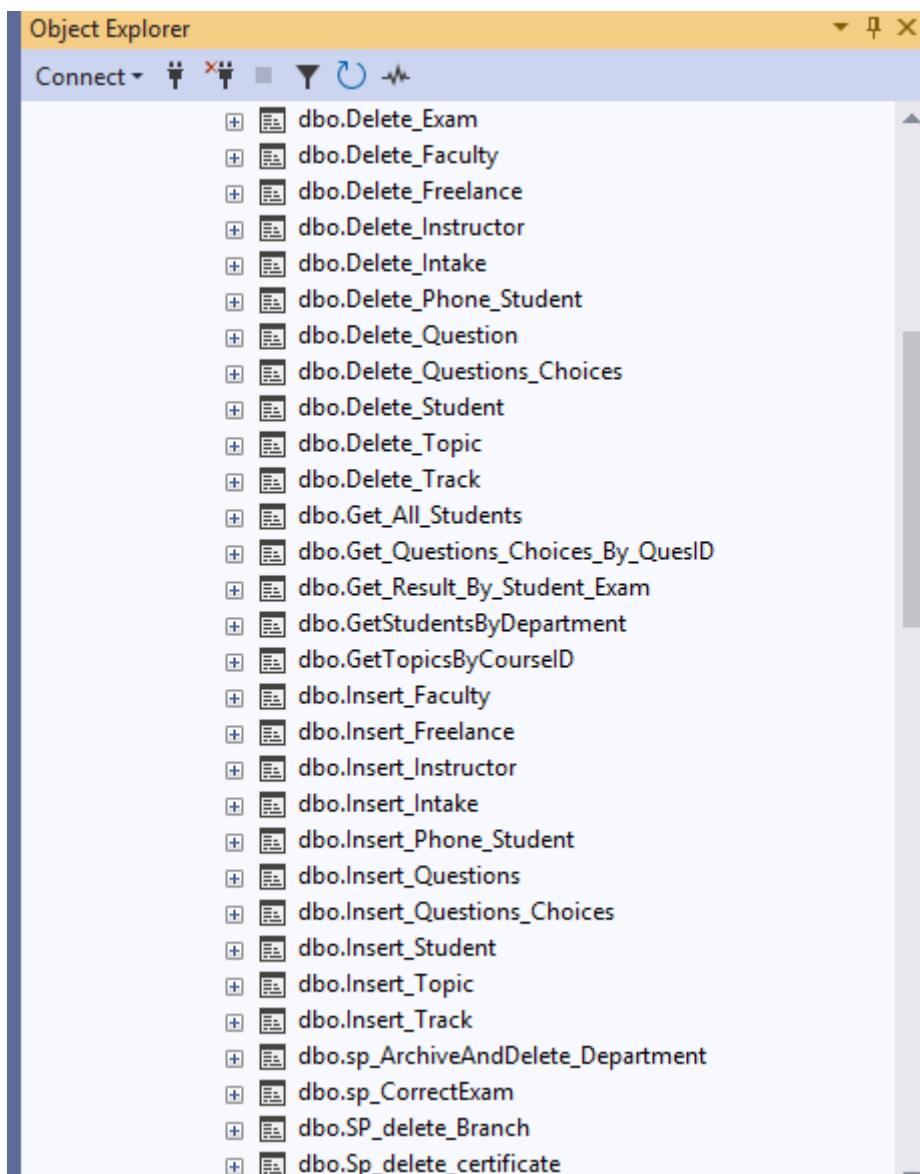
The screenshot shows a SQL editor window titled 'zyadn (53)*'. The SQL code is as follows:

```
CREATE TABLE Student (
    St_ID INT PRIMARY KEY,
    St_First_Name VARCHAR(50) NOT NULL,
    St_Last_Name VARCHAR(50) NOT NULL,
    Gender CHAR(1) NOT NULL CHECK (Gender IN ('M','F','m','f','male','female')),
    Birth_Date DATE CHECK (Birth_Date <= GETDATE()),
    Email VARCHAR(100) UNIQUE CHECK (Email LIKE '%@%.%'),
    National_ID VARCHAR(20) UNIQUE CHECK (LEN(National_ID) = 14),
    Governorate VARCHAR(50),
    GPA DECIMAL(3,2) DEFAULT 0 CHECK (GPA BETWEEN 0 AND 4),
    Graduation_Status VARCHAR(50) CHECK (Graduation_Status IN ('Graduated', 'In Progress')),
    Branch_ID INT NOT NULL,
    Track_ID INT NOT NULL,
    Faculty_ID INT NOT NULL,
    Intake_ID INT NOT NULL,
    Company_ID INT,
    User_ID VARCHAR(50) NOT NULL UNIQUE,
    Password VARCHAR(100) NOT NULL CHECK (LEN>Password) >= 6), -- Password must have at least 6 characters
    St_URL VARCHAR(255),
    FOREIGN KEY (Branch_ID) REFERENCES Branch(Branch_ID) ON DELETE CASCADE ON UPDATE CASCADE,
    FOREIGN KEY (Track_ID) REFERENCES Track(Track_ID) ON DELETE SET NULL ON UPDATE CASCADE,
    FOREIGN KEY (Faculty_ID) REFERENCES Faculty(Faculty_ID) ON DELETE SET NULL ON UPDATE CASCADE
);
```

The status bar at the bottom indicates 'No issues found' and shows the current state of the editor.

Stored Procedures:

In this phase, we created stored procedures for each table in the database to handle the main data operations. These procedures were developed to perform Insert, Update, and Delete actions efficiently and securely. Using stored procedures helped improve performance, maintain data consistency, and simplify interaction between the application and the database by centralizing all SQL logic in one place.



Insertion Stored Procedure:

```
SQLQuery2.sq...0\zyadn (53)* + ×
1   --Exam Generation
2   CREATE PROCEDURE [dbo].[SP_Generate_Random_Exam]
3       @exam_name      VARCHAR(100),
4       @exam_Type      VARCHAR(50),
5       @exam_Date      DATE,
6       @duration       INT,
7       @total_Degree   DECIMAL(5, 2),
8       @crs_ID         INT,
9       @inst_ID        INT,
10      @NoOfQuestion   INT
11
12      AS
13      BEGIN
14          -- 1. Validation: Check if Course ID exists
15          IF NOT EXISTS (SELECT 1 FROM Courses WHERE Crs_ID = @crs_ID)
16          BEGIN
17              SELECT 'Error: The provided Course ID does not exist in the database.' AS Message;
18              RETURN;
19          END
20          -- 2. Validation: Check if Instructor ID exists
21          IF NOT EXISTS (SELECT 1 FROM [dbo].[Instructor] WHERE Inst_ID = @inst_ID)
22          BEGIN
23              SELECT 'Error: The provided Instructor ID does not exist in the database.' AS Message;
24              RETURN;
25          END
26          -- 3. Validation: Check if enough questions are available
27          DECLARE @AvailableQuestions INT;
28          SELECT @AvailableQuestions = COUNT (Ques_ID)
29          FROM [dbo].[Questions]
30          WHERE Crs_id = @crs_ID;
31
32          IF @NoOfQuestion > @AvailableQuestions
33          BEGIN
34              SELECT CONCAT('Error: Only ', @AvailableQuestions, ' questions are available for this course. Cannot generate ', @NoOfQuestion, ' question')
35              RETURN;
36          END

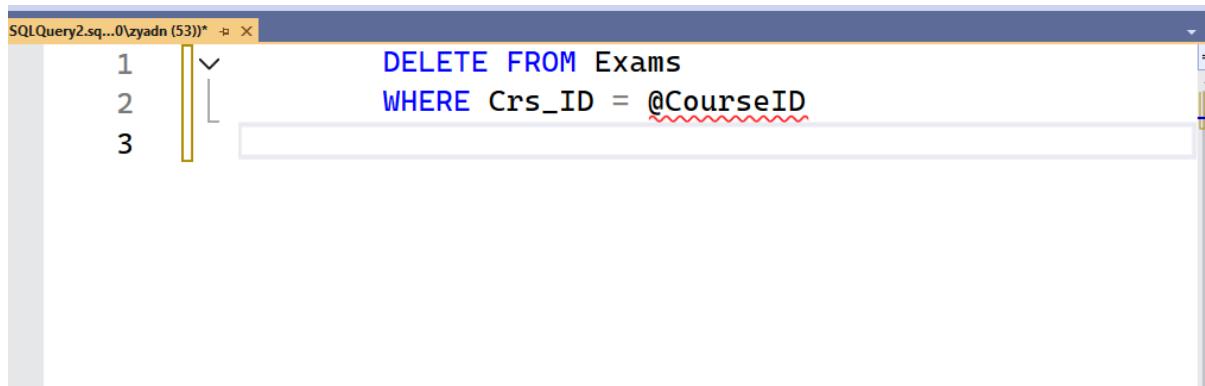
```

Update Stored Procedure:

```
SQLQuery2.sq...0\zyadn (53)* + ×
1   CREATE PROC Update_Exam
2       @exam_id INT,
3       @exam_name VARCHAR(100),
4       @exam_date DATE,
5       @exam_type VARCHAR(50),
6       @exam_duration INT,
7       @exam_total_degree Decimal(5,2),
8       @crs_id INT,
9       @inst_id INT,
10      @exam_no_of_question INT
11
12      AS
13      BEGIN
14          IF NOT EXISTS (SELECT 1 FROM Courses WHERE Crs_ID = @crs_id)
15          BEGIN
16              SELECT 'No Course Exists with this ID'
17          END
18
19          IF NOT EXISTS (SELECT 1 FROM Instructor WHERE Inst_ID = @inst_id)
20          BEGIN
21              SELECT 'No Instructor Exists with this ID'
22          END
23
24          IF EXISTS(SELECT 1 FROM Exams WHERE Exam_ID = @exam_id)
25          BEGIN
26              UPDATE Exams
27              SET Exam_Name = @exam_name,
28                  Exam_Date = @exam_Date,
29                  Exam_Type = @exam_type,
30                  Duration = @exam_duration,
31                  Total_Degree = @exam_total_degree,
32                  Crs_ID = @crs_id,
33                  Inst_ID = @inst_id,
34                  No_Question = @exam_no_of_question
35              WHERE Exam_ID = @exam_id
36          END
37          ELSE
38              SELECT 'No Exam Exists with this ID'

```

Delete Stored Procedure:



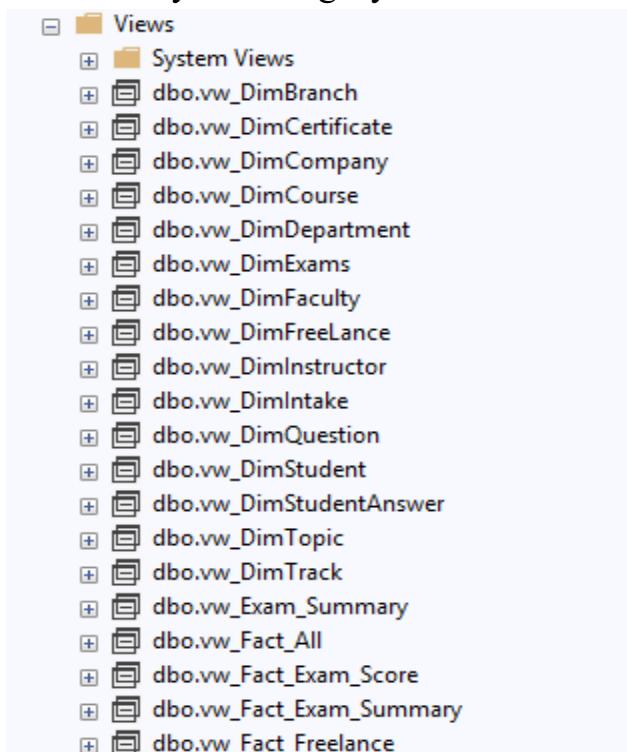
The screenshot shows a SQL Server Management Studio (SSMS) window titled "SQLQuery2.sq...0\zyadn (53)*". The query pane contains the following T-SQL code:

```
1  DELETE FROM Exams  
2  WHERE Crs_ID = @CourseID  
3
```

Views:

In this phase, we created several database views to simplify data retrieval and improve system performance. Each view was designed to combine data from multiple tables, making it easier to generate reports and present meaningful insights for students, instructors, and administrators.

Additionally, the views played an important role in the data modelling process, as they were used to organize and structure the data in a way that supports analysis and visualization within dashboards and reports. This approach helped ensure consistency between the database and the analytical layer of the system while maintaining data security and integrity.



The screenshot shows the SSMS Object Explorer with the "Views" node expanded. The tree view lists the following views:

- + Views
- + System Views
- + dbo.vw_DimBranch
- + dbo.vw_DimCertificate
- + dbo.vw_DimCompany
- + dbo.vw_DimCourse
- + dbo.vw_DimDepartment
- + dbo.vw_DimExams
- + dbo.vw_DimFaculty
- + dbo.vw_DimFreeLance
- + dbo.vw_DimInstructor
- + dbo.vw_DimIntake
- + dbo.vw_DimQuestion
- + dbo.vw_DimStudent
- + dbo.vw_DimStudentAnswer
- + dbo.vw_DimTopic
- + dbo.vw_DimTrack
- + dbo.vw_Exam_Summary
- + dbo.vw_Fact_All
- + dbo.vw_Fact_Exam_Score
- + dbo.vw_Fact_Exam_Summary
- + dbo.vw_Fact Freelance

Department View:

```
+ X
CREATE VIEW vw_DimDepartment AS
SELECT
    department.Dept_Id,
    department.Department_Name
FROM dbo.department;
GO
1
```

Topic View:

```
* + X
CREATE VIEW vw_DimTopic AS
SELECT
    Topic.Topic_ID,
    Topic.Topic_Name,
    Topic.Crs_ID
FROM dbo.Topic;
GO
1
```

Data Modelling

The Snowflake schema consists of multiple interrelated tables that represent entities like Students, Instructors, Faculties, Branches, Courses, Departments, and Social Media Activity.

Each dimension is normalized into smaller related tables to reduce duplication and enhance data consistency.

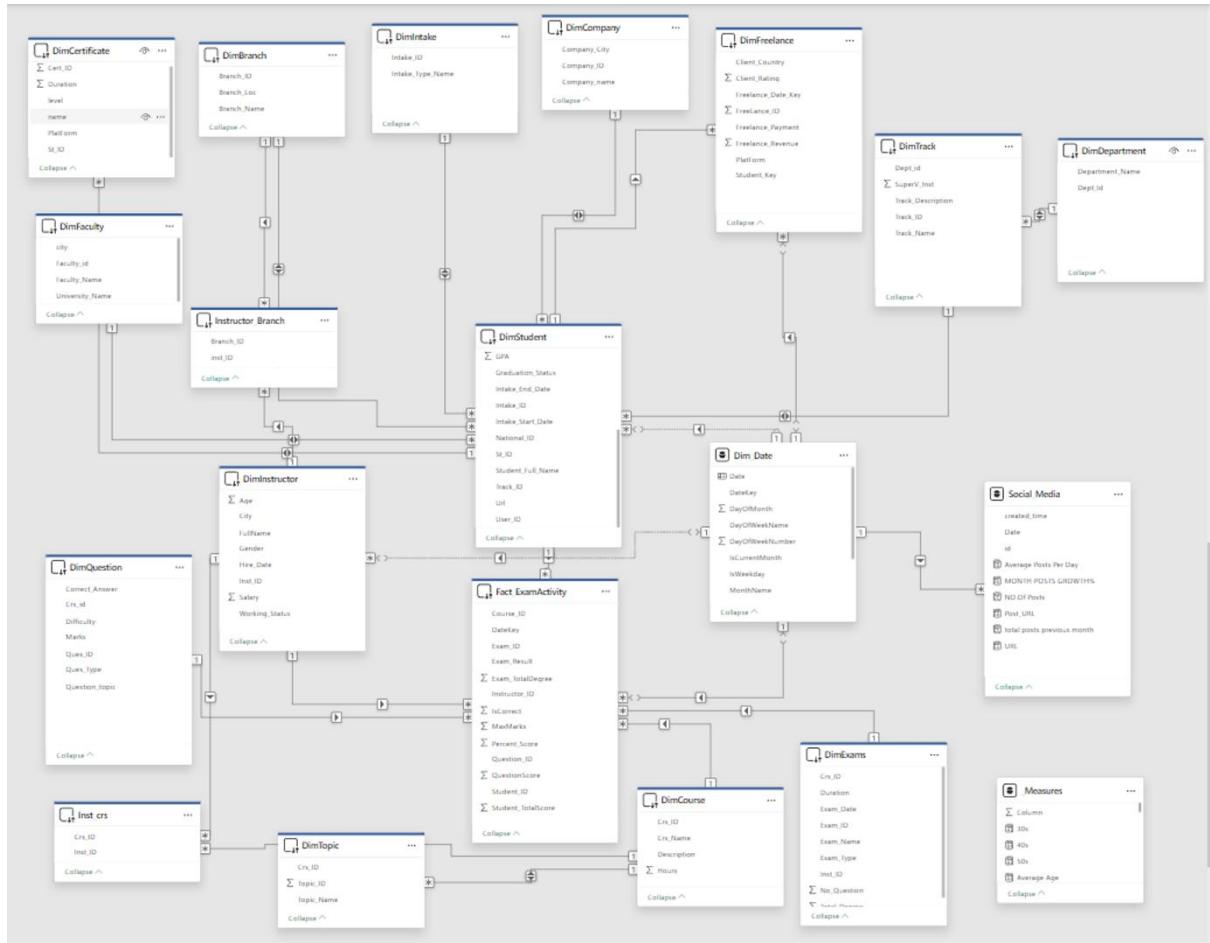
For example, the Student table connects to entities such as Faculty, Branch, Company, and Exam Activity, providing a comprehensive academic overview.

Similarly, the Instructor and Course tables are linked through associative tables to handle many-to-many relationships efficiently.

The design follows a clear hierarchy: Fact tables capture measurable events like Exam Results or Activity Participation, while Dimension tables store descriptive attributes such as Faculty Name or Course Details.

This approach enables efficient querying, flexible reporting, and integration with BI tools like Power BI.

By adopting the Snowflake structure, the system achieves higher data integrity, easier maintenance, and optimized performance for analytical operations



SQL Service Reporting Services Report (SSRS)

Instructor Course Report

A stored procedure is created to generate an Instructor Course Summary Report by taking the Instructor ID as a parameter. It returns the instructor's name, the course they teach, and the number of enrolled students.



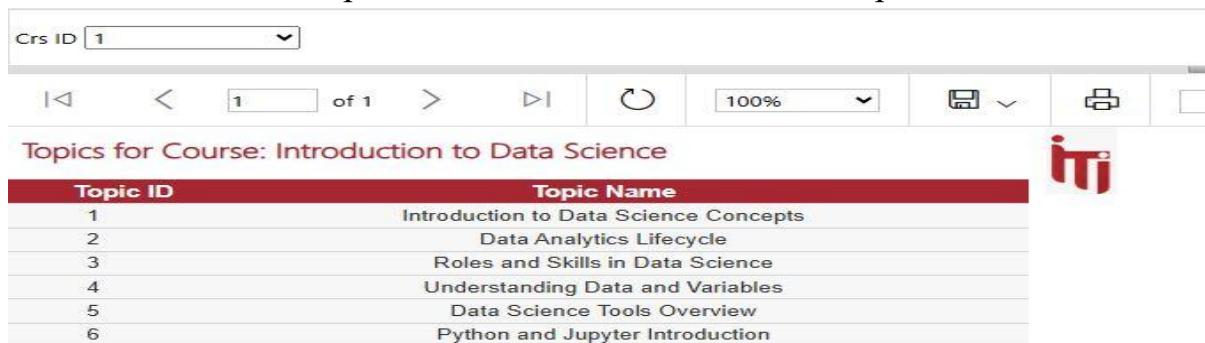
WorkLoad For inst_id :13



Instructor Name	Course Name	Total Students Enrolled
Hend Elsayed	ETL Development	136
Hend Elsayed	Microcontrollers & Arduino	281

Topic by Course

The Topic by Course Report uses a stored procedure that takes the Course ID as input and returns the course and its topics.



Topics for Course: Introduction to Data Science

Topic ID	Topic Name
1	Introduction to Data Science Concepts
2	Data Analytics Lifecycle
3	Roles and Skills in Data Science
4	Understanding Data and Variables
5	Data Science Tools Overview
6	Python and Jupyter Introduction

Course Grades by Student

A stored procedure is created to generate the Student Exam Report by taking the Student ID as a parameter. It returns the Exam ID, Exam Name, Course Name, Student Score, and Result Status.

The screenshot shows a software application window titled "Course grades for student : Sara Salem". At the top left is a dropdown menu labeled "St ID" with "Sara" selected. On the right is a "View Report" button. Below the title is a toolbar with various icons. The main area displays a table of course grades:

Exam ID	Exam Name	Course Name	Student Score	Obtained Result Status
300	Automation Testing with Selenium - Exam 4	Automation Testing with Selenium	60.00	passed
250	Data Engineering Capstone - Exam 2	Data Engineering Capstone	70.00	passed
206	Portfolio Development - Exam 2	Portfolio Development	90.00	Passed
220	SQL Advanced Queries - Exam 4	SQL Advanced Queries	80.00	passed

In the top right corner of the main area, there is a logo for "iti".

Exam Questions

A stored procedure is created to generate the Exam Report by taking the Exam Number as a parameter. It returns the exam questions and their corresponding answers.

The screenshot shows a software application window titled "Exam Questions" for Exam ID 2. The main area contains two questions:

Which technique is typically associated with Introduction to Data Science?

A) A common tool used alongside Introduction to Data Science (all)
B) A concept related to Introduction to Data Science
C) A common tool used alongside Introduction to Data Science (discover)
D) A different concept often confused with Introduction to Data Science (better)

Which statement about Introduction to Data Science is most accurate?

Student by Department

A stored procedure is created to generate the Students by Department Report by taking the Department ID as a parameter. It returns the department name and the list of students enrolled in it with information about each student.

Students for Department : Software Engineering



St ID	Student Full Name	Gender	Email	Governorate	GPA	Track Name	Branch Name	Intake Type
2	Walid Yacoub	M	walid.yacoub@student.it.i.local	Cairo	2.32	Big Data Engineering	ITI Aswan Branch	Intensive Code Camps -ICC
6	Ahmed Mostafa	M	ahmed.mostafa@student.it.i.local	Alexandria	2.90	Data Engineering	ITI Alexandria Branch	Professional training program
17	Sawsan Elgohary	F	sawsan.elgohary@student.it.i.local	Ismailia	2.03	Data Science	ITI Qena Branch	Professional training program
18	Karim Fahmy	M	karim.fahmy@student.it.i.local	Alexandria	2.17	Big Data Engineering	ITI Mansoura Branch	Intensive Code Camps -ICC
19	Rana Yacoub	F	rana.yacoub@student.it.i.local	Cairo	3.46	Data Engineering	ITI Aswan Branch	Summer Training
20	Sami Elkomy	M	sami.elkomy@student.it.i.local	Dakahlia	2.32	Machine Learning Engineering	ITI Menoufia Branch	Professional training program
24	Omar Nabil	M	omar.nabil@student.it.i.local	Cairo	3.59	Big Data Engineering	ITI Aswan Branch	Intensive Code Camps -ICC
25	Mona Mostafa	F	mona.mostafa@student.it.i.local	Sohag	2.02	Data Engineering	ITI Qena Branch	Intensive Code Camps -ICC
32	Nader Suleiman	M	nader.suleiman@student.it.i.local	Menoufia	3.72	Big Data Engineering	ITI Menoufia Branch	Professional training program
36	Sherif Abdalla	M	sherif.abdalla@student.it.i.local	Cairo	3.83	Machine Learning Engineering	ITI Mansoura Branch	Intensive Code Camps -ICC
37	Heba Khalifa	F	heba.khalifa@student.it.i.local	Sharqia	2.18	AI for Business	ITI Smart Village Branch	Intensive Code Camps -ICC
38	Nader Hammad	M	nader.hammad@student.it.i.local	Sohag	3.70	Applied Machine Learning	ITI Mansoura Branch	Professional training program
40	Rania Hassan	F	rania.hassan@student.it.i.local	Giza	2.89	Machine Learning Engineering	ITI Port Said Branch	Intensive Code Camps -ICC

Student Answer by Exam ID & Student ID

The Student Answer Report uses a stored procedure that takes the Exam ID and Student ID as input and returns the questions and student answers.

Exam ID St ID

|< < 1 of 1 > >| | 100% |

Ehab Mohamed Answers of Exam : 2

Which technique is typically associated with Introduction to Data Science?

B

Introduction to Data Science is a fundamental concept in this course.

True

Introduction to Data Science is a fundamental concept in this course.

True

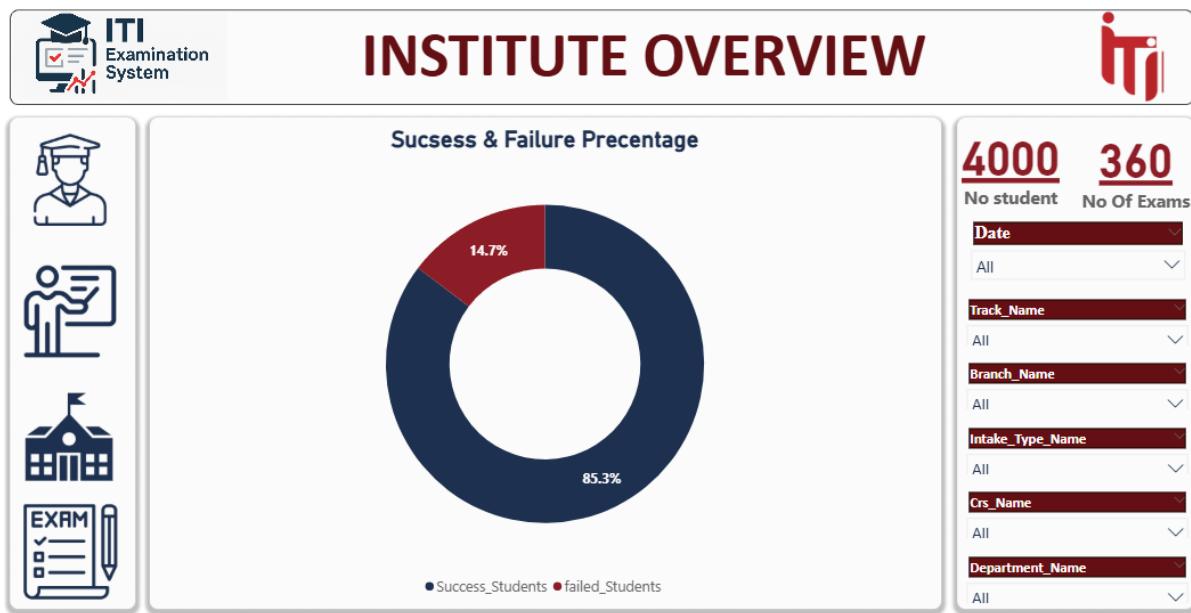
Which statement about Introduction to Data Science is most accurate?

D

Which of the following is the best description of Introduction to

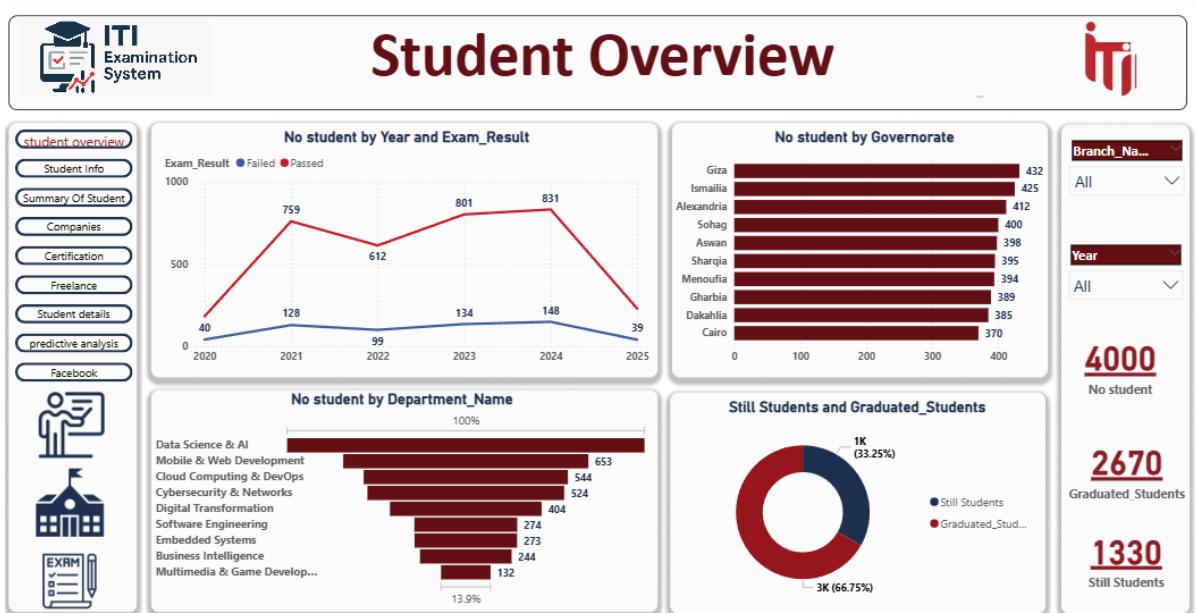
Dashboard Overview

Analyze the examination system as a whole and explain the numbers of instructors, Branches, Tracks, Exams, etc.



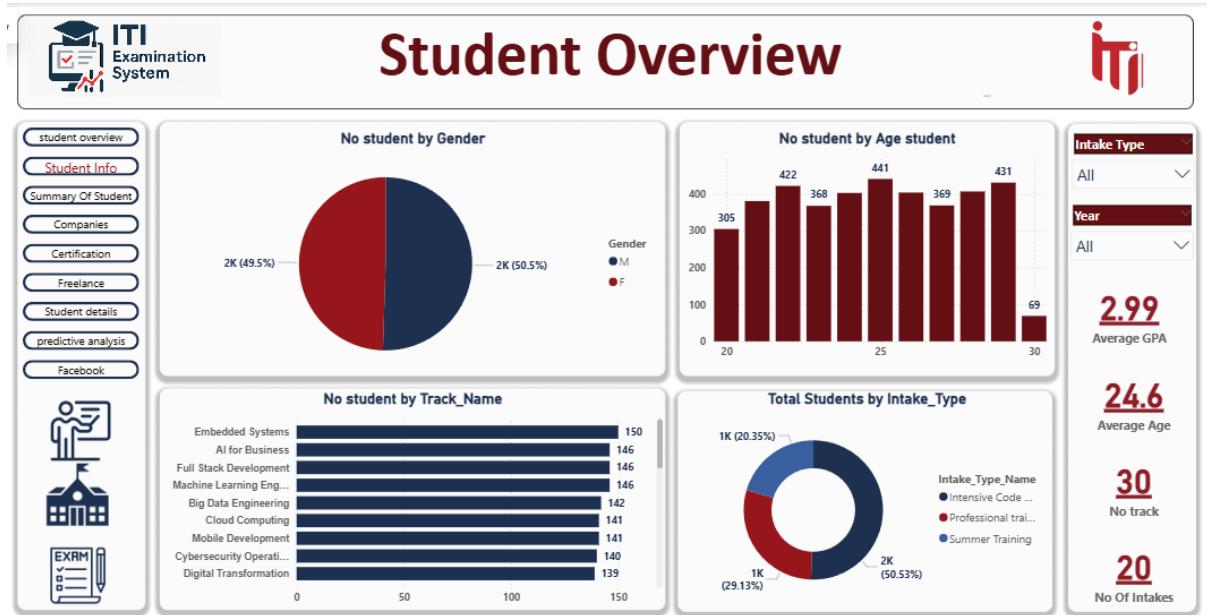
Student Overview 1

Displays the number of students enrolled in different departments and Governorate.



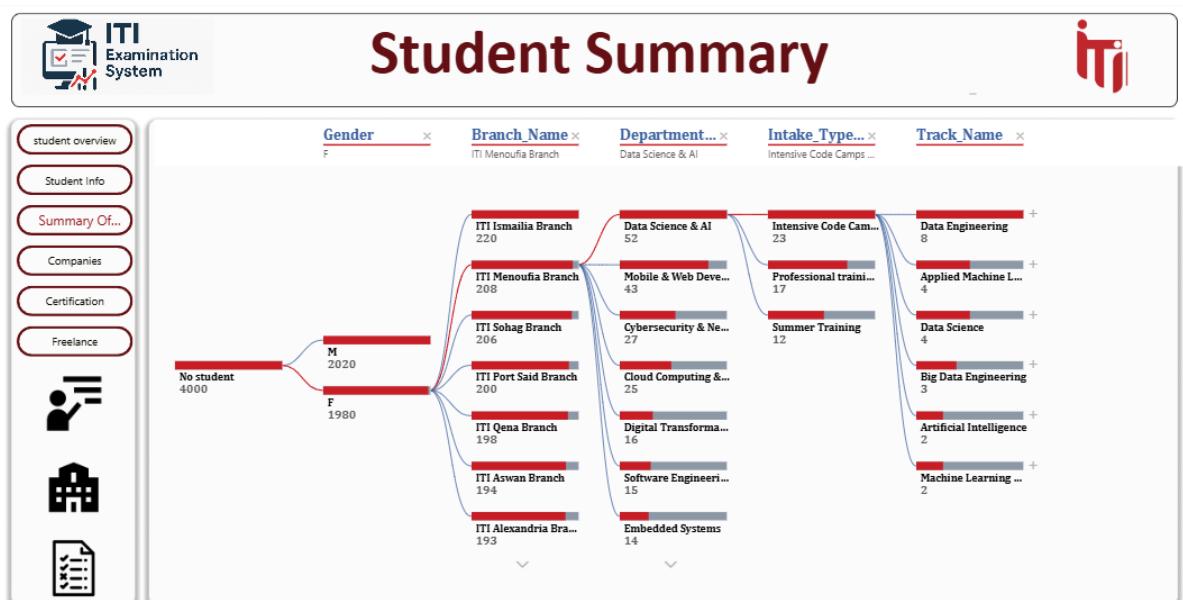
Student Overview 2

Displays the number of students by gender, track and intake.



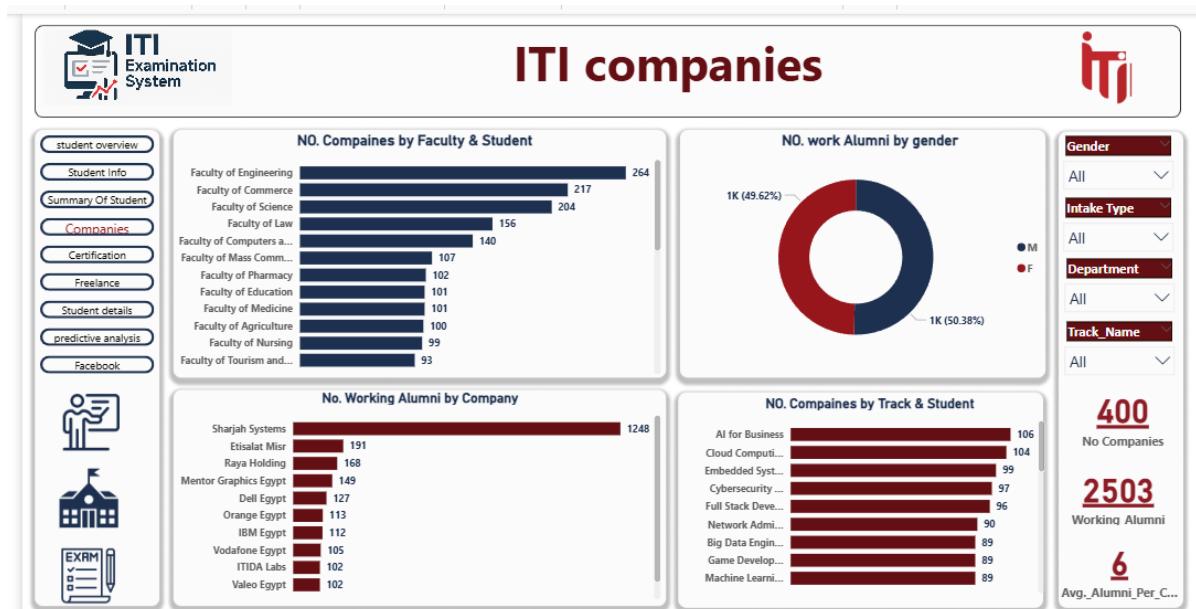
Student Overview 3

represent the relationship between students, their branches, departments, intakes, and tracks, helping to analyze academic distribution and learning paths.



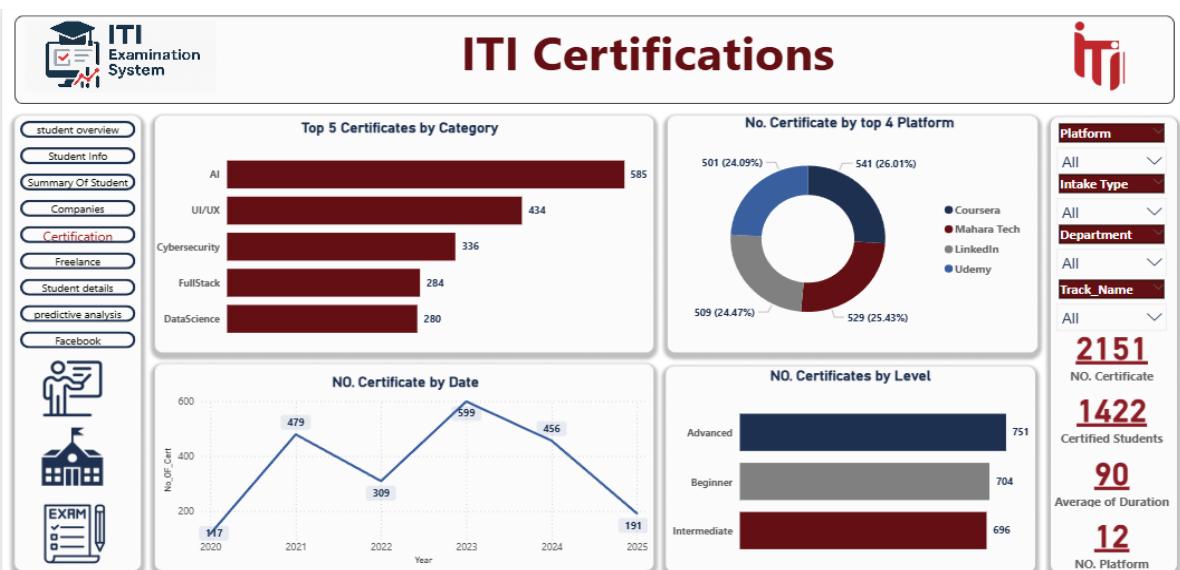
Company Dashboard

Measures the engagement level of alumni, such as the number of those hired, No. companies by faculty & Students.



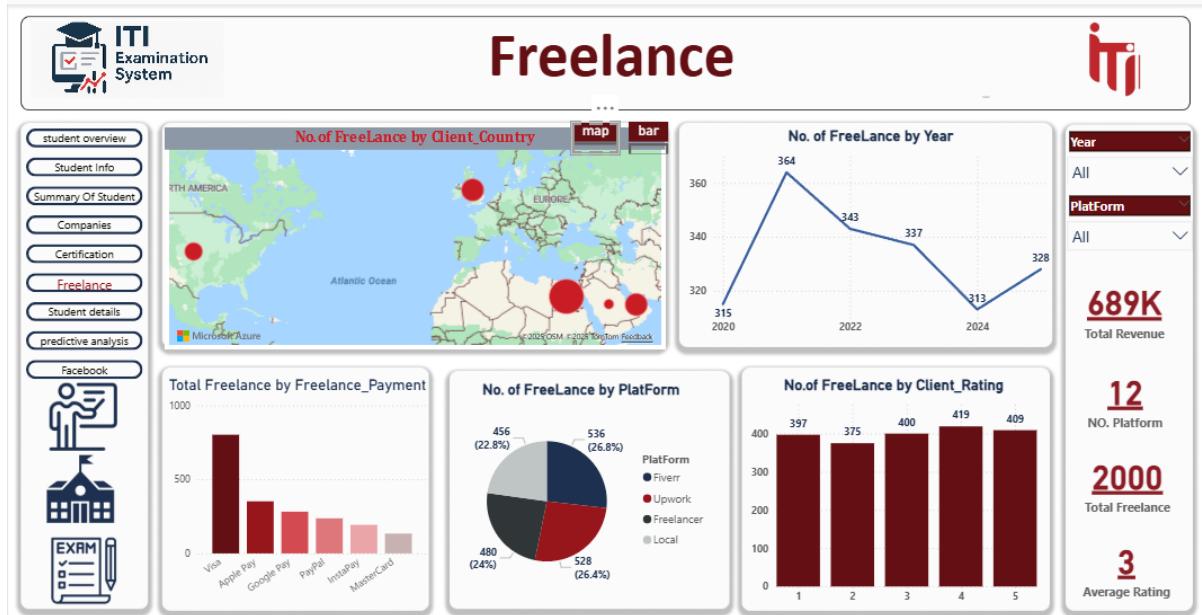
Certificate Dashboard

Displays the number of students who completed online Certifications and the names of these Certifications.



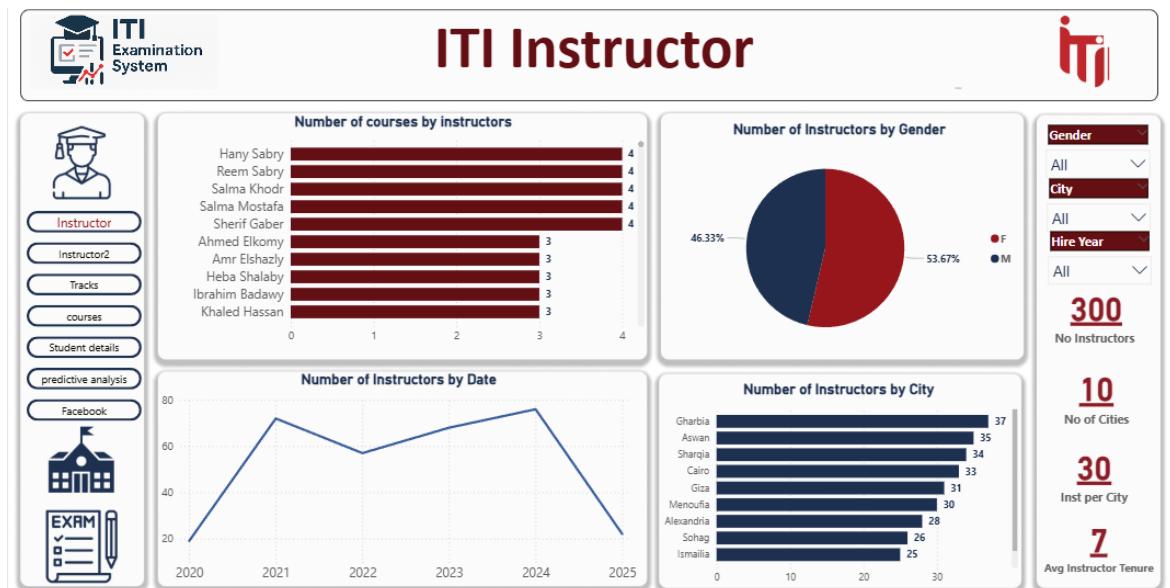
Freelance Dashboard

Tracks the number of students who complete freelancing jobs.

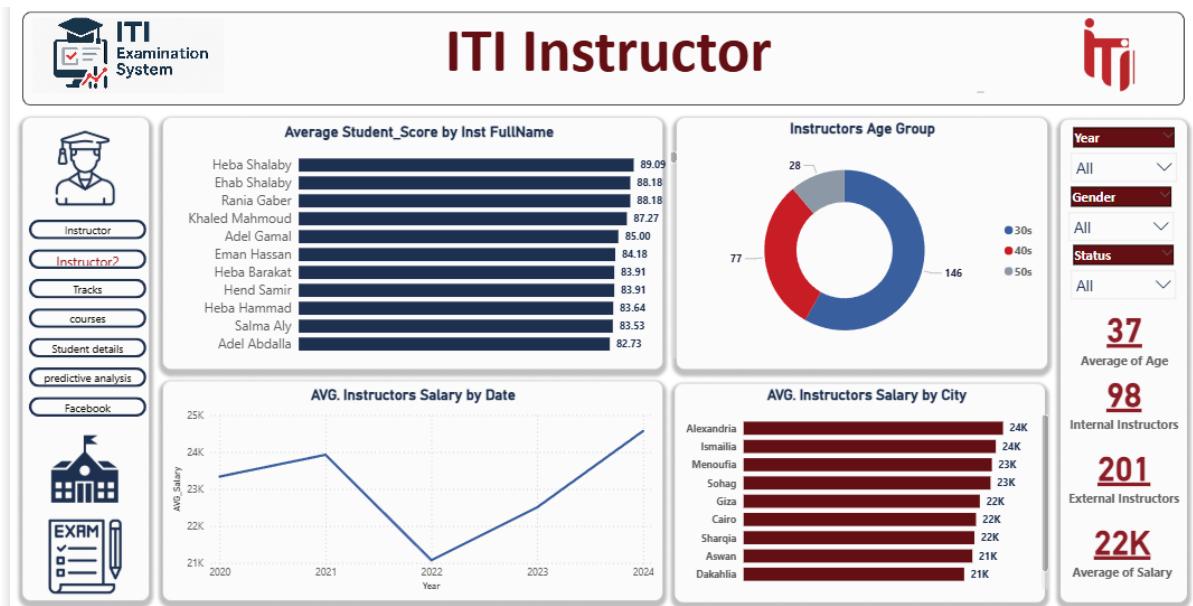


Instructor Dashboard 1

Evaluates Instructor performance based on student score, salary,etc.

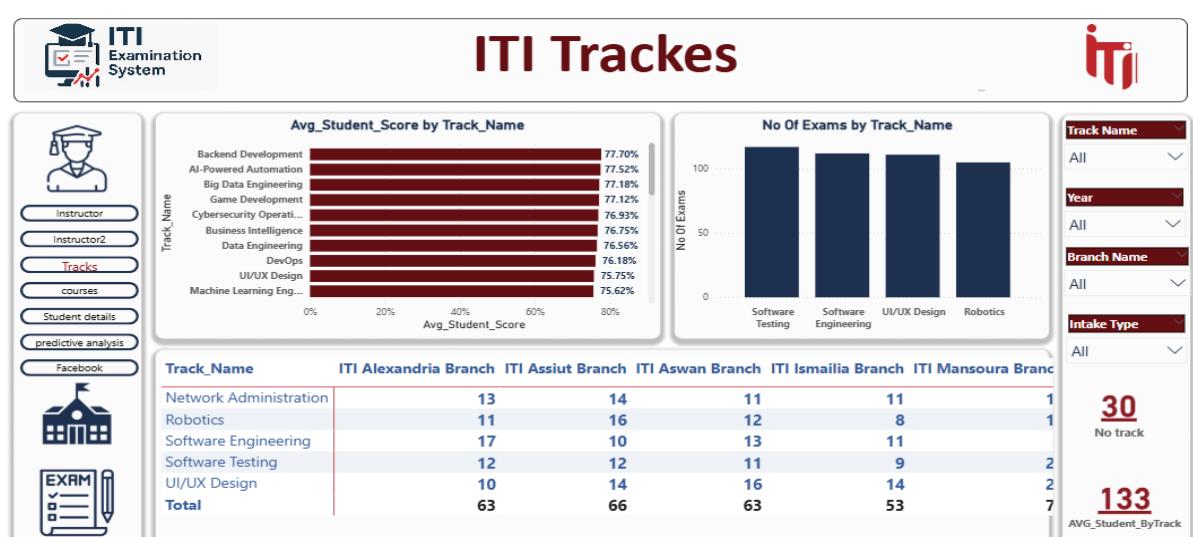


Instructor Dashboard 2



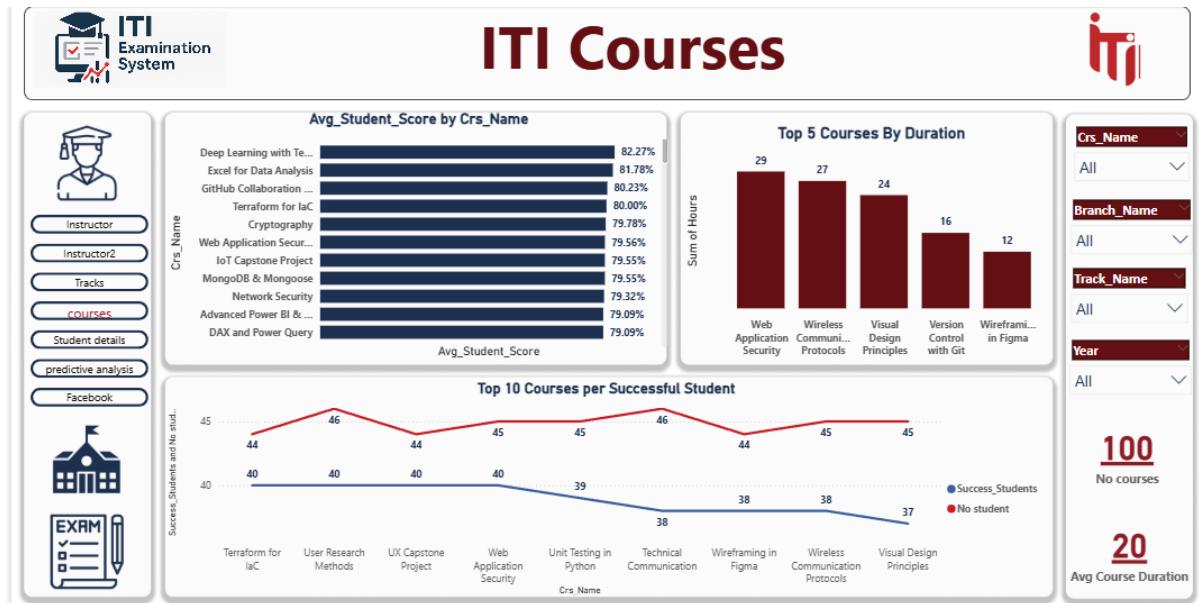
Tracks Dashboard

A dashboard was designed to analyze and compare different tracks, showing student distribution, performance levels, and progress across each track.



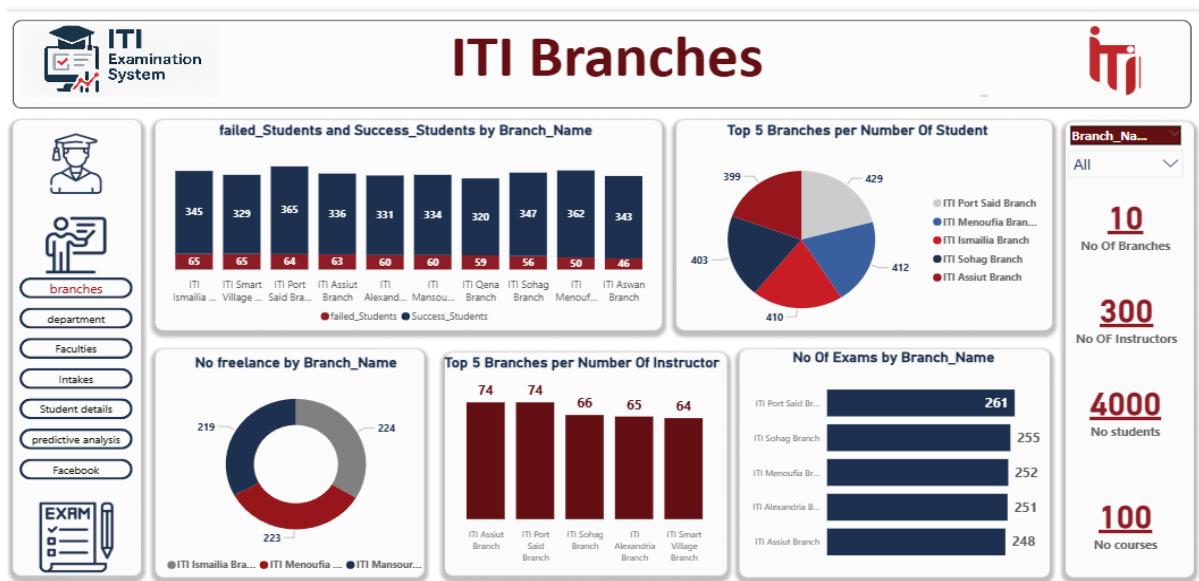
Course Dashboard

A dashboard was developed to display insights for each Course, showing average student score, performance trends, and progress comparisons across different courses.



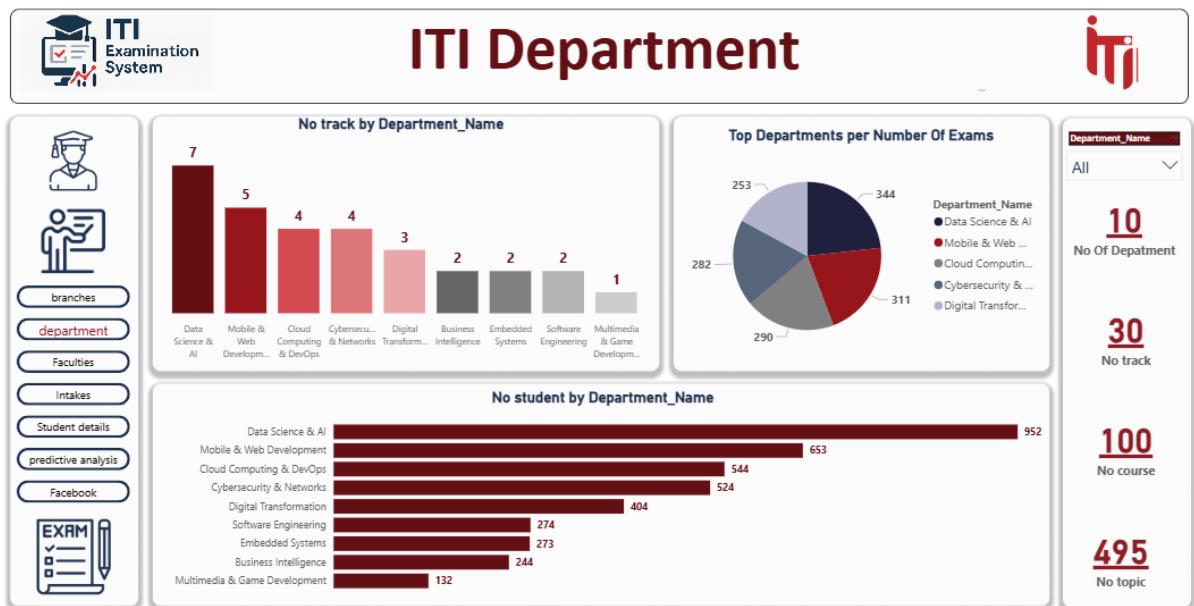
Branches Dashboard

A dashboard was created to analyze the performance and distribution of students across different branches, highlighting academic results and enrollment rates.



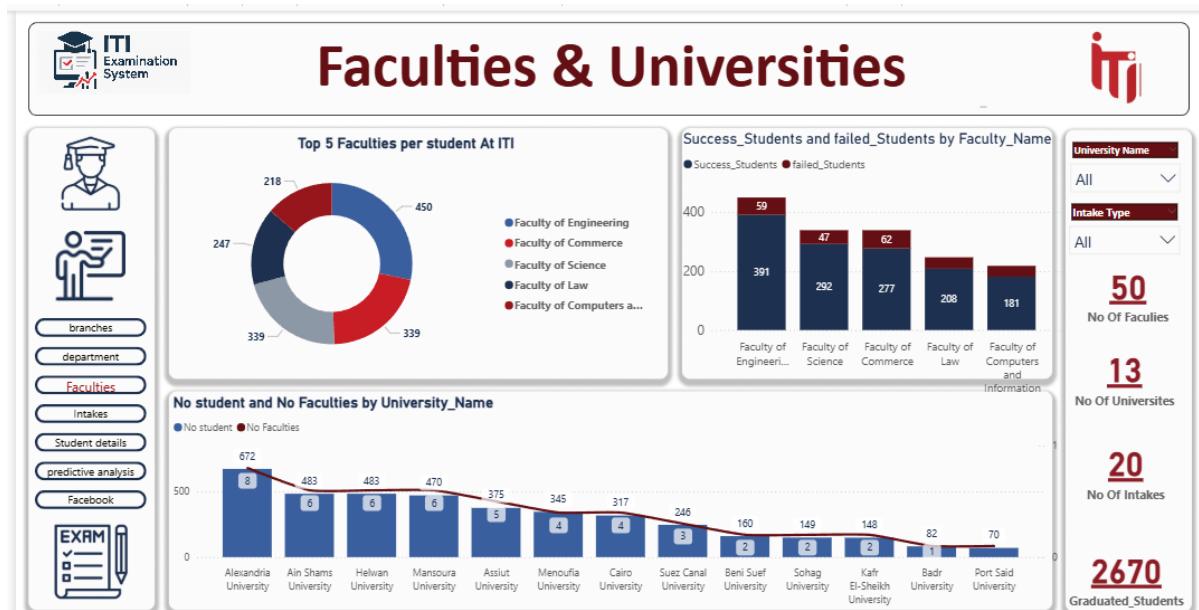
Department Dashboard

Displays the number of departments, the top exams, and number of tracks in each department.



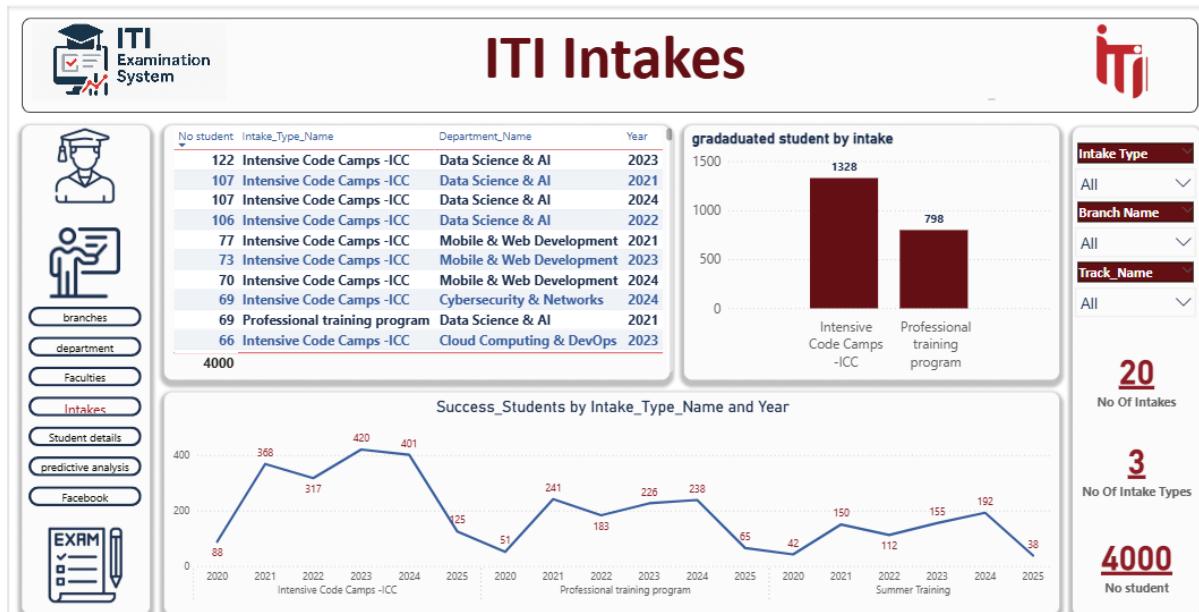
Faculties & University Dashboard

A dashboard was designed to provide an overview of the faculties and university performance, showcasing student distribution, academic results.



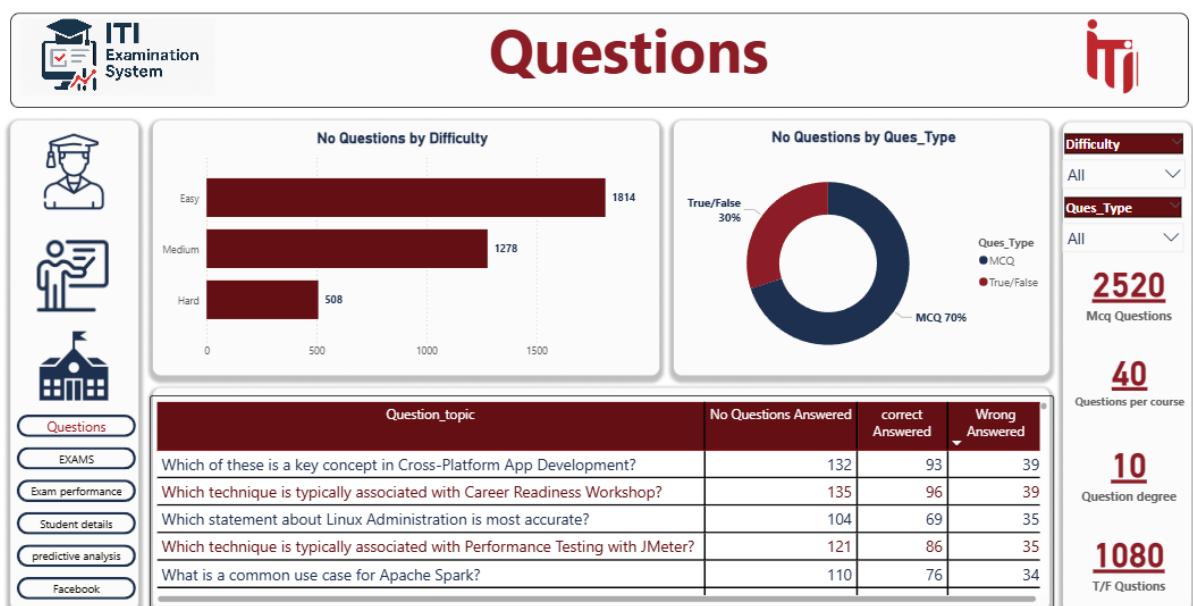
Intake Dashboard

A dashboard was developed to display insights for each intake, showing student enrollment, performance trends, and progress comparisons across different tracks.



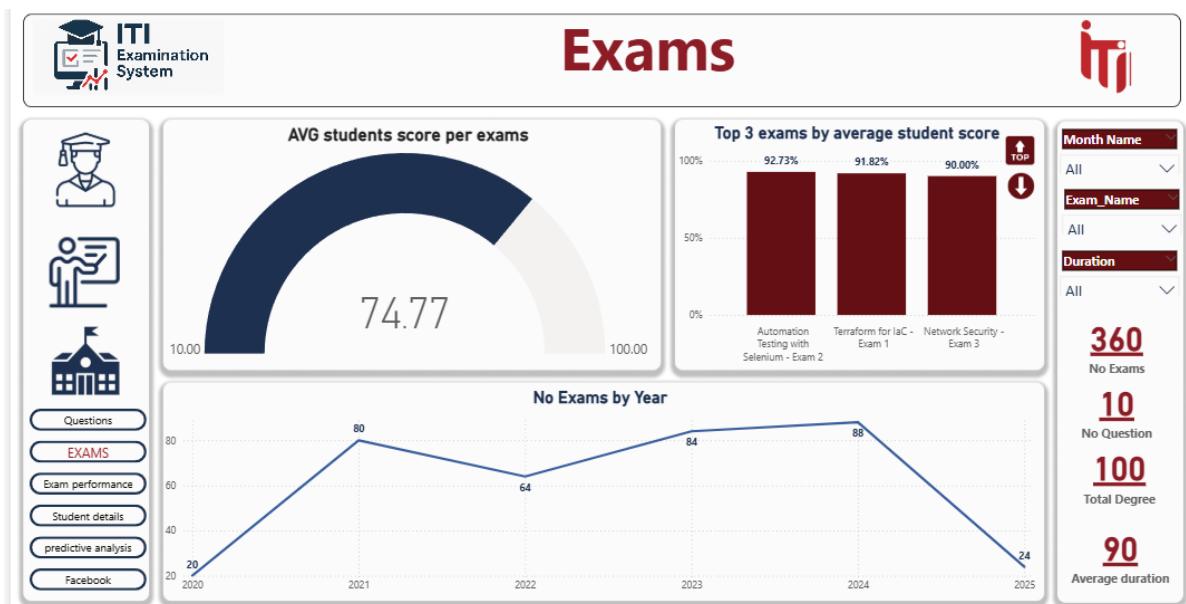
Questions Dashboard

A dashboard was developed to analyze exam questions, showing their difficulty levels, correct answer.



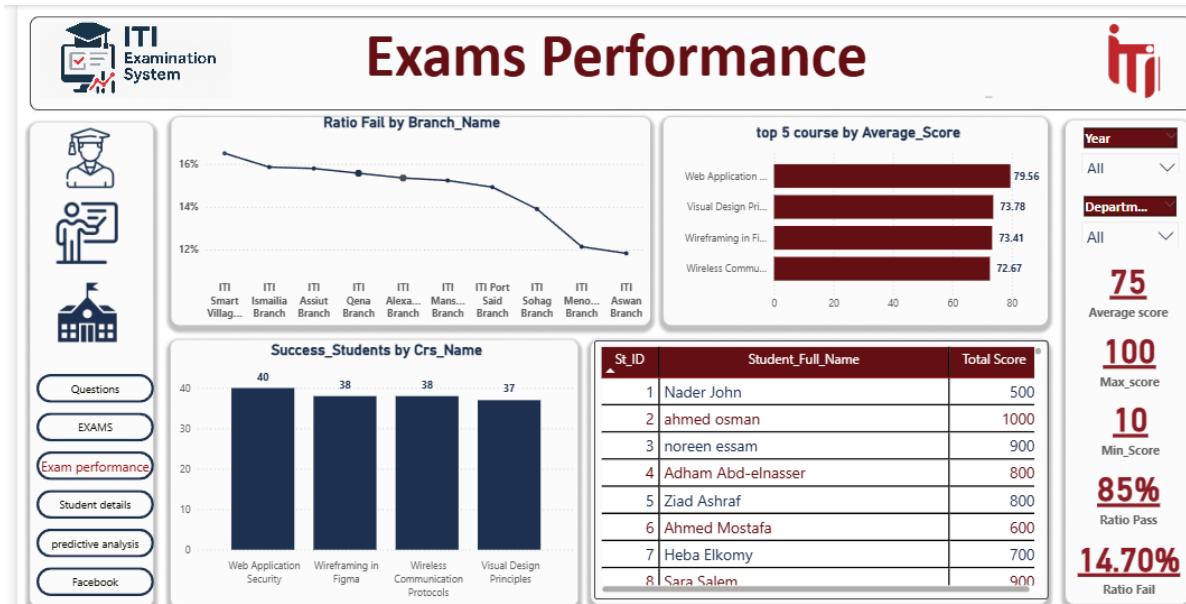
Exam Dashboard 1

Created to monitor exam performance, displaying student results, average scores.



Exam Dashboard 2

A second exam dashboard was developed to provide deeper insights into exam analytics.



Student Details

This dashboard presents detailed information about ITI students, including their names, intake types, departments, branches, tracks, and profile links.



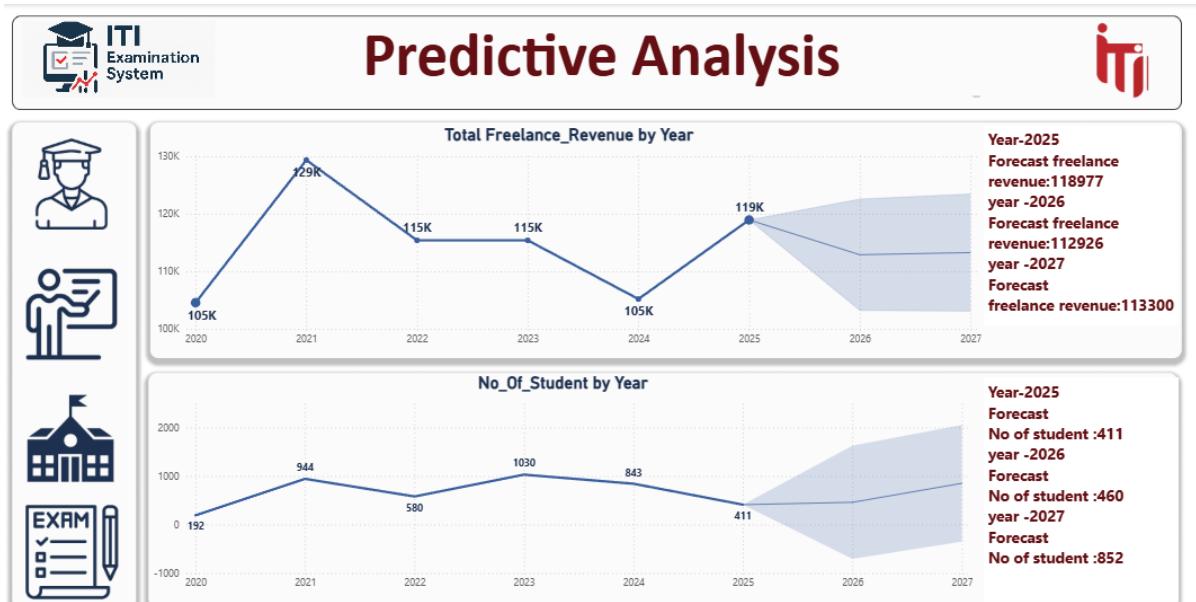
Students details



St_ID	Student_Full_Name	Intake_Type_Name	Department_Name	Branch_Name	Track_Name	Url
1	Nader John	Intensive Code Camps -ICC	Business Intelligence	ITI Smart Village Branch	Data Analysis	https://www.facebook.com/nader.john.3
2	ahmed osman	Intensive Code Camps -ICC	Business Intelligence	ITI Ismailia Branch	Data Analysis	https://www.facebook.com/ahmd.abrah
3	noreen essam	Intensive Code Camps -ICC	Software Engineering	ITI Qena Branch	Software Testing	https://www.facebook.com/noreen.essar
4	Adham Abd-elnasser	Intensive Code Camps -ICC	Cybersecurity & Networks	ITI Menoufia Branch	Cybersecurity Operations	https://www.facebook.com/adham.abd-i
5	Ziad Ashraf	Intensive Code Camps -ICC	Mobile & Web Development	ITI Menoufia Branch	Backend Development	https://www.facebook.com/Ziad.Ashraf.5
6	Ahmed Mostafa	Professional training program	Data Science & AI	ITI Alexandria Branch	Data Engineering	https://facebook.com/Ahmed.Mostafa.6
7	Heba Elkomy	Intensive Code Camps -ICC	Mobile & Web Development	ITI Ismailia Branch	Backend Development	https://facebook.com/Heba.Elkomy.7
8	Sara Salem	Summer Training	Business Intelligence	ITI Mansoura Branch	Data Analysis	https://facebook.com/Sara.Salem.8
9	Salma Mohamed	Intensive Code Camps -ICC	Mobile & Web Development	ITI Assiut Branch	Full Stack Development	https://facebook.com/Salma.Mohamed.9
10	Adel Hassan	Intensive Code Camps -ICC	Multimedia & Game Development	ITI Assiut Branch	Game Development	https://facebook.com/Adel.Hassan.10
11	Reem Gaber	Intensive Code Camps -ICC	Cloud Computing & DevOps	ITI Mansoura Branch	Cloud Computing	https://facebook.com/Reem.Gaber.11
12	Khaled Khodr	Intensive Code Camps -ICC	Cloud Computing & DevOps	ITI Mansoura Branch	Cloud DevOps Engineering	https://facebook.com/Khaled.Khodr.12
13	Tamer Elshazly	Intensive Code Camps -ICC	Digital Transformation	ITI Smart Village Branch	Digital Marketing	https://facebook.com/Tamer.Elshazly.13
14	Walid Elgohary	Summer Training	Digital Transformation	ITI Ismailia Branch	Digital Marketing	https://facebook.com/Walid.Elgohary.14
15	Sami Tawfiq	Intensive Code Camps -ICC	Cybersecurity & Networks	ITI Qena Branch	Cybersecurity	https://facebook.com/Sami.Tawfiq.15
16	Mohamed Abdalla	Intensive Code Camps -ICC	Cloud Computing & DevOps	ITI Ismailia Branch	Cloud DevOps Engineering	https://facebook.com/Mohamed.Abdall
17	Sawsan Elgohary	Professional training program	Data Science & AI	ITI Qena Branch	Data Science	https://facebook.com/Sawsan.Elgohary.1
18	Karim Fahmy	Intensive Code Camps -ICC	Data Science & AI	ITI Mansoura Branch	Big Data Engineering	https://facebook.com/Karim.Fahmy.18
19	Rana Yacoub	Summer Training	Data Science & AI	ITI Aswan Branch	Data Engineering	https://facebook.com/Rana.Yacoub.19
20	Sami Elkomy	Professional training program	Data Science & AI	ITI Menoufia Branch	Machine Learning Engineering	https://facebook.com/Sami.Elkomy.20

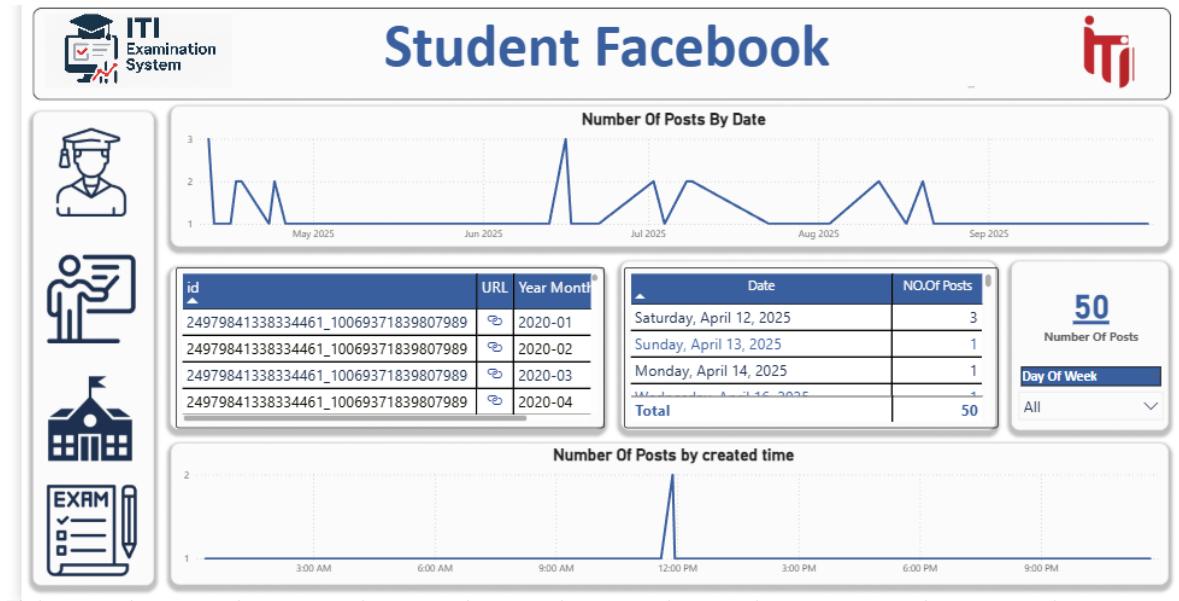
Predictive Analysis

Predict the total freelance revenue and number of students to forecast future trends in participation and revenue growth.



Student Social Media

Retrieve certain information from the student's Facebook profile.

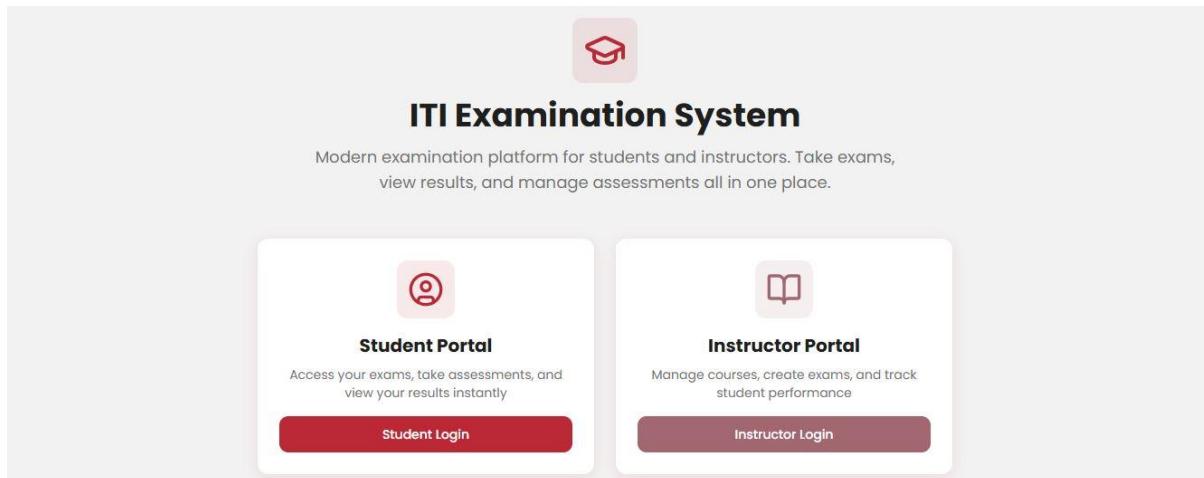


Website

The ITI Examination System is a modern and efficient platform designed to simplify online assessments for both students and instructors. It provides an all-in-one environment where students can take exams, access their results instantly, and track their academic progress. Instructors can effortlessly manage courses, create exams, and monitor student performance through an intuitive dashboard. With its clean interface and seamless functionality, the ITI Examination System ensures a smooth and organized examination process, promoting transparency, accuracy, and convenience for all users.

Main Page

A modern landing page that provides quick access to both the Student and Instructor portals for managing exams and results.



Students Results

Displays detailed exam results for each student, including their scores, exam titles, and completion dates.

A screenshot of the ITI Examination System's Instructor Portal. The sidebar on the left is red and contains navigation links: "Dashboard", "Exams", "Students", "Courses", and "Logout". The main area has a white header with the text "Welcome back, Ahmed ADEL ! Manage exams and students" and a user profile icon. Below the header, a sub-header says "[Student Results](#)". Underneath is a section titled "All Exam Results" with a search bar. A table lists student results with columns: Student, Email, Exam, Score, and Date Taken. The table shows four entries:

Manage Courses

Allows instructors to view, create, edit, and organize courses efficiently within the examination system.

The screenshot shows the ITI Exam Instructor Portal. The left sidebar has a red background with the title "ITI Exam Instructor Portal" and navigation links: Dashboard, Exams, Students, Courses, and Logout. The main content area has a white background. At the top, it says "Welcome back, Ahmed ADEL!" and "Manage exams and students". On the right, there are notifications and user info. Below that, a red button says "+ Add Course". The main section is titled "Manage Courses" with the subtitle "View and manage your course catalog". It has a heading "All Courses" and a sub-heading "Manage your courses and their details". There is a search bar with placeholder "Search courses...". A table lists two courses: "database" created on "01/01/2025" and "python" created on "01/01/2025". Each row has "Actions" buttons for edit and delete.

Instructor Login

Secure access point for instructors to sign in and manage their courses, exams, and students.

The screenshot shows the "Instructor Login" screen. It features a logo of a graduation cap at the top. The title "Instructor Login" is centered, with the subtitle "Access your dashboard to manage exams" below it. There are input fields for "Email" (containing "Ahmedadel@gmail.com") and "Password" (containing "*****"). A "Login" button is at the bottom. Below the form, a link says "← Back to home".

The screenshot shows the ITI Exam Instructor Dashboard. The left sidebar has a red background with the title "ITI Exam Instructor Portal" and navigation links: Dashboard, Exams, Students, Courses, and Logout. The main content area has a white background. At the top, it says "Welcome back, Ahmed ADEL!" and "Manage exams and students". On the right, there are notifications and user info. Below that, a red button says "+ Add Course". The main section has three cards: "Total Courses 1" with a pencil icon, "Total Exams 2" with a document icon, and "Total Students 5" with a person icon. Below these are three "Quick Actions": "Create New Exam" (with a plus icon), "Manage Courses" (with a book icon), and "View Results" (with a bar chart icon). Each action has a "Get Started" button.

Create Exam

Enables instructors to design and configure new exams by adding questions, setting durations, and assigning them to specific courses.

The screenshot shows the 'Create Exam' interface. On the left, a sidebar menu lists 'Dashboard', 'Exams', 'Students', and 'Courses'. The main area displays a 'Welcome back' message and 'Quick Action' buttons. Form fields include 'Exam Title' (e.g., Midterm Exam - Mathematics), 'Duration (minutes)' (60), 'Exam Date & Time' (11/01/2025 04:54 PM), 'Track' (power BI), 'Course' (database), and 'Number of Questions' (5). A note at the bottom says '5 questions available'.

Exams Page

Displays a complete list of all exams created by the instructor, with options to edit, delete, or assign them to students.

The screenshot shows the 'Exams Page' interface. The sidebar menu is identical to the previous screen. The main area lists 'Total Courses' (1) and shows a 'Create New Exam' button. Below it is a table with columns: Exam Title, Duration, Exam Date & Time, Track, Course, and Number of Questions. A 'Get Started' button is located at the bottom right of the table.

Student Results

Provides a clear overview of each student's performance, showing their scores, exam titles, and submission times.

The screenshot shows the 'Results' page of the Student Portal. The sidebar menu includes 'Dashboard', 'Exams', and 'Results'. The main area features a summary section with 'Total Exams' (3), 'Average Score' (70%), and 'Average Grade' (C+). Below this is a table titled 'Exam Results' with columns: Exam Title, Course, Date, Score, and Grade. The table contains three rows corresponding to the exams listed in the summary.

Exam Title	Course	Date	Score	Grade
Power BI	Power BI	01/11/2025	80.0%	B+
Python_1	python	01/11/2025	50.0%	F
Database_1	database	28/10/2025	80.0%	B+

Start Exam

Allows students to begin their online assessments through a user-friendly and timed examination interface.

The screenshot shows a student interface for an online exam. At the top, it says "Python_1" and "10 Questions". On the right, there is a timer showing "29:46" and a "Submit" button. Below this, two questions are listed in boxes:

1 Who developed Python Programming Language?

- Wick van Rossum
- Rasmus Lerdorf
- Guido van Rossum
- Niene Stom

2 Which type of Programming does Python support?

- object-oriented programming
- structured programming

Select Track

Lets users choose their training or specialization track before proceeding to related courses and assessments.

The screenshot shows a student portal dashboard. On the left, a sidebar has "ITI Exam Student Portal" at the top, followed by "Dashboard", "Exams", and "Results". At the bottom is a "Logout" link. The main area has a dark header with "Welcome back, ziad nasser!" and "Track your exams and results". It shows stats: "Total Exams 0", "Completed Exams 0", "Average Score 0%", and "Pending Exams 0". A central message says "Available Exams" and "No exams available at the moment". A "Select Your Track" modal is open in the center, with a dropdown menu labeled "Select a track". In the bottom right corner, there is a "Welcome back!" message with "Logged in as ziad nasser".