Examination System

A project submitted in partial fulfillment of the requirements for the graduation project at ITI.

“Power BI Developer” Track,

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Project Team

Abdellatif Nagy Abdellatif

Andrew Ashraf Kamal

Fathi Elsayed Fathi

Sherif Rizk Ismail Abdel

Alaa Ahmed Eraky

Under Supervision of

ENG. Rami Nagi

Table of Contents

Abstract **3**
Chapter 1: Project Planning **4**
1.1 Problem Definition **4**
1.2 Project Features **5**
1.3 Literature Review **6**
1.4 Project Objectives **7**
1.5 System Development Requirements **8**
1.6 Requirements **10**
1.7 SDLC Model **12**
Chapter 2: Analysis **13**
2.1 ERD **13**
Chapter 3: Implementations and Testing ..... Error! Bookmark not defined.
3.1 Mapping **14**
3.2 Schema ..... Error! Bookmark not defined.
3.3 Database Dictionary ..... Error! Bookmark not defined.
3.4 Tables ..... Error! Bookmark not defined.
3.5 Stored Procedures **43**
3.6 SSRS Reports……44
3.7 Dashboards……..
Chapter 4: Implementation **71**
Chapter 5: Testing ..... Error! Bookmark not defined.

Conclusion **14**

Abstract

The Examination System for ITI is designed to manage student enrollments in multiple intakes across various governorates. The system aims to facilitate the learning process by providing students with courses, study materials, and instructors. Students are evaluated through exams and receive grades for their performance. The system also maintains a database of student records, including their exam results and course progress. Additionally, the system tracks whether students have secured employment or engaged in freelancing opportunities. The primary goal of the project is to assess the organization's ability to achieve its objectives, which include producing skilled graduates, facilitating freelancing opportunities, and monitoring the progress of students who have not met these criteria.

Chapter 1: Project Planning

1.1 Problem Definition

The Examination System for ITI faces several challenges that need to be addressed for the successful implementation and achievement of its objectives. The following problem areas have been identified:

- Enrollment Management: Managing student enrollments across multiple intakes and governorates can be complex and time-consuming. The system needs to efficiently handle the enrollment process, ensuring accurate record-keeping and seamless coordination between students and the ITI administration.
- Course and Material Availability: Providing relevant courses and study materials to students is crucial for their learning experience. Ensuring that the system offers a comprehensive range of courses and up-to-date study materials tailored to different disciplines can be a challenge. It requires continuous monitoring, updating, and collaboration with instructors to meet the diverse educational needs of the students.
- Instructor Support and Coordination: Effective coordination and support from instructors are essential for student success. The system should facilitate communication between instructors and students, ensuring timely responses to queries, clarifications, and guidance throughout the learning process.
- Examination and Grading Process: Designing a fair and efficient examination and grading system is vital to accurately assess student performance. The system needs to handle exam scheduling, secure exam delivery, and automate grading processes, while maintaining the integrity and confidentiality of exam materials and results.
- Database Management and Security: Managing a comprehensive database of student records, including exam

results and course progress, requires robust data management practices. The system must ensure secure storage, reliable backup mechanisms, data accuracy, and privacy compliance to protect sensitive student information.

- Employment and Freelancing Tracking: Tracking student employment and freelancing opportunities is essential to evaluate the effectiveness of ITI in providing market-relevant skills. The system needs to collect and analyze data on student employment status, freelancing engagements, and success rates to measure the organization's impact and identify areas for improvement.
- Progress Monitoring and Intervention: Identifying students who have not met the desired criteria, such as securing employment or engaging in freelancing activities, is crucial for providing targeted support and interventions. The system should enable proactive monitoring of student progress, allowing ITI to offer additional resources, mentorship, or career guidance to help students overcome challenges and achieve their goals.
- Addressing these problem areas will contribute to the overall effectiveness and success of the Examination System for ITI. By streamlining processes, enhancing support mechanisms, and ensuring data accuracy and security, the system can provide a robust platform for student learning, assessment, and career advancement.

1.2 Project Features

- Intake Management: The system manages student enrollments in different intakes across multiple governorates.
- Course and Material Provision: Students have access to courses and study materials relevant to their chosen disciplines.
- Instructor Support: Instructors provide explanations and guidance to students throughout their learning journey.
- Examination and Grading: Students take exams and receive grades based on their performance in the courses.
- Database Management: The system maintains a comprehensive database of student records, including exam results and course progress.
- Employment Tracking: The system tracks whether students have secured job opportunities after completing their studies.

- Freelancing Assessment: The system evaluates whether students have engaged in freelancing activities.
- Progress Monitoring: The system keeps track of students who have not met the desired criteria and provides insights for improvement.

1.3 Literature Review

- To gain insights into the Examination System for ITI and its related challenges, we conducted a literature review focusing on similar educational systems, enrollment management, online learning platforms, and student assessment methods. The following key findings emerged from the review:
- Enrollment Management Systems: Various studies have explored the implementation and effectiveness of enrollment management systems in educational institutions. These systems automate the enrollment process, improve data accuracy, and enhance communication between students and administrators. They provide features such as online application submission, document verification, and real-time enrollment status updates. Implementing an efficient enrollment management system can lead to improved student satisfaction, streamlined administrative processes, and enhanced data management.
- Online Learning Platforms: Online learning platforms have become increasingly popular in educational settings. Research has highlighted the benefits of these platforms, including flexibility, accessibility, and personalized learning experiences. Effective online learning platforms offer a variety of courses, interactive learning materials, and communication tools to facilitate instructor-student and peer-to-peer interactions. The literature emphasizes the importance of user-friendly interfaces, engagement features, and comprehensive content management systems in online learning platforms.
- Student Assessment Methods: The literature provides insights into diverse student assessment methods, including traditional exams, project-based assessments, and continuous evaluation. Studies emphasize the need for valid, reliable, and fair assessment

methods that align with the learning objectives and outcomes. Technology-enabled assessment tools, such as online quizzes, automated grading systems, and plagiarism detection software, have been explored to enhance efficiency and accuracy in student assessment. The literature also highlights the importance of providing timely feedback to students to support their learning and improvement.

- Employment and Career Development: Several studies focus on the role of educational institutions in preparing students for the job market and fostering career development. They emphasize the importance of integrating industry-relevant skills into the curriculum, facilitating internships and industry connections, and providing career counseling services. Tracking student employment outcomes and measuring the impact of education on career success is crucial to assessing the effectiveness of educational programs.
- Data Management and Security: As educational institutions handle sensitive student information, ensuring proper data management and security measures is paramount. Literature emphasizes the need for robust data storage, backup mechanisms, and compliance with data protection regulations. Implementing secure authentication protocols, access controls, and encryption techniques are essential to safeguard student data and maintain privacy.

1.4 Project Objectives

The Examination System for ITI aims to measure the organization's effectiveness in producing highly skilled graduates who are successful in securing employment or pursuing freelancing opportunities. Additionally, the system enables the tracking of students who have not yet achieved these goals, allowing the organization to provide support and interventions as needed.

1.5 System Development Requirements

1. User Management:
    - User roles: Define and manage user roles such as administrators, instructors, and students with appropriate access levels and permissions.
    - User authentication: Implement secure authentication mechanisms such as username/password authentication or integration with single sign-on (SSO) solutions.
2. Enrollment Management:
    - Intake management: Allow administrators to create and manage intakes across different governorates.
    - Online application: Provide an intuitive interface for students to submit their applications online, including personal information, chosen disciplines, and desired intakes.
    - Application verification: Enable administrators to verify and process student applications, ensuring accuracy and completeness of required documents.
3. Course and Material Management:
    - Course catalog: Create and maintain a comprehensive catalog of courses, including course descriptions, prerequisites, and instructors.
    - Study materials: Allow instructors to upload and manage study materials, such as lecture slides, videos, and additional resources, for each course.
    - Content organization: Provide an organized and searchable repository for students to access course materials easily.
4. Instructor Support and Communication:
    - Instructor profiles: Allow instructors to create profiles with their expertise, qualifications, and contact information.
    - Communication tools: Implement messaging or discussion forums to facilitate communication between

instructors and students, enabling timely responses to queries and clarifications.

5. Examination and Grading System:
    - Exam scheduling: Enable administrators to schedule exams, assign exam venues, and allocate invigilators.
    - Secure exam delivery: Implement a secure online exam platform or provide guidelines for offline exams, ensuring integrity and confidentiality of exam materials.
    - Automated grading: Develop automated grading mechanisms for objective-type questions or provide an interface for instructors to input and manage grades for subjective assessments.
6. Database Management and Security:
    - Student records: Maintain a centralized database to store student records, including personal information, enrollment status, exam results, and course progress.
    - Data backup and recovery: Implement regular data backup procedures to prevent data loss and ensure quick recovery in case of system failures.
    - Data privacy and security: Employ robust security measures to protect student data, including encryption, access controls, and compliance with data protection regulations.
7. Employment and Freelancing Tracking:
    - Employment status tracking: Develop a mechanism to track and record student employment status after graduation, including job placements and job types.
    - Freelancing engagement tracking: Implement a system to monitor and record students' involvement in freelancing activities, capturing project details and client feedback.
    - Reporting and analytics: Generate reports and analytics to evaluate the success of the education program in terms of employment outcomes and freelancing opportunities.
8. Dashboard and Analytics:
    - Dashboard creation: Design and develop intuitive dashboards to visualize key performance indicators (KPIs)

such as student enrollment, exam results, employment rates, and freelancing engagements.

- Real-time data monitoring: Provide real-time updates and notifications on important events, deadlines, and progress through the dashboard.
- Data visualization: Utilize charts, graphs, and interactive elements to present data in a visually appealing and easily understandable manner

1.6 Requirements

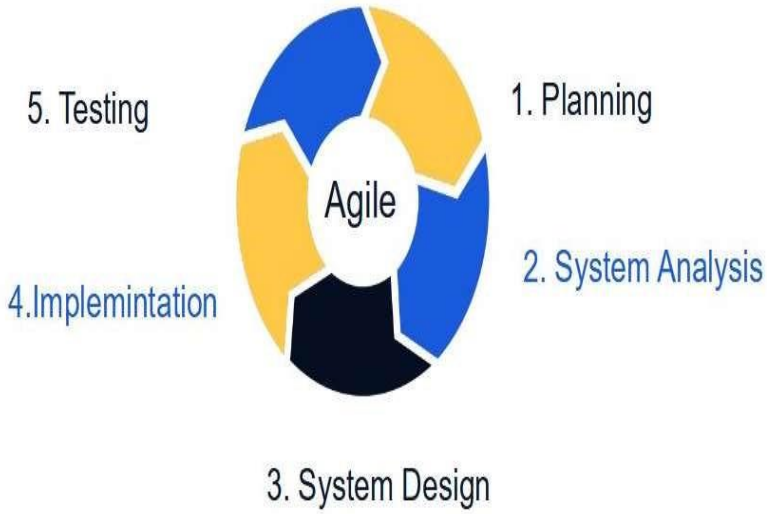
The System should provide these features:

Functional Requirements	Nonfunctional Requirements
• Registration: Allow users to register and create accounts with appropriate user roles. • Course and MaterialManagement: a. Course Catalog: Maintain a catalog of courses with relevant details such as course descriptions, prerequisites, and instructors. b. Study Materials: Enable instructors to upload and manage study materials for each course, including lecture slides, videos, and additional resources. c. Content Organization: Implement a structured system for organizing and categorizing course materials. • Examination and Grading System: a. Exam Scheduling: Enable administrators to schedule exams, assign venues, and allocate invigilators. b. Secure Exam Delivery: Implement a secure online exam	The system should have an intuitive user interface to facilitate easy navigation and usage. ○ It should provide clear instructions and guidelines for users to interact with the system effectively. • Performance: ○ The system should be responsive and provide quick response times, ensuring minimal delays during user interactions. ○ It should be able to handle concurrent user activity without significant performance degradation. • Security: ○ The system should employ robust security measures to protect user data and prevent unauthorized access. ○ It should ensure the confidentiality, integrity, and availability of sensitive information. • Scalability: ○ The system should be designed to accommodate a growing number of users, courses, and data without compromising performance.

platform or provide guidelines for offline exams. c. Grading Mechanism: Develop an automated grading system for objective-type questions or provide an interface for instructors to input and manage grades for subjective assessments. • Database Management and Security: a. Student Records: Maintain a centralized database for storing student records, including personal information, enrollment status, exam results, and course progress. b. Backup and Recovery: Implement regular data backup procedures and mechanisms for quick recovery in case of system failures. c. Data Privacy and Security: Ensure data encryption, access controls, and compliance with data protection regulations. • Employment and Freelancing Tracking: a. Employment Status Tracking: Develop a system to track and record student employment status after graduation. b. Freelancing Engagement Tracking: Implement a mechanism to monitor and record students' involvement in freelancing activities. c. Reporting and Analytics:	○ It should allow for easy scalability and expansion as the organization's needs evolve. • Reliability: ○ The system should operate reliably, minimizing downtime and ensuring the availability of services. ○ It should have mechanisms in place to handle and recover from system failures or disruptions. • Compatibility: ○ The system should be compatible with different web browsers, operating systems, and devices to support a wide range of users. ○ It should adhere to web standards and accessibility guidelines to ensure inclusivity. • Data Integrity: ○ The system should maintain data accuracy and consistency throughout all operations and interactions. ○ It should have proper data validation mechanisms to prevent errors and inconsistencies in the database. • Reporting and Analytics: ○ The system should generate comprehensive and meaningful reports and analytics to support decision-making processes. ○ It should provide visualizations and data representations that are easy to understand and interpret.

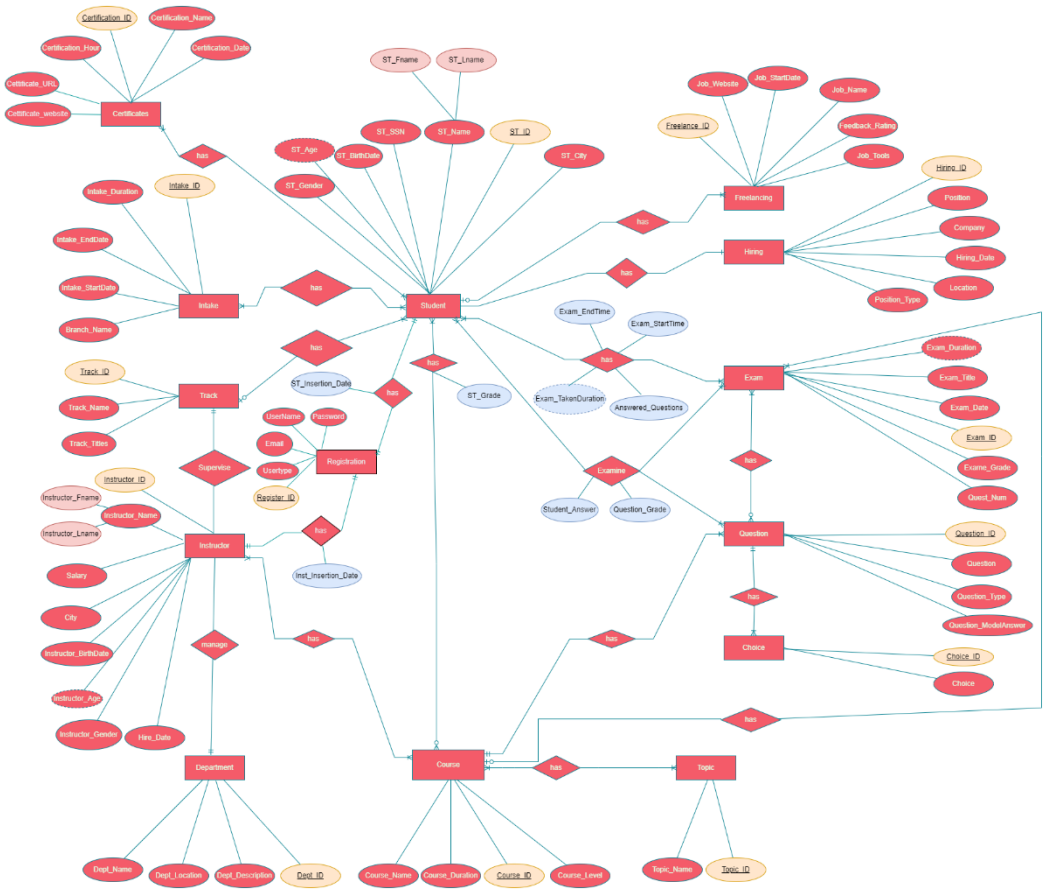
Generate reports and analytics to evaluate employment outcomes and freelancing opportunities. •	

1.13 SDLC Model



Chapter 2: Analysis

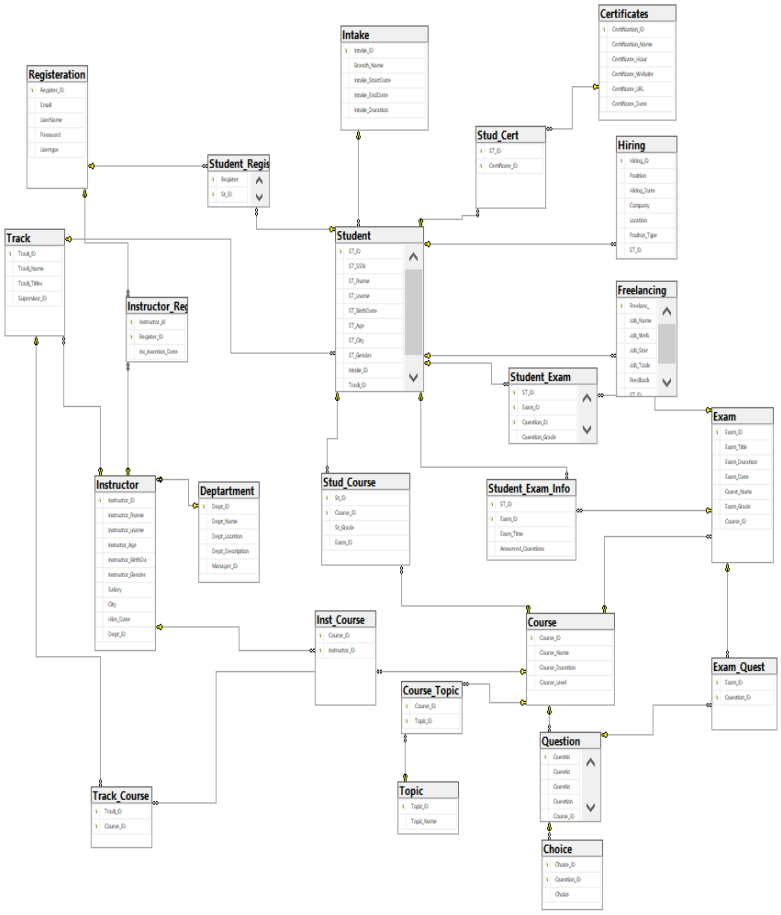
2.1 ERD



Chapter 3: Design

3.1 Mapping

3.2 Schema


Certificates
Certification_ID
Certification_Name
Certificate_Hour
Certificate_Website
Certificate_URL
Certificate_Date
Intake
Intake_ID
Branch_Name
Intake_StartDate
Intake_EndDate
Intake_Duration
Registeration
Register_ID
Email
UserName
Password
User_type
Stud_Cert
ST_ID
Certificate_ID
Hiring
Hiring_ID
Position
Hiring_Date
Company
Location
Position_Type
ST_ID
Student_Regis
Register
St_ID
Track
Track_ID
Track_Name
Track_Titles
Supervisor_ID
Student
ST_ID
ST_SSN
ST_Name
ST_Lname
ST_BirthDate
ST_Age
ST_City
ST_Gender
Intake_ID
Track_ID
Instructor_Reg
Instructor_ID
Register_ID
Ins_Insertion_Date
Freelancing
Freelance_
Job_Name
Job_Web
Job_Site
Job_Track
Feedback
Student_Exam
ST_ID
Exam_ID
Question_ID
Question_Grade
Exam
Exam_ID
Exam_Title
Exam_Duration
Exam_Date
Course_Name
Exam_Grade
Course_ID
Instructor
Instructor_ID
Instructor_Name
Instructor_Lname
Instructor_Age
Instructor_BirthDate
Instructor_Gender
Salary
City
Hire_Date
Dept_ID
Deptartment
Dept_ID
Dept_Name
Dept_Location
Dept_Description
Manager_ID
Stud_Course
St_ID
Course_ID
St_Grade
Exam_ID
Student_Exam_Info
ST_ID
Exam_ID
Exam_Time
Answered_Questions
Inst_Course
Course_ID
Instructor_ID
Course
Course_ID
Course_Name
Course_Duration
Course_Level
Course_Topic
Course_ID
Topic_ID
Exam_Quest
Exam_ID
Question_ID
Question
Question
Question
Question
Question
Course_ID
Track_Course
Track_ID
Course_ID
Topic
Topic_ID
Topic_Name
Choice
Choice_ID
Question_ID
Choice

3.3 Database Dictionary

Examination Database

Description

Documentation of Online Examination Database

Database Properties

Property	Value
SQL Server Version	SQL Server 2022
Creation date	Jan 24 2024
Database size	144.00 MB

Files

Name	Type	Size	Maxsize	Autogrowth	File Name
Examination System	Data	72.00 MB	unlimited	64.00 MB	E:\ITI\Power BI\Final Project\last database \Examination System.mdf
Examination System_log	Log	72.00 MB	2048.00 GB	64.00 MB	E:\ITI\Power BI\Final Project\last database \Examination System_log.ldf

Tables

Objects

Name
dbo.Certificates
dbo.Choice
dbo.Course
dbo.Inst_Course
dbo.Course_Topic
dbo.Track_Course
dbo.Exam
dbo.Exam_Quest
dbo.Freelancing
dbo.Topic
dbo.Hiring
dbo.Instructor
dbo.Intake
dbo.Question
dbo.Register_Instructor
dbo.Register_Student
dbo.Registeration
dbo.Department
dbo.Student
dbo.Stud_Cert
dbo.Stud_Course
dbo.Student_Exam
dbo.Student_Exam_Info

[dbo].[Certificates]

Columns

Certificates

Column Name	Data Type	Allow Nulls
Certification_ID	int	☐
Certification_Name	varchar(100)	☑
Certificate_Hour	int	☑
Certificate_Date	date	☑
Certificate_URL	varchar(120)	☑
		☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Certificates	Certificaton_ID	True

Used By

[dbo].[Student_Certification]
[dbo].[delete_Certificate]
[dbo].[delete_StudentCertification]
[dbo].[insert_Certificate]
[dbo].[insert_StudentCertification]
[dbo].[select_all_Certificate]
[dbo].[select_specific_Certificate]
[dbo].[updata_Certificate]
[dbo].[update_StudentCertification]

[dbo].[Choice]

Columns

Choice

	Column Name	Data Type	Allow Nulls
🔑	Choice_ID	int	☐
🔑	Question_ID	int	☐
	Choice	varchar(10...	☑
			☐

Indexes

Key	Name	Key Columns	Unique
	PK_Choice	choice_id	True

Foreign Keys

Name	Columns
FK_Choice_Question	Question_ID->[dbo].[Question].[Question_ID]

Uses

[dbo].[Question]

Used By

[dbo].[delete_Choise]
[dbo].[delete_question]
[dbo].[insert_Choise]
[dbo].[questions]
[dbo].[select_all_choise]
[dbo].[select_specific_choices]
[dbo].[update_Choise]

[dbo].[Course]

Columns

Course

	Column Name	Data Type	Allow Nulls
	Course_ID	int	☐
	Course_Name	varchar(30)	☑
	Course_Duration	int	☑
	Course_Level	varchar(20)	☑
			☐

Indexes

Key	Name	Key Columns	Unique
	PK_Course	Course_ID	True

Used By

[dbo].[Course_Instructor]
[dbo].[Course_Topic]
[dbo].[Course_Track]
[dbo].[Question]
[dbo].[Student_Course]
[dbo].[delete_Course]
[dbo].[insert_Course]
[dbo].[insert_CourseInstructor]
[dbo].[insert_coursetopic]
[dbo].[insert_courseTrack]
[dbo].[insert_Exam]
[dbo].[insert_question]
[dbo].[insert_studentcourse]
[dbo].[NCourse_NumStud]
[dbo].[select_specificCourse]
[dbo].[selectall_Course]
[dbo].[stud_grades]
[dbo].[update_Course]
[dbo].[update_Course_Topic]
[dbo].[update_CourseInstructor]
[dbo].[update_courseTrack]
[dbo].[update_question]
[dbo].[update_Studentcourse]

[dbo].[Inst_Course]

Columns

Inst_Course

	Column Name	Data Type	Allow Nulls
🔑	Course_ID	int	☐
🔑	Instructor_ID	int	☐
			☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Course_Instructor	Course_ID,Instructor_ID	True

Foreign Keys

Name	Columns
FK_Course_Instructor_Course	cr_id->[dbo].[Course].[Course_ID]
FK_Course_Instructor_Instructor	ins_id->[dbo].[Instructor].Instructor_ID]

Uses

[dbo].[Course]
[dbo].[Instructor]

Used By

[dbo].[delete_Course]
[dbo].[delete_CourseInstructor]
[dbo].[delete_Instructor]
[dbo].[insert_CourseInstructor]
[dbo].[NCourse_NumStud]
[dbo].[selectspecific_Course_Instructor]
[dbo].[update_CourseInstructor]

[dbo].[Course_Topic]

Columns

Course_Topic

Column Name	Data Type	Allow Nulls
Course_ID	int	☐
Topic_ID	int	☐
		☐

Indexes

Key	Name	Key Columns	Unique
	PK_Course_topic	Course_ID,Topic_ID	True

Foreign Keys

Name	Columns
FK_Course_Topic_Course	cr_id->[dbo].[Course].[Course_ID]
FK_Course_Topic_Topic	topic_id->[dbo].[Topic].[Topic_ID]

Uses

[dbo].[Course]
[dbo].[Topic]

Used By

[dbo].[delete_Course]
[dbo].[delete_Course_Topic]
[dbo].[insert_coursetopic]
[dbo].[selectspecific_CourseTopic]
[dbo].[topics]
[dbo].[update_Course_Topic]

[dbo].[Course_Track]

Columns

Track_Course

	Column Name	Data Type	Allow Nulls
🔑	Track_ID	int	☐
🔑	Course_ID	int	☐
			☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Course_Track	Track_ID,Course_ID	True

Foreign Keys

Name	Columns
FK_Course_Track_Course	cr_id->[dbo].[Course].[Course_ID]
FK_Course_Track_Track	track_id->[dbo].[Track].[Track_ID]

Uses

[dbo].[Course]
[dbo].[Track]

Used By

[dbo].[delete_Course]
[dbo].[delete_courseTrack]
[dbo].[delete_track]
[dbo].[insert_courseTrack]
[dbo].[selectspecific_courseTrack]
[dbo].[update_courseTrack]

[dbo].[Exam]

Columns

Exam

Column Name	Data Type	Allow Nulls
Exam_ID	int	☐
Exam_Title	varchar(50)	☑
Exam_Duration	int	☑
Exam_Date	datetime	☑
Quest_Nums	int	☑
Exam_Grade	int	☑
Course_ID	int	☑
		☐

Indexes

Key	Name	Key Columns	Unique
	PK_Exam	Exam_ID	True

Used By

[dbo].[Exam_Question]
[dbo].[Student_Exam]
[dbo].[Student_Exam_Question]
[dbo].[delete_Exam]
[dbo].[examCorrection]
[dbo].[examGeneration]
[dbo].[insert_Exam]
[dbo].[insert_Exam_Question]
[dbo].[insert_Student_Exam]
[dbo].[insert_Student_Exam_Question]
[dbo].[select_all_Exam]
[dbo].[select_specific_Exam]
[dbo].[update_Exam]
[dbo].[update_Student_Exam]
[dbo].[update_Student_Exam_Question]

[dbo].[Exam_Quest]

Columns

Exam_Quest

	Column Name	Data Type	Allow Nulls
	Exam_ID	int	☐
	Question_ID	int	☐
			☐

Indexes

Key	Name	Key Columns	Unique
	PK_Exam_Question	Exam_ID,Question_ID	True

Foreign Keys

Name	Columns
FK_Exam_Question_Exam	exam_id->[dbo].[Exam].[Exam_ID]
FK_Exam_Question_Question	quest_id->[dbo].[Question].[Question_ID]

Uses

[dbo].[Exam]
[dbo].[Question]

Used By

[dbo].[examGeneration]
[dbo].[insert_Exam_Question]
[dbo].[questions]

[dbo].[Freelancing]

Columns

Freelancing

	Column Name	Data Type	Allow Nulls
🔑	Freelanc_ID	int	☐
	Job_Name	varchar(50)	☑
	Job_Website	varchar(50)	☑
	Job_StartDate	date	☑
	Job_Tools	varchar(30)	☑
	Feedback_Rati...	int	☑
	ST_ID	int	☑
			☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Freelancing	Freelanc_ID	True

Foreign Keys

Name	Columns
FK_Freelancing_Student	st_id->[dbo].[Student].[ST_ID]

Uses

[dbo].[Student]

Used By

[dbo].[Freelancing_Skills]
[dbo].[delete_Freelancing]
[dbo].[delete_student]
[dbo].[insert_Freelancing]
[dbo].[insert_FreelancingSkills]
[dbo].[select_Freelancingforstudent]
[dbo].[update_Freelancing]
[dbo].[update_FreelancingSkills]

[dbo].[Department]

Columns

Deptartment

	Column Name	Data Type	Allow Nulls
🔑	Dept_ID	int	☐
	Dept_Name	varchar(30)	☑
	Dept_Location	varchar(20)	☑
	Dept_Descript...	varchar(50)	☑
	Manager_ID	int	☑
			☐

Indexes

Key	Name	Key Columns	Unique
	PK_Freelancing_Skills	Dept_ID	True

Foreign Keys

Name	Columns
FK_Instructor,Department	Manager_id->[dbo].[Instructor].[Instructor_ID]

Uses

[dbo].[Freelancing]

Used By

[dbo].[delete_FreelancingSkills]
[dbo].[select_allFreelancingSkills]
[dbo].[update_FreelancingSkills]

[dbo].[Hiring]

Columns

Hiring

	Column Name	Data Type	Allow Nulls
🔑	Hiring_ID	int	☐
	Position	varchar(10...	☑
	Hiring_Date	date	☑
	Company	varchar(50)	☑
	Location	varchar(20)	☑
	Positon_Type	varchar(20)	☑
	ST_ID	int	☑
			☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Hiring	Hiring_ID	True

Foreign Keys

Name	Columns
FK_Hiring_Student	ST_ID->[dbo].[Student].[ST_ID]

Uses

[dbo].[Student]

Used By

[dbo].[delete_Hiring]
[dbo].[delete_student]
[dbo].[insert_Hiring]
[dbo].[select_Hiringforstudent]
[dbo].[update_Hiring]

[dbo].[Instructor]

Columns

Instructor

	Column Name	Data Type	Allow Nulls
🔑	Instructor_ID	int	☐
	Instructor_Fn...	varchar(20)	☑
	Instructor_Ln...	varchar(20)	☑
	Instuctor_Age	int	☑
	Instructor_Birt...	date	☑
	Instructor_Ge...	varchar(10)	☑
	Salary	int	☑
	City	varchar(20)	☑
	Hire_Date	date	☑
	Dept_ID	int	☑
			☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Instructor	Instructor_ID	True

Foreign Keys

Name	Columns
FK_Instructor,Department	Dept_ID->[dbo].[Instructor].[Dept_ID]

Used By

[dbo].[Course_Instructor]
[dbo].[Register_Instructor]
[dbo].[Track]
[dbo].[delete_Instructor]
[dbo].[insert_CourseInstructor]
[dbo].[insert_Instructor]
[dbo].[insert_instructorTrack]
[dbo].[insert_Register_Instructor]
[dbo].[insert_track]
[dbo].[select_all_Instructor]
[dbo].[select_specific_Instructor]
[dbo].[update_CourseInstructor]
[dbo].[update_Instructor]
[dbo].[update_instructorTrack] [dbo].[update_Register_Instructor]

[dbo].[Intake]

Columns

Intake

	Column Name	Data Type	Allow Nulls
🔑	Intake_ID	int	☐
	Branch_Name	varchar(25)	☐
	Intake_StartDate	date	☑
	Intake_EndDate	date	☑
	Intake_Duration	int	☑
			☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Intake	Intake_ID	True

Used By

[dbo].[Student]
[dbo].[delete_Intake]
[dbo].[insert_intake]
[dbo].[insert_student]
[dbo].[select_all_intake]
[dbo].[select_intake]
[dbo].[update_intake]
[dbo].[update_student]

[dbo].[Question]

Columns

Question

Column Name	Data Type	Allow Nulls
Question_ID	int	☐
Question_Type	varchar(20)	☑
Question_Mo...	varchar(10...	☑
Question	varchar(50...	☑
Course_ID	int	☑
		☐

Indexes

Key	Name	Key Columns	Unique
	PK_Question	Question_ID	True

Foreign Keys

Name	Columns
FK_Question_Course	Course_ID->[dbo].[Course].[Course_ID]

Uses

[dbo].[Course]

Used By

[dbo].[Choise]
[dbo].[Exam_Question]
[dbo].[Student_Exam_Question]
[dbo].[delete_Course]
[dbo].[delete_question]
[dbo].[examCorrection]
[dbo].[examGeneration]
[dbo].[insert_Choise]
[dbo].[insert_Exam_Question]
[dbo].[insert_question]
[dbo].[insert_Student_Exam_Question]
[dbo].[questions]
[dbo].[questions_studAnswer]
[dbo].[select_all_Questions]
[dbo].[select_specific_Question]
[dbo].[update_Choise]
[dbo].[update_question][dbo].[update_Student_Exam_Question]

[dbo].[Register_Instructor]

Columns

Instructor Register

	Column Name	Data Type	Allow Nulls
🔑	Instructor_id	int	☐
🔑	Register_ID	int	☐
	Ins_Insertion_...	date	☑
			☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Register_Instructor	Instructor_ID,Register_ID	True

Foreign Keys

Name	Columns
FK_Register_Instructor_Instructor	ins_id->[dbo].[Instructor].[ins_id]
FK_Register_Instructor_Registeration	register_id->[dbo].[Registeration].[register_id]

Uses

[dbo].[Instructor]
[dbo].[Registeration]

Used By

[dbo].[delete_Instructor]
[dbo].[delete_Register_Instructor]
[dbo].[delete_registration]
[dbo].[insert_Register_Instructor]
[dbo].[insert_Register_Student]
[dbo].[select_all_Register_Instructor]
[dbo].[select_all_Register_Student]
[dbo].[select_Register_Instructor]
[dbo].[update_Register_Instructor]

[dbo].[Register_Student]

Columns

Student Register

	Column Name	Data Type	Allow Nulls
🔑	Register_ID	int	☐
🔑	St_ID	int	☐
	St_Insertion_...	date	☑
			☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Register_Student	Register_ID, St_ID	True

Foreign Keys

Name	Columns
FK_Register_Student_Registeration	register_id->[dbo].[Registeration].[register_id]
FK_Register_Student_Student	st_id->[dbo].[Student].[st_id]

Uses

[dbo].[Registeration]
[dbo].[Student]

Used By

[dbo].[delete_Register_Student]
[dbo].[delete_registration]
[dbo].[delete_student]
[dbo].[insert_Register_Student]
[dbo].[select_Register_Student]
[dbo].[update_Register_Student]

[dbo].[Registeration]

Columns

Registeration

Column Name	Data Type	Allow Nulls
Register_ID	int	☐
Email	varchar(50)	☑
UserName	varchar(30)	☑
Password	varchar(30)	☑
Usertype	varchar(20)	☑
		☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Registeration	register_id	True

Used By

[dbo].[Register_Instructor]
[dbo].[Register_Student]
[dbo].[delete_registration]
[dbo].[insert_Register_Instructor]
[dbo].[insert_Register_Student]
[dbo].[insert_registration]
[dbo].[select_all_registration]
[dbo].[select_specific_registration]
[dbo].[update_Register_Instructor]
[dbo].[update_Register_Student]
[dbo].[update_registration]

[dbo].[Student]

Columns

Student

Column Name	Data Type	Allow Nulls
ST_ID	int	☐
ST_SSN	int	☑
ST_Fname	varchar(50)	☑
ST_Lname	varchar(50)	☑
ST_BirthDate	date	☑
ST_Age	int	☑
ST_City	varchar(50)	☑
ST_Gender	varchar(30)	☑
Intake_ID	int	☑
Track_ID	int	☑
		☐

Indexes

Key	Name	Key Columns	Unique
	PK_Student	ST_ID	True

Foreign Keys

Name	Columns
FK_Student_Intake	int_id->[dbo].[Intake].[int_id]
FK_Student_Track	track_id->[dbo].[Track].[track_id]

Uses

[dbo].[Intake]
[dbo].[Track]

Used By

[dbo].[Freelancing]
[dbo].[Hiring]
[dbo].[Register_Student]
[dbo].[Social_Media]
[dbo].[Student_Certification]
[dbo].[Student_Course]
[dbo].[Student_Exam]
[dbo].[Student_Exam_Question]
[dbo].[delete_Intake]
[dbo].[delete_student]
[dbo].[delete_StudentCertification]
[dbo].[delete_track]

Examination System > Tables > dbo.Student

[dbo].[insert_Freelancing]
[dbo].[insert_Hiring]
[dbo].[insert_Register_Student]
[dbo].[insert_student]
[dbo].[insert_Student_Exam]
[dbo].[insert_Student_Exam_Question]
[dbo].[insert_StudentCertification]
[dbo].[insert_studentcourse]
[dbo].[select_all_Student]
[dbo].[select_Freelancingforstudent]
[dbo].[select_specific_student]
[dbo].[select_specific_Track]
[dbo].[stud_info]
[dbo].[update_Freelancing]
[dbo].[update_Hiring]
[dbo].[update_Register_Student]
[dbo].[update_student]
[dbo].[update_Student_Exam]
[dbo].[update_Student_Exam_Question]
[dbo].[update_StudentCertification]
[dbo].[update_Studentcourse]

[dbo].[Stud_Cert]

Columns

Stud Cert

	Column Name	Data Type	Allow Nulls
	ST_ID	int	☐
	Certificate_ID	int	☐
			☐

Indexes

Key	Name	Key Columns	Unique
	PK_Student_Certification	ST_ID,Certificate_ID	True

Foreign Keys

Name	Columns
FK_Student_Certification_Certification	cert_id->[dbo].[Certification].[cert_id]
FK_Student_Certification_Student	st_id->[dbo].[Student].[st_id]

Uses

[dbo].[Certification]
[dbo].[Student]

Used By

[dbo].[delete_student]
[dbo].[delete_StudentCertification]
[dbo].[insert_StudentCertification]
[dbo].[select_StudentCertification]
[dbo].[update_StudentCertification]

[dbo].[Stud_Course]

Columns

Stud_Course

	Column Name	Data Type	Allow Nulls
🔑	St_ID	int	☐
🔑	Course_ID	int	☐
	St_Grade	float	☑
			☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Student_Course	Course_ID,ST_ID	True

Foreign Keys

Name	Columns
FK_Student_Course_Course	cr_id->[dbo].[Course].[cr_id]
FK_Student_Course_Student	st_id->[dbo].[Student].[st_id]

Uses

[dbo].[Course]
[dbo].[Student]

Used By

[dbo].[delete_Course]
[dbo].[delete_student]
[dbo].[delete_Studentcourse]
[dbo].[examCorrection]
[dbo].[insert_studentcourse]
[dbo].[NCourse_NumStud]
[dbo].[selectspecific_Studentcourse]
[dbo].[stud_grades]
[dbo].[update_Studentcourse]

[dbo].[Student_Exam]

Columns

Student Exam

	Column Name	Data Type	Allow Nulls
🔑	ST_ID	int	☐
🔑	Exam_ID	int	☐
🔑	Question_ID	int	☐
	Question_Grade	int	☑
	Student_Answer	varchar(50)	☑
			☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Student_Exam	ST_ID,Exam_ID,Question_ID	True

Foreign Keys

Name	Columns
FK_Student_Exam_Exam	ex_id->[dbo].[Exam].[exam_id]
FK_Student_Exam_Student	st_id->[dbo].[Student].[st_id]
FK_Student_Exam_Question	Question_ID->[dbo].[Question].[Question_ID]

Uses

[dbo].[Exam]
[dbo].[Student]

Used By

[dbo].[delete_Exam]
[dbo].[delete_student]
[dbo].[delete_Student_Exam]
[dbo].[examCorrection]
[dbo].[insert_Student_Exam]
[dbo].[select_all_Student_Exam]
[dbo].[select_Student_Exam]
[dbo].[update_Student_Exam]

[dbo].[Student_Exam_Info]

Columns

Student Exam Info

	Column Name	Data Type	Allow Nulls
🔑	ST_ID	int	☐
🔑	Exam_ID	int	☐
	Exam_StartTime	time(7)	☑
	Exam_EndTime	time(7)	☑
	Answered_Questions	int	☑
			☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Student_Exam_Info	ST_ID, ,Exam_ID	True

Foreign Keys

Name	Columns
FK_Student_Exam_Info_Exam	ex_id->[dbo].[Exam].[,Exam_ID]
FK_Student_Exam_Info_Student	st_id->[dbo].[Student].[ST_ID]

Uses

[dbo].[Exam]
[dbo].[Question]
[dbo].[Student]

Used By

[dbo].[delete_Exam]
[dbo].[delete_question]
[dbo].[delete_student]
[dbo].[delete_Student_Exam_Question]
[dbo].[examAnswer]
[dbo].[examCorrection]
[dbo].[insert_Student_Exam_Question]
[dbo].[questions_studAnswer]
[dbo].[select_all_Student_Exam_Question]
[dbo].[select_Student_Exam_Question]
[dbo].[update_Student_Exam_Question]

[dbo].[Topic]

Columns

Topic

	Column Name	Data Type	Allow Nulls
🔑	Topic_ID	int	☐
	Topic_Name	varchar(50)	☑
			☐

Indexes

Key	Name	Key Columns	Unique
PK	PK_Topic	Topic_ID	True

Used By

[dbo].[Course_Topic]
[dbo].[delete_topic]
[dbo].[insert_coursetopic]
[dbo].[insert_topic]
[dbo].[select_SpecificTopic]
[dbo].[topics]
[dbo].[update_Course_Topic]
[dbo].[update_topic]

[dbo].[Track]

Columns

Track

Column Name	Data Type	Allow Nulls
Track_ID	int	☐
Track_Name	varchar(50)	☑
Track_Titles	varchar(50)	☑
Supervisor_ID	int	☑
		☐

Indexes

Key	Name	Key Columns	Unique
	PK_Track	Track_ID	True

Foreign Keys

Name	Columns
FK_Track_Instructor	supervisor_id->[dbo].[Instructor].[ins_id]

Uses

[dbo].[Instructor]

Used By

[dbo].[Course_Track]
[dbo].[Student]
[dbo].[delete_Instructor]
[dbo].[delete_track]
[dbo].[insert_courseTrack]
[dbo].[insert_instructorTrack]
[dbo].[insert_student]
[dbo].[insert_track]
[dbo].[select_all_tracks]
[dbo].[stud_info]
[dbo].[update_courseTrack]
[dbo].[update_instructorTrack]
[dbo].[update_student]
[dbo].[update_track]

Stored Procedures

Objects

Name
dbo.delete_Certificate
dbo.delete_Choice
dbo.delete_Course
dbo.delete_Course_Topic
dbo.delete_CourseInstructor
dbo.delete_courseTrack
dbo.delete_Exam
dbo.delete_Freelancing
dbo.delete_FreelancingSkills
dbo.delete_Hiring
dbo.delete_Instructor
dbo.delete_instructorTrack
dbo.delete_Intake
dbo.delete_question
dbo.delete_Register_Instructor
dbo.delete_Register_Student
dbo.delete_registration
dbo.delete_student
dbo.delete_Student_Exam
dbo.delete_Student_Exam_Question
dbo.delete_StudentCertification
dbo. delete_Stud_Course
dbo.delete_topic
dbo.delete_track
dbo.Exam_Answer
dbo.examCorrection
dbo.Exam_Generation
dbo.insert_Certificate
dbo.insert_Choice
dbo.insert_Course
dbo.insert_CourseInstructor
dbo.insert_coursetopic
dbo.insert_courseTrack

dbo.insert_Exam
dbo.insert_Exam_Question
dbo.insert_Freelancing
dbo.insert_FreelancingSkills
dbo.insert_Hiring
dbo.insert_Instructor
dbo.insert_instructorTrack
dbo.insert_intake
dbo.insert_question
dbo.insert_Register_Instructor
dbo.insert_Register_Student
dbo.insert_registration
dbo.insert_student
dbo.insert_Student_Exam
dbo.insert_Stud_Course
dbo.insert_StudentCertification
dbo.insert_studentcourse
dbo.insert_topic
dbo.insert_track
dbo.Courses_NoStud
dbo.QuestionsinExam
dbo.QuestionsinExamWithSTAnswer
dbo.select_all_Certificate
dbo.select_all_choise
dbo.select_all_Exam
dbo.select_all_Instructors
dbo.select_all_intakes
dbo.select_all_Questions
dbo.select_all_Register_Instructor
dbo.select_all_Register_Student
dbo.select_all_registration
dbo.select_all_Students
dbo.select_all_Student_Exam
dbo.select_all_Student_Exam_Question
dbo.select_all_tracks
dbo.select_allFreelancingSkills
dbo.select_Freelancingforstudent
dbo.select_Hiringforstudent
dbo.select_intake
dbo.select_Student_Exam_Question
dbo.select_StudentCertification

dbo.select_course
dbo.Stud_Grades
dbo.Studs_Dept
dbo.topics
dbo.update_Certificate
dbo.update_Choise
dbo.update_Course
dbo.update_Course_Topic
dbo.update_CourseInstructor
dbo.update_courseTrack
dbo.update_Exam
dbo.update_Freelancing
dbo.update_FreelancingSkills
dbo.update_Hiring
dbo.update_Instructor
dbo.update_instructorTrack
dbo.update_intake
dbo.update_question
dbo.update_Register_Instructor
dbo.update_Register_Student
dbo.update_registration
dbo.update_student
dbo.update_Student_Exam
dbo.update_Student_Exam_Question
dbo.update_StudentCertification
dbo.update_Studentcourse
dbo.update_topic
dbo.update_track

[dbo].[delete_Certificate]

Parameters

Name	Data Type	Max Length (Bytes)
@cert_id	int	4

Uses

[dbo].[Certification]

[dbo].[delete_Choice]

Parameters

Name	Data Type	Max Length (Bytes)
@choice_id	int	4

Uses

[dbo].[Choice]

[dbo].[delete_Course]

Parameters

Name	Data Type	Max Length (Bytes)
@course_id	int	4

Uses

[dbo].[Course]
[dbo].[inst_course]
[dbo].[Course_Topic]
[dbo].[Question]
[dbo].[Stud_Course]

[dbo].[delete_Course_Topic]

Parameters

Name	Data Type	Max Length (Bytes)
@course_id	int	4
@topic_id	int	4

Uses

[dbo].[Course_Topic]

[dbo].[delete_Exam]

Parameters

Name	Data Type	Max Length (Bytes)
@exam_id	int	4

Uses

[dbo].[Exam]
[dbo].[Student_Exam_info]

[dbo].[delete_Freelancing]

Parameters

Name	Data Type	Max Length (Bytes)
@freelanc_id	int	4

Uses

[dbo].[Freelancing]

[dbo].[delete_Hiring]

Parameters

Name	Data Type	Max Length (Bytes)

@hiring_id	int	4

Uses

[dbo].[Hiring]

[dbo].[delete_Instructor]

Parameters

Name	Data Type	Max Length (Bytes)
@ins_id	int	4

Uses

[dbo].[inst_course]
[dbo].[Instructor]

[dbo].[delete_Intake]

Parameters

Name	Data Type	Max Length (Bytes)
@intake_id	int	4

Uses

[dbo].[Intake]
[dbo].[Student]

[dbo].[delete_question]

Parameters

Name	Data Type	Max Length (Bytes)
@quest_id	int	4

Uses

[dbo].[Choice]
[dbo].[Question]
[dbo].[Student_Exam_info]

[dbo].[Delete_Instructor_Register]

Parameters

Name	Data Type	Max Length (Bytes)
@ins_id	int	4
@register_id	int	4

Uses

[dbo].[Register_Instructor]

[dbo].[Delete_Student_Register]

Parameters

Name	Data Type	Max Length (Bytes)
@st_id	int	4
@Register_ID	int	4

Uses

[dbo].[Register_Student]

[dbo].[delete_registration]

Parameters

Name	Data Type	Max Length (Bytes)
@register_id	int	4

Uses

[dbo].[Register_Instructor]
[dbo].[Register_Student]
[dbo].[Registeration]

[dbo].[delete_student]

Parameters

Name	Data Type	Max Length (Bytes)
@st_id	int	4

Uses

[dbo].[Freelancing]
[dbo].[Hiring]
[dbo].[Student]
[dbo].[Student_Certification]
[dbo].[Student_Course]
[dbo].[Student_Exam_Info]

[dbo].[delete_Stud_course]

Parameters

Name	Data Type	Max Length (Bytes)
@st_id	int	4
@c_id	int	4

Uses

[dbo].[Student_Course]

[dbo].[delete_topic]

Parameters

Name	Data Type	Max Length (Bytes)
@topic_id	int	4

Uses

[dbo].[Topic]

[dbo].[delete_track]

Parameters

Name	Data Type	Max Length (Bytes)
@track_id	int	4

Uses

[dbo].[Student]
[dbo].[Track]

[dbo].[exam_Answer]

Parameters

Name	Data Type	Max Length (Bytes)
@student_Id	int	4
@exam_Id	int	4
@question_ID	int	4
@Student_Answer	varchar(max)	max

Uses

[dbo].[Student_Exam]

[dbo].[examCorrection]

Parameters

Name	Data Type	Max Length (Bytes)
@examID	int	4
@studentID	int	4

Uses

[dbo].[Exam]
[dbo].[Question]
[dbo].[Student_Course]
[dbo].[Student_Exam]
[dbo].[Student_Exam_Info]

[dbo].[exam_Generation]

Parameters

Name	Data Type	Max Length (Bytes)
@exam_title	nvarchar(300)	600
@exam_duration	int	4
@course_id	int	4
@exam_grade	datetime	8
@exam_date	datetime	8
@questions_nums	int	4
@TF_Q	int	4
@MCQ_Q	int	4

Uses

[dbo].[Exam]
[dbo].[Exam_Question]
[dbo].[Question]

[dbo].[insert_Certificate]

Parameters

Name	Data Type	Max Length (Bytes)
@cert_id	int	4
@cert_title	nvarchar(100)	200
@cert_website	varchar(50)	50
@cert_startdate	date	3
@cert_enddate	date	3
@cert_hours	int	4

Uses

[dbo].[Certification]

[dbo].[insert_Choice]

Parameters

Name	Data Type	Max Length (Bytes)
@choice_id	int	4

@choise	varchar(30)	30
@quest_id	int	4

Uses

[dbo].[Choise]
[dbo].[Question]

[dbo].[insert_Course]

Parameters

Name	Data Type	Max Length (Bytes)
@course_id	int	4
@course_name	nvarchar(100)	200
@ course_duration	int	4
@ course_level	int	4

Uses

[dbo].[Course]

[dbo].[insert_Freelancing]

Parameters

Name	Data Type	Max Length (Bytes)
@Freelance_id	int	4
@job_name	nvarchar(50)	100
@job_website	nvarchar(50)	100
@job_Startdate	date	3
@Job_Tools	nvarchar(50)	100
@Feedback_Rating	int	4
@st_id	int	4

Uses

[dbo].[Freelancing]
[dbo].[Student]

[dbo].[insert_Hiring]

Parameters

Name	Data Type	Max Length (Bytes)
@hiring_id	int	4
@position	nvarchar(100)	200
@position_type	nvarchar(100)	200
@job_type	nvarchar(20)	40
@job_location	nvarchar(20)	40
@hiring_date	date	3
@company	nvarchar(50)	100
@st_id	int	4

Uses

[dbo].[Hiring]
[dbo].[Student]

[dbo].[insert_Instructor]

Parameters

Name	Data Type	Max Length (Bytes)
@ins_id	int	4
@ins_ssn	nvarchar(50)	100
@ins_fname	nvarchar(50)	100
@ins_lname	nvarchar(50)	100
@ins_gender	nvarchar(10)	20
@ins_birthdate	date	3
@ins_salary	float	8
@ins_hire_date	date	3
@ins_city	nvarchar(50)	100
@ins_dept_id	int	4

Uses

[dbo].[Instructor]

[dbo].[insert_intake]

Parameters

Name	Data Type	Max Length (Bytes)
@intake_id	int	4
@ intake_startdate	date	3
@ intake_enddate	date	3
@ intake_duration	int	4
@Branch_Name	nvarchar(50)	100

Uses

[dbo].[Intake]

[dbo].[insert_question]

Parameters

Name	Data Type	Max Length (Bytes)
@quest_id	int	4
@type	nvarchar(20)	40
@quest	nchar(500)	1000
@modelanswer	nchar(500)	1000
@cr_id	int	4

Uses

[dbo].[Course]
[dbo].[Question]

[dbo].[insert_student]

Parameters

Name	Data Type	Max Length (Bytes)
@st_id	int	4
@st_ssn	nvarchar(50)	100
@st_birthdate	date	3
@st_city	nvarchar(50)	100
@st_fname	nvarchar(50)	100
@st_lname	nvarchar(50)	100

@st_gender	nvarchar(10)	20
@track_id	int	4
@intake_id	int	4
@ST_Age	int	4
@Branch	nvarchar(50)	100

Uses

[dbo].[Intake]
[dbo].[Student]
[dbo].[Track]

[dbo].[insert_Student_Exam]

Parameters

Name	Data Type	Max Length (Bytes)
@st_id	int	4
@ex_id	int	4
@quest_id	int	4
@st_answer	nvarchar(100)	max
@quest_grade	int	4

Uses

[dbo].[Exam]
[dbo].[Student]
[dbo].[Student_Exam]

[dbo].[insert_Stud_Course]

Parameters

Name	Data Type	Max Length (Bytes)
@c_id	int	4
@st_id	int	4
@st_grade	float	4

Uses

[dbo].[Course]
[dbo].[Student]

[dbo].[Student_Course]

[dbo].[insert_topic]

Parameters

Name	Data Type	Max Length (Bytes)
@tpc_id	int	4
@tpc_name	nvarchar(50)	100

Uses

[dbo].[Topic]

[dbo].[insert_track]

Parameters

Name	Data Type	Max Length (Bytes)
@track_id	int	4
@track_name	nvarchar(50)	200
@track_title	nvarchar(50)	200
@supervisor_id	int	4

Uses

[dbo].[Student]
[dbo].[Track]

[dbo].[Courses_NoStud]

Parameters

Name	Data Type	Max Length (Bytes)
@ins_id	int	4

Uses

[dbo].[Course]
[dbo].[Student_Course]

[dbo].[QuestionsinExam]

Parameters

Name	Data Type	Max Length (Bytes)
@exam_id	int	4

Uses

[dbo].[Choise]
[dbo].[Exam_Quest]
[dbo].[Question]

[dbo].[QuestionsinExamWithSTAnswer]

Parameters

Name	Data Type	Max Length (Bytes)
@exam_id	int	4
@st_id	int	4

Uses

[dbo].[Question]
[dbo].[Student_Exam_info]

[dbo].[select_all_Certificate]

Uses

[dbo].[Certification]

[dbo].[select_all_choice]

Uses

[dbo].[Choise]

[dbo].[select_all_Instructor]

Uses

[dbo].[Instructor]

[dbo].[Select_All_Intakes]

Uses

[dbo].[Intake]

[dbo].[select_all_Questions]

Uses

[dbo].[Question]

[dbo].[select_all_Students]

Uses

[dbo].[Student]

[dbo].[select_all_tracks]

Uses

[dbo].[Track]

[dbo].[select_intake]

Parameters

Name	Data Type	Max Length (Bytes)
@int_id	int	4

Uses

[dbo].[Intake]

[dbo].[select_specific_Certificate]

Parameters

Name	Data Type	Max Length (Bytes)
@cert_id	int	4

Uses

[dbo].[Certification]

[dbo].[Select_Student]

Parameters

Name	Data Type	Max Length (Bytes)
@st_id	int	4

Uses

[dbo].[Student]

[dbo].[select_track]

Parameters

Name	Data Type	Max Length (Bytes)
@track_id	int	4

Uses

[dbo].[track]

[dbo].[select_topic]

Parameters

Name	Data Type	Max Length (Bytes)
@topic_id	int	4

Uses

[dbo].[Topic]

[dbo].[select_all_Course]

Uses

[dbo].[Course]

[dbo].[select_ course]

Parameters

Name	Data Type	Max Length (Bytes)
@course_id	int	4

Uses

[dbo].[Course]

[dbo].[select_intake]

Parameters

Name	Data Type	Max Length (Bytes)
@intake_id	int	4

Uses

[dbo].[Intake]

[dbo].[select _Certificate]

Parameters

Name	Data Type	Max Length (Bytes)
@cert_id	int	4

Uses

[dbo].[Certification]

[dbo].[select _student]

Parameters

Name	Data Type	Max Length (Bytes)
@st_id	int	4

Uses

[dbo].[Student]

[dbo].[select_Course]

Parameters

Name	Data Type	Max Length (Bytes)
@course_id	int	4

Uses

[dbo].[Course]

[dbo].[select_Topic]

Parameters

Name	Data Type	Max Length (Bytes)
@topic_id	int	4

Uses

[dbo].[Topic]

[dbo].[stud_grades]

Parameters

Name	Data Type	Max Length (Bytes)
@st_id	int	4

Uses

[dbo].[Course]
[dbo].[Student_Course]

[dbo].[Studs_Dept]

Parameters

Name	Data Type	Max Length (Bytes)
@track_id	int	4

Uses

[dbo].[Student]
[dbo].[Track]

[dbo].[topics]

Parameters

Name	Data Type	Max Length (Bytes)
@topic_id	int	4

Uses

[dbo].[Course_Topic]
[dbo].[Topic]

[dbo].[update_Certificate]

Parameters

Name	Data Type	Max Length (Bytes)
@cert_id	int	4
@cert_title	nvarchar(100)	200
@cert_website	nvarchar(50)	50
@cert_startdate	date	3
@cert_enddate	date	3
@cert_hours	int	4

Uses

[dbo].[Certification]

[dbo].[update_Choice]

Parameters

Name	Data Type	Max Length (Bytes)
@choice_id	int	4
@choise	varchar(30)	30
@quest_id	int	4

Uses

[dbo].[Choise]
[dbo].[Question]

[dbo].[update_Course]

Parameters

Name	Data Type	Max Length (Bytes)
@course_id	int	4

@course_name	nvarchar(100)	200
@ course_duration	int	4
@ course_level	int	4

Uses

[dbo].[Course]

[dbo].[update_Course_Topic]

Parameters

Name	Data Type	Max Length (Bytes)
@course_id	int	4
@new_course_id	int	4
@topic_id	int	4
@new_topic_id	int	4

Uses

[dbo].[Course]
[dbo].[Course_Topic]
[dbo].[Topic]

[dbo].[update_Exam]

Parameters

Name	Data Type	Max Length (Bytes)
@exam_id	int	4
@exam_title	nvarchar(50)	100
@exam_startdate	date	3
@exam_enddate	date	3
@exam_fullmark	int	4
@cr_id	int	4
@questions_numbers	int	4

Uses

[dbo].[Exam]

[dbo].[update_Freelancing]

Parameters

Name	Data Type	Max Length (Bytes)
@Freelance_id	int	4
@job_name	nvarchar(50)	100
@job_website	nvarchar(50)	100
@job_Startdate	date	3
@Job_Tools	nvarchar(50)	100
@Feedback_Rating	int	4
@st_id	int	4

Uses

[dbo].[Freelancing]
[dbo].[Student]

[dbo].[update_Hiring]

Parameters

Name	Data Type	Max Length (Bytes)
@hiring_id	int	4
@position	nvarchar(100)	200
@position_type	nvarchar(100)	200
@job_type	nvarchar(20)	40
@job_location	nvarchar(20)	40
@hiring_date	date	3
@company	nvarchar(50)	100
@st_id	int	4

Uses

[dbo].[Hiring]
[dbo].[Student]

[dbo].[update_Instructor]

Parameters

Name	Data Type	Max Length (Bytes)
@ins_id	int	4
@ins_ssn	nvarchar(50)	100
@ins_fname	nvarchar(50)	100
@ins_lname	nvarchar(50)	100
@ins_gender	nvarchar(10)	20
@ins_birthdate	date	3
@ins_salary	float	8
@ins_hire_date	date	3
@ins_city	nvarchar(50)	100
@ins_dept_id	int	4

Uses

[dbo].[Instructor]

[dbo].[update_intake]

Parameters

Name	Data Type	Max Length (Bytes)
@intake_id	int	4
@ intake_startdate	date	3
@ intake_enddate	date	3
@ intake_duration	int	4
@Branch_Name	nvarchar(50)	100

Uses

[dbo].[Intake]

[dbo].[update_question]

Parameters

Name	Data Type	Max Length (Bytes)
@quest_id	int	4
@type	nvarchar(20)	40

@quest	nchar(500)	1000
@modelanswer	nchar(500)	1000
@cr_id	int	4

Uses

[dbo].[Course]
[dbo].[Question]

[dbo].[Update_Instructor_Register]

Parameters

Name	Data Type	Max Length (Bytes)
@ins_id	int	4
@register_id	int	4
@Ins_Insertion_Date	date	3

Uses

[dbo].[Instructor]
[dbo].[Register_Instructor]
[dbo].[Registeration]

[dbo].[Update_Student_Register]

Parameters

Name	Data Type	Max Length (Bytes)
@st_id	int	4
@register_id	int	4
@St_Insertion_Date	date	3

Uses

[dbo].[Register_Student]
[dbo].[Registeration]
[dbo].[Student]

[dbo].[update_registration]

Parameters

Name	Data Type	Max Length (Bytes)
@register_id	int	4
@email	nvarchar(50)	100
@username	nvarchar(50)	100
@password	nvarchar(50)	100
@usertype	nvarchar(20)	40

Uses

[dbo].[Registeration]

[dbo].[update_student]

Parameters

Name	Data Type	Max Length (Bytes)
@st_id	int	4
@st_ssn	nvarchar(50)	100
@st_birthdate	date	3
@st_city	nvarchar(50)	100
@st_fname	nvarchar(50)	100
@st_lname	nvarchar(50)	100
@st_gender	nvarchar(10)	20
@track_id	int	4
@intake_id	int	4
@ST_Age	int	4
@Branch	nvarchar(50)	100

Uses

[dbo].[Intake]
[dbo].[Student]
[dbo].[Track]

[dbo].[update_Student_Exam]

Parameters

Name	Data Type	Max Length (Bytes)
@st_id	int	4
@ex_id	int	4
@quest_id	int	4
@st_answer	nvarchar(100)	max
@quest_grade	int	4

Uses

[dbo].[Exam]
[dbo].[Student]
[dbo].[Student_Exam]

[dbo].[update_Stud_Course]

Parameters

Name	Data Type	Max Length (Bytes)
@c_id	int	4
@st_id	int	4
@st_grade	float	4

Uses

[dbo].[Course]
[dbo].[Student]
[dbo].[Stud_Course]

[dbo].[update_topic]

Parameters

Name	Data Type	Max Length (Bytes)
@tpc_id	int	4
@tpc_name	nvarchar(50)	100

Uses

[dbo].[Topic]

[dbo].[update_track]

Parameters

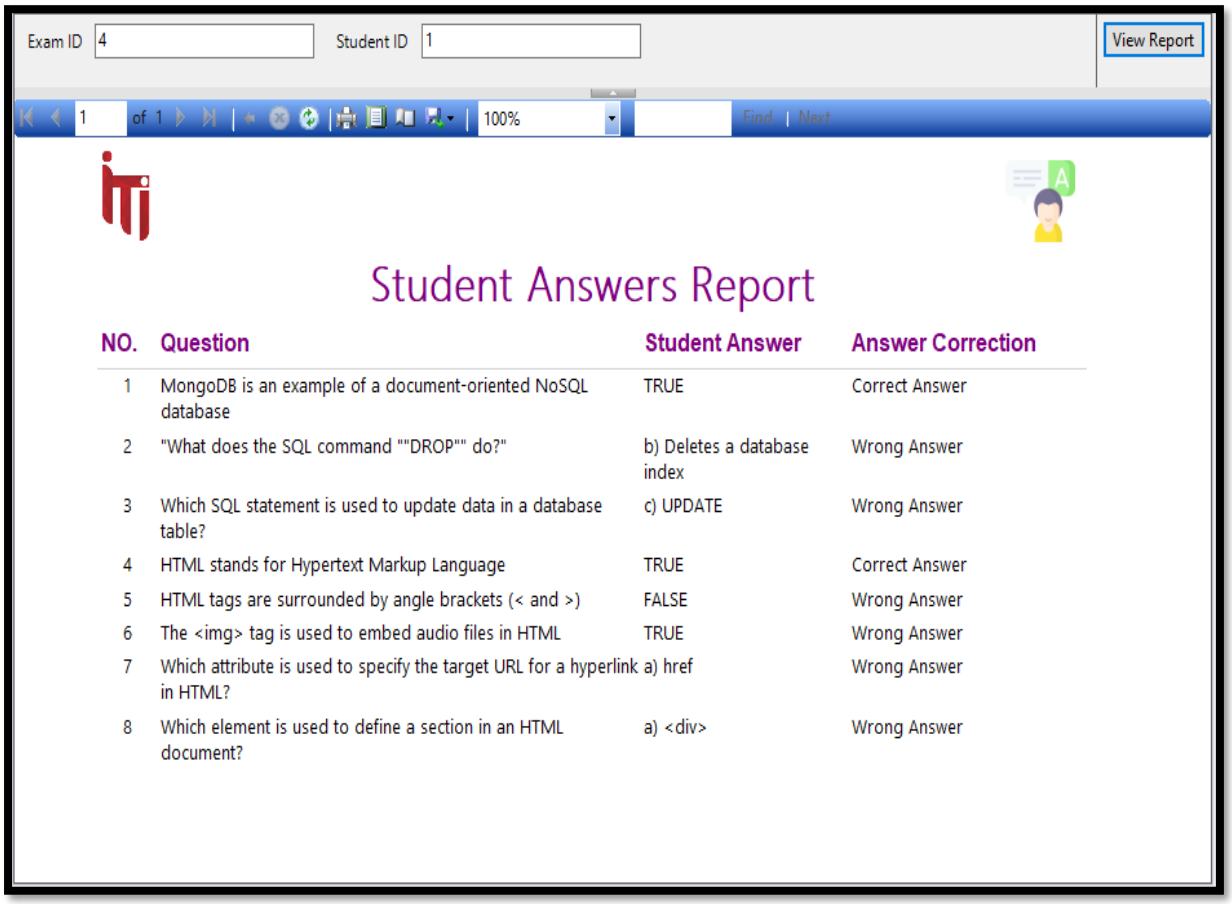
Name	Data Type	Max Length (Bytes)
@track_id	int	4
@track_name	nvarchar(50)	200
@track_title	nvarchar(50)	200
@supervisor_id	int	4

Uses

[dbo].[Track]

Examination System > Security > Roles > Database Roles > public

3.6 SSRS Reports



Exam ID 4 Student ID 1 View Report

1 of 1 100% Find | Next

Student Answers Report

NO.	Question	Student Answer	Answer Correction
1	MongoDB is an example of a document-oriented NoSQL database	TRUE	Correct Answer
2	"What does the SQL command ""DROP"" do?"	b) Deletes a database index	Wrong Answer
3	Which SQL statement is used to update data in a database table?	c) UPDATE	Wrong Answer
4	HTML stands for Hypertext Markup Language	TRUE	Correct Answer
5	HTML tags are surrounded by angle brackets (< and >)	FALSE	Wrong Answer
6	The <img> tag is used to embed audio files in HTML	TRUE	Wrong Answer
7	Which attribute is used to specify the target URL for a hyperlink in HTML?	a) href	Wrong Answer
8	Which element is used to define a section in an HTML document?	a)	Wrong Answer

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Exam ID 4

View Report

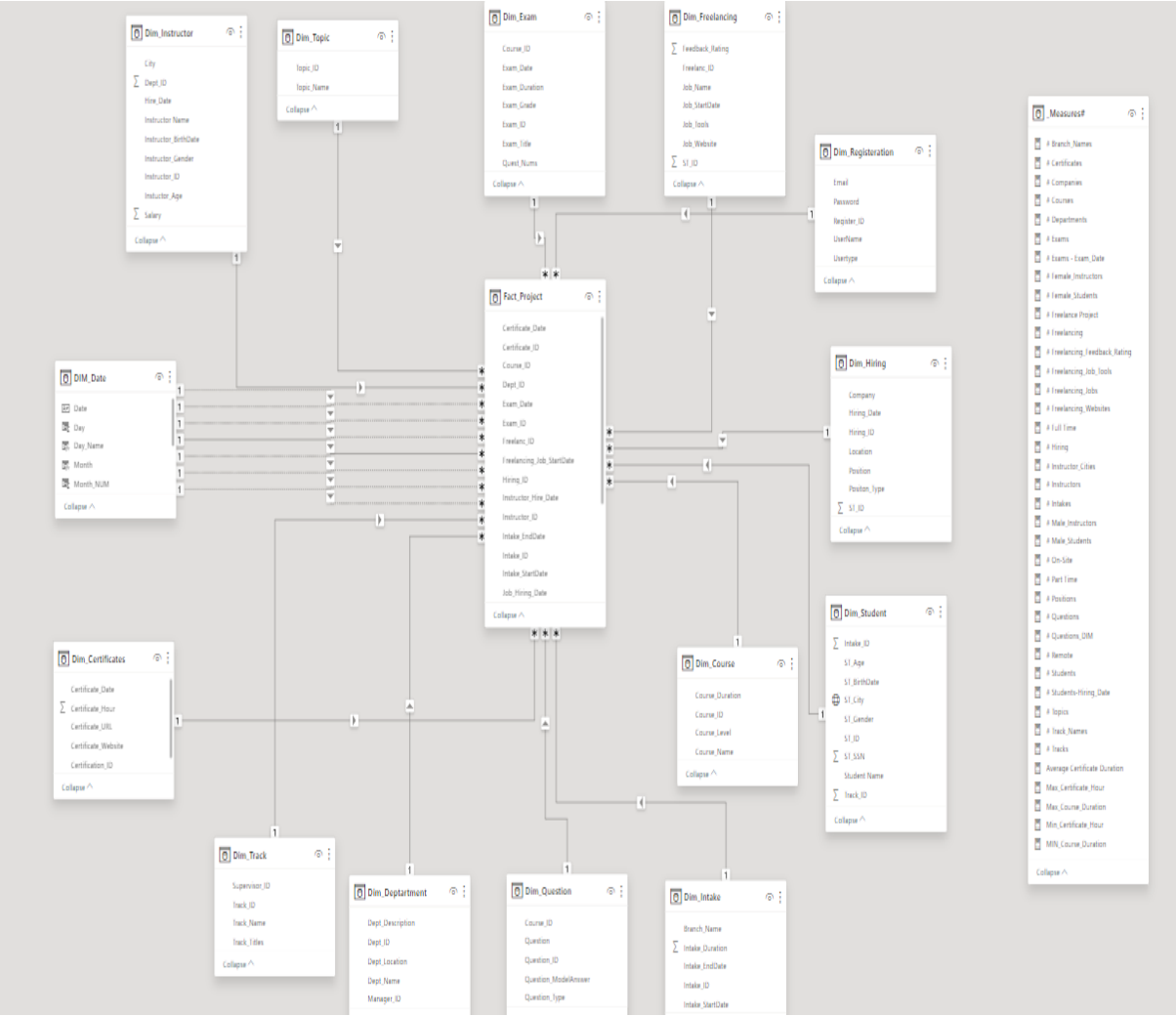
1 of 1 75% Find | Next

Exam Questions

NO.	Question	Choice1	Choice2	Choice3	Choice4
1	"What does the HTML acronym ""CSS"" stand for?"	a) Cascading Style Sheet	b) Computer Style Sheet	c) Creative Style Sheet	d) Custom Style Sheet
2	"What does the SQL command ""DROP"" do?"	a) Deletes a database table	b) Deletes a database index	c) Deletes a database record	d) Deletes a database column
3	A database index improves database performance by allowing faster retrieval of data	a) TRUE	b) FALSE		
4	HTML stands for Hypertext Markup Language	a) TRUE	b) FALSE		
5	HTML tags are surrounded by angle brackets (< and >)	a) TRUE	b) FALSE		
6	MongoDB is an example of a document-oriented NoSQL database	a) TRUE	b) FALSE		
7	The <img> tag is used to embed audio files in HTML	a) TRUE	b) FALSE		
8	Which attribute is used to specify the target URL for a hyperlink in HTML?	a) href	b) target	c) src	d) link
9	Which element is used to define a section in an HTML document?	a)	b) <section>	c) <article>	d)
10	Which SQL statement is used to update data in a database table?	a) DELETE	b) ALTER	c) UPDATE	d) MODIFY

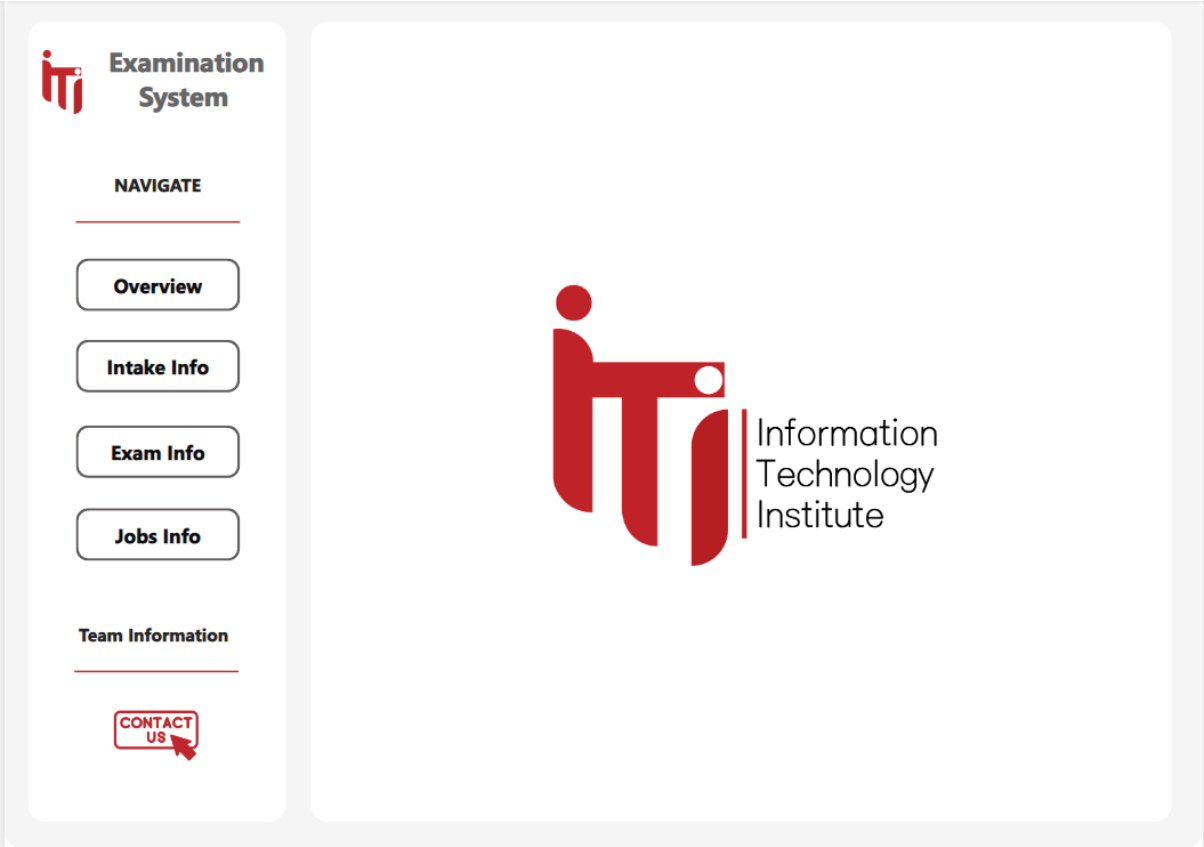
Examination System > Security > Roles > Database Roles > public

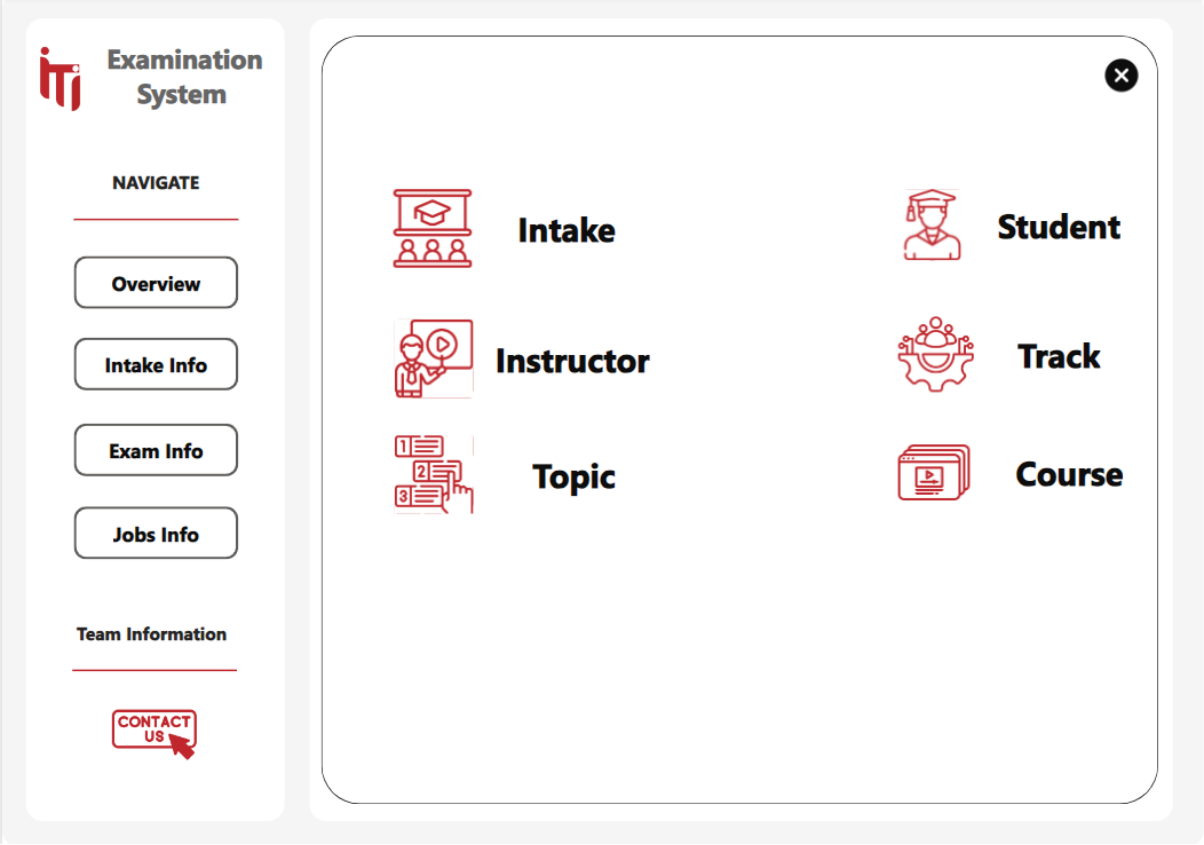
3.7 Star Schema



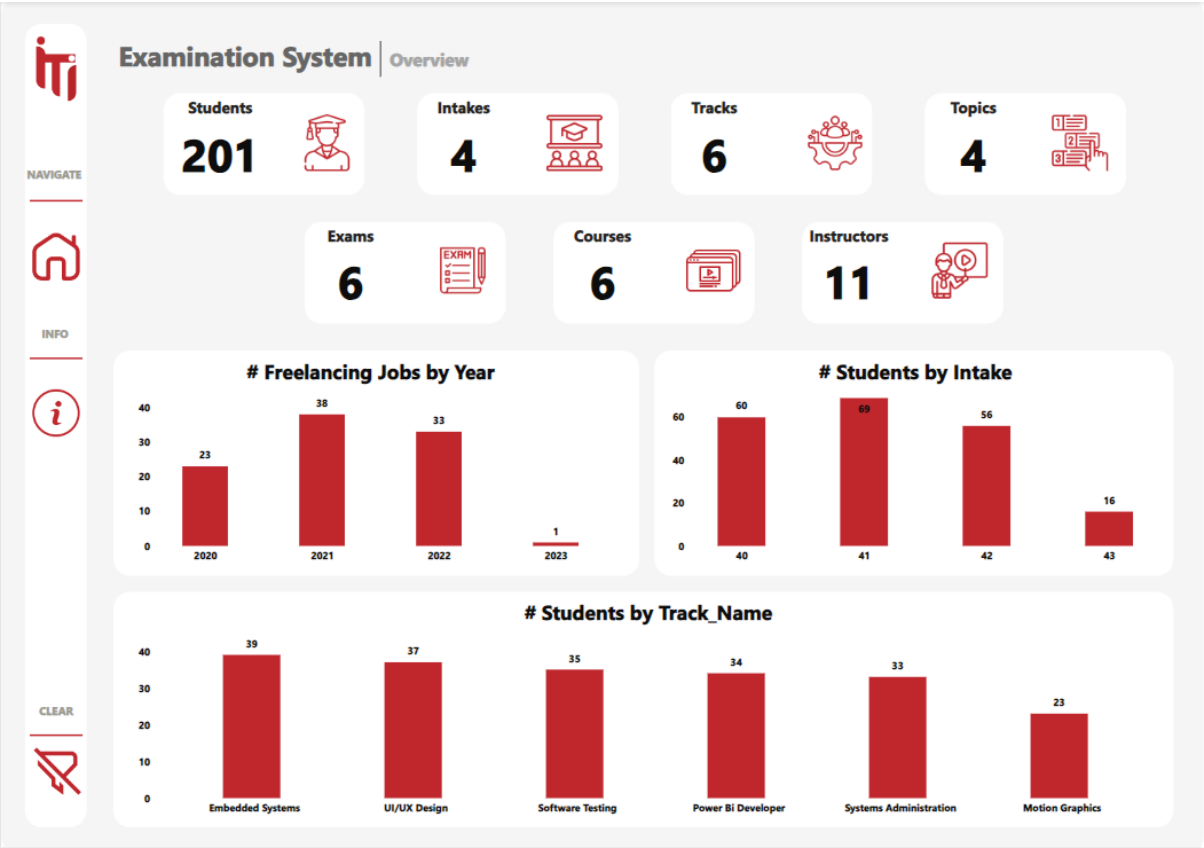
Examination System > Security > Roles > Database Roles > public

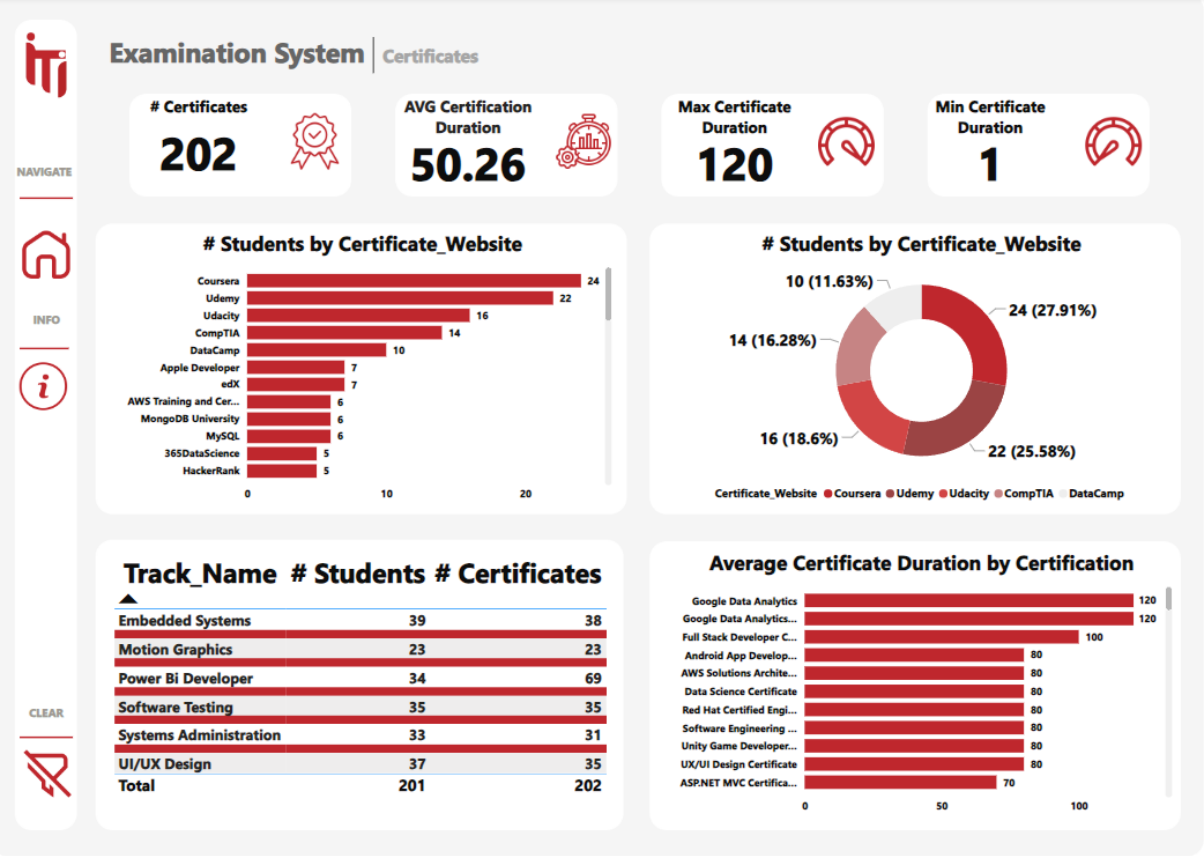
3.8 Dashboards





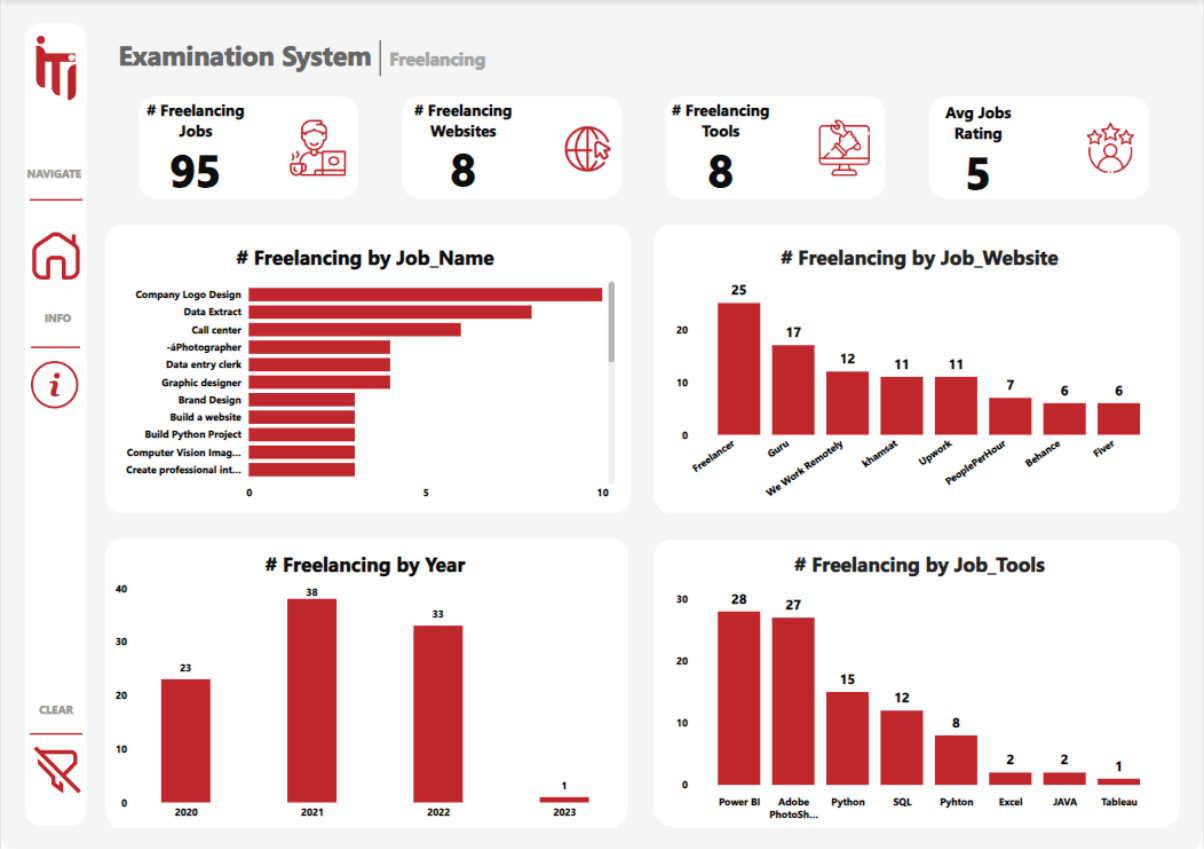
Examination System > Security > Roles > Database Roles > public

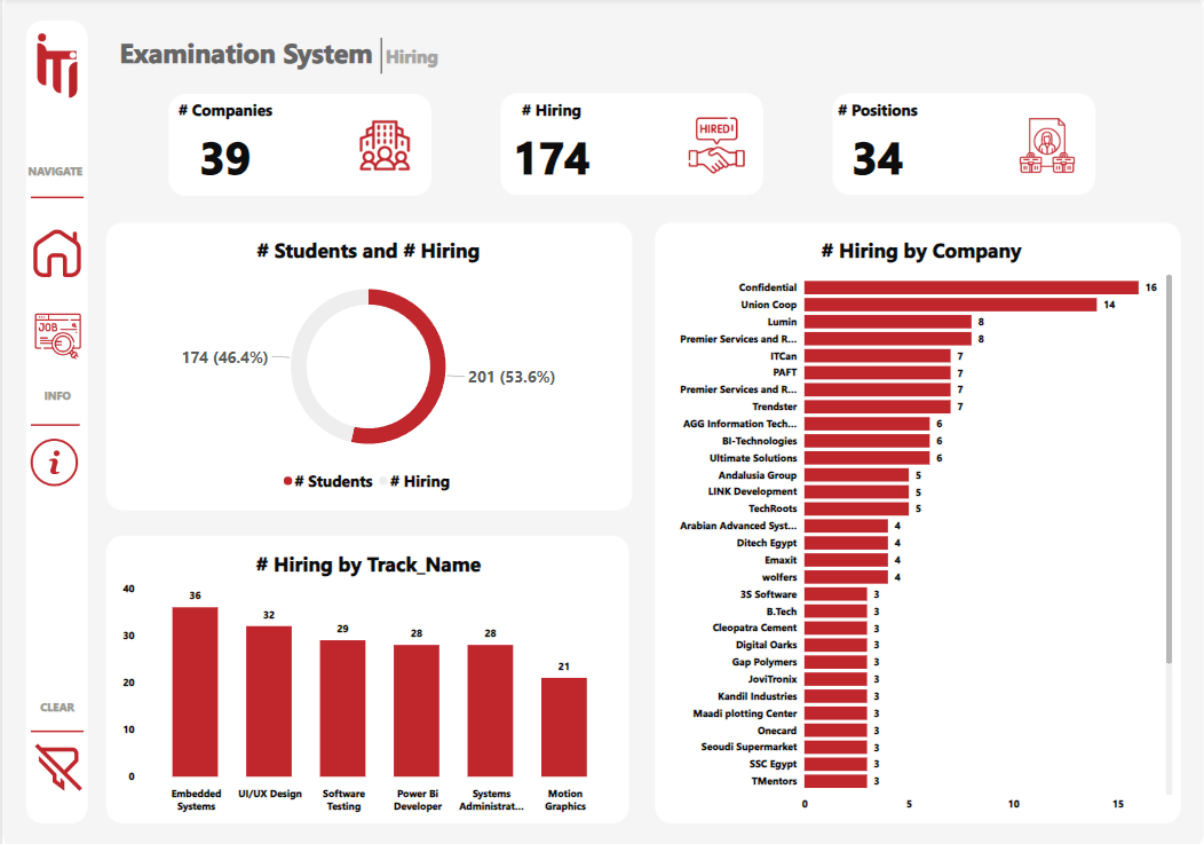




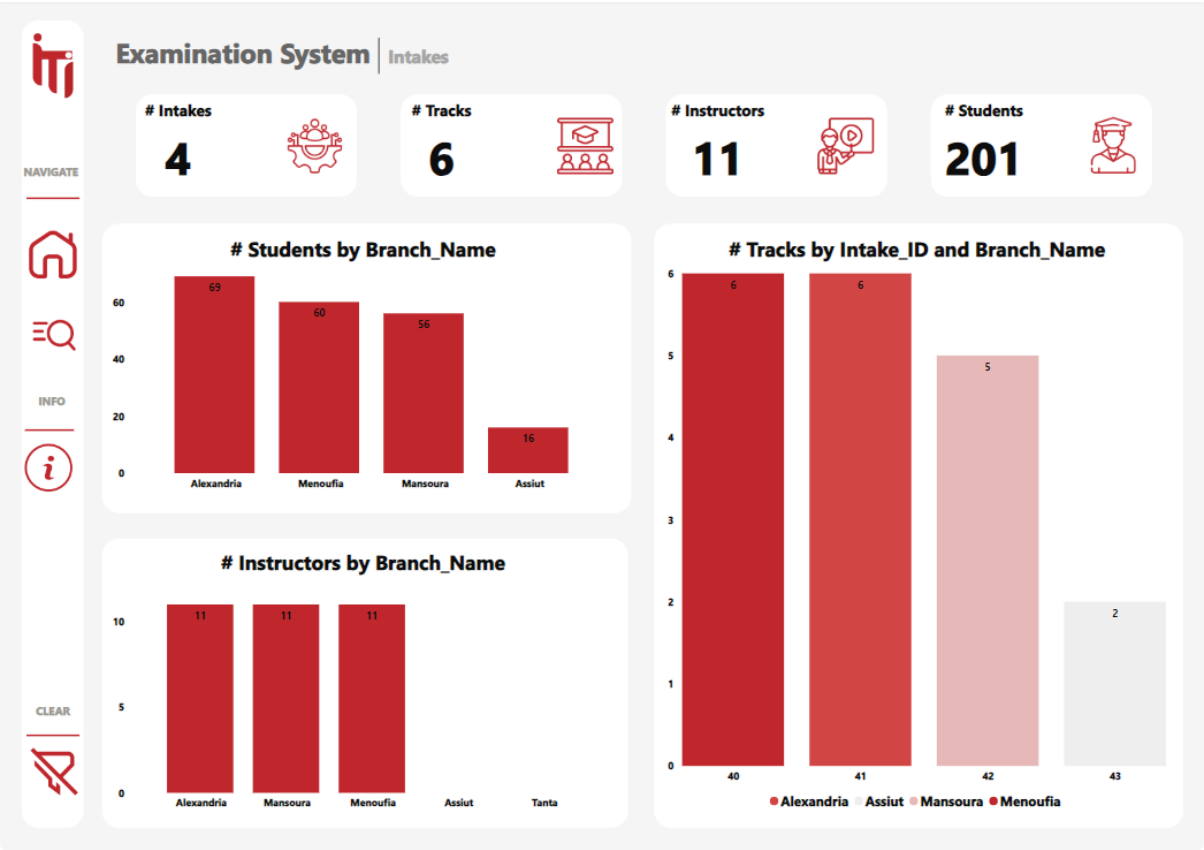
Track_Name	# Students	# Certificates
Embedded Systems	39	38
Motion Graphics	23	23
Power Bi Developer	34	69
Software Testing	35	35
Systems Administration	33	31
UI/UX Design	37	35
Total	201	202

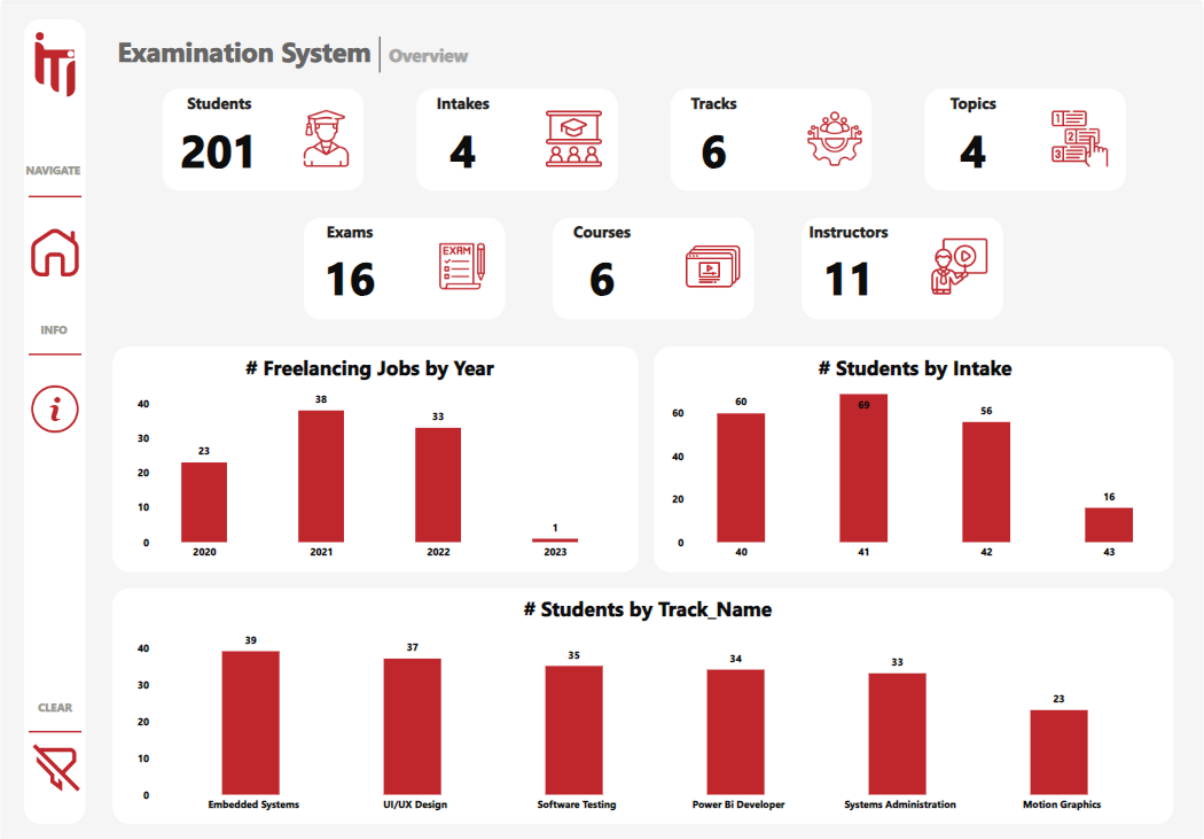
Examination System > Security > Roles > Database Roles > public



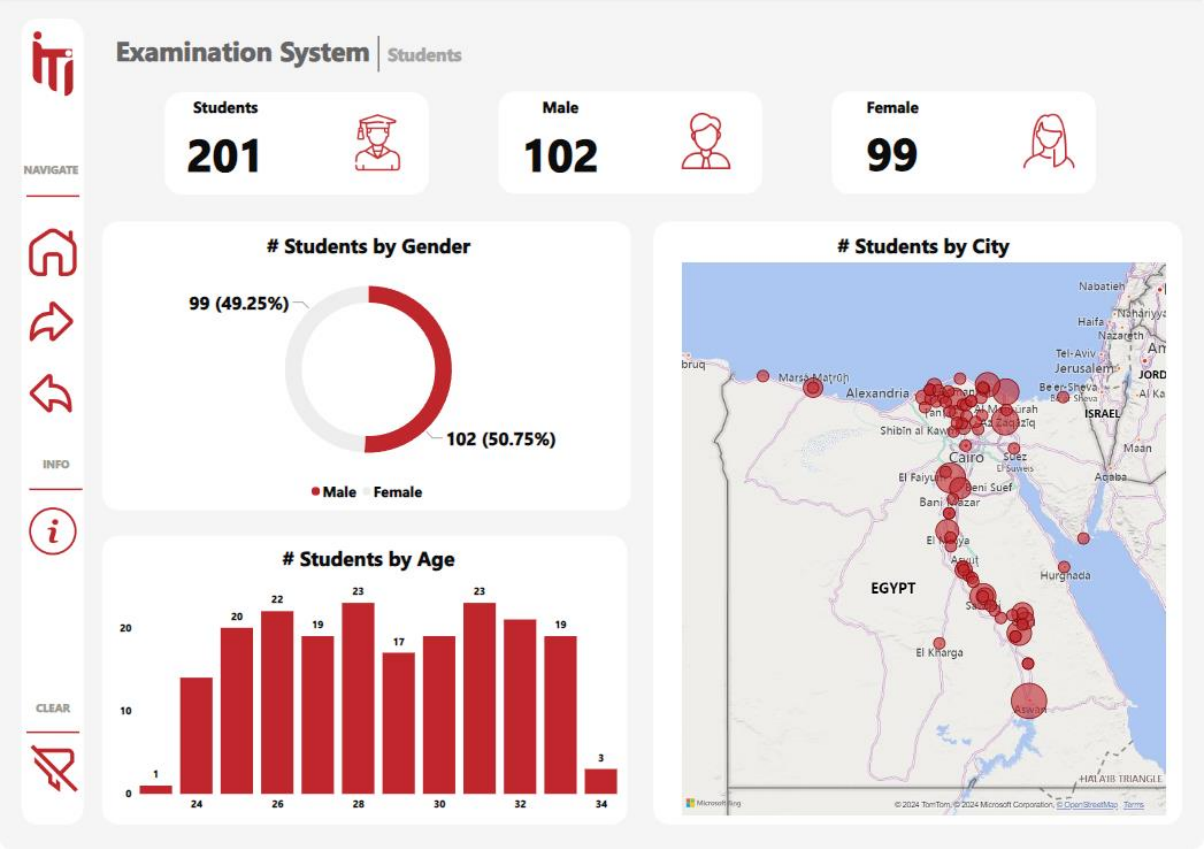


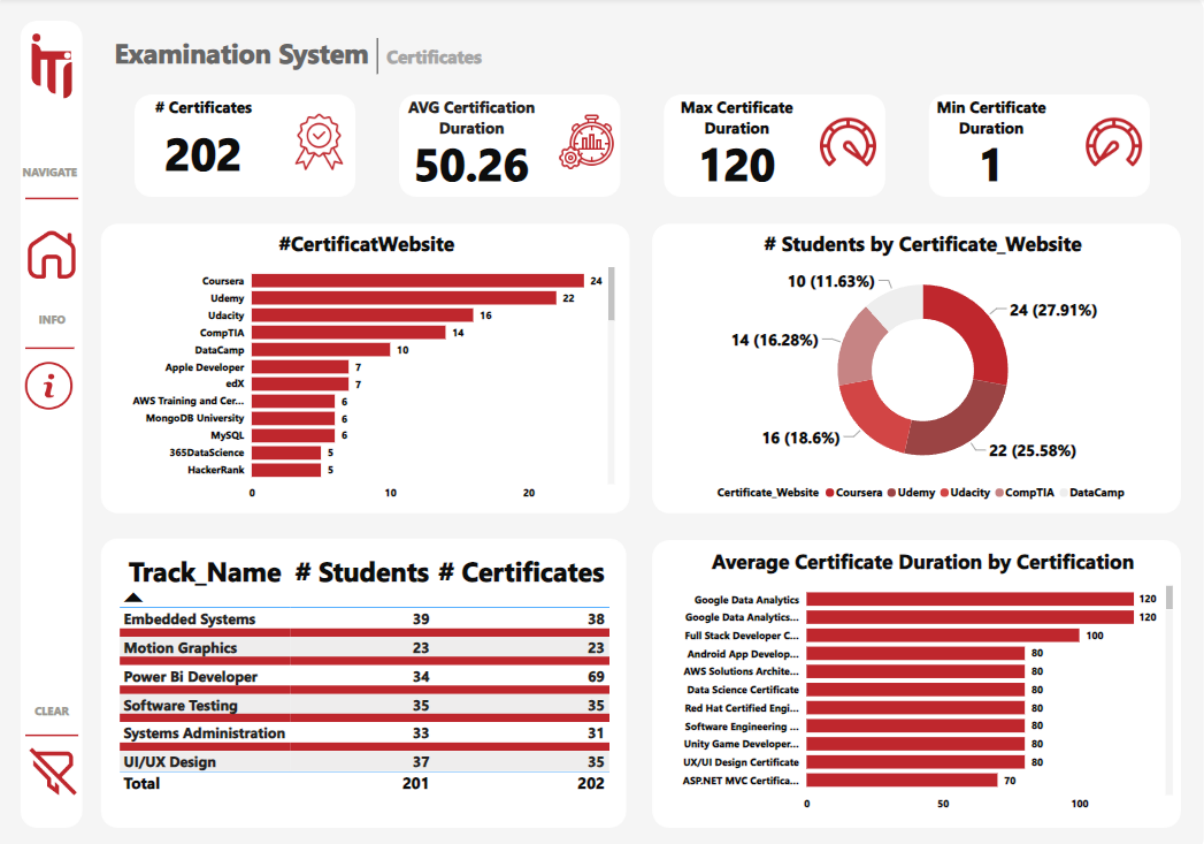
Examination System > Security > Roles > Database Roles > public





Examination System > Security > Roles > Database Roles > public





Track_Name	# Students	# Certificates
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Software Testing	35	35
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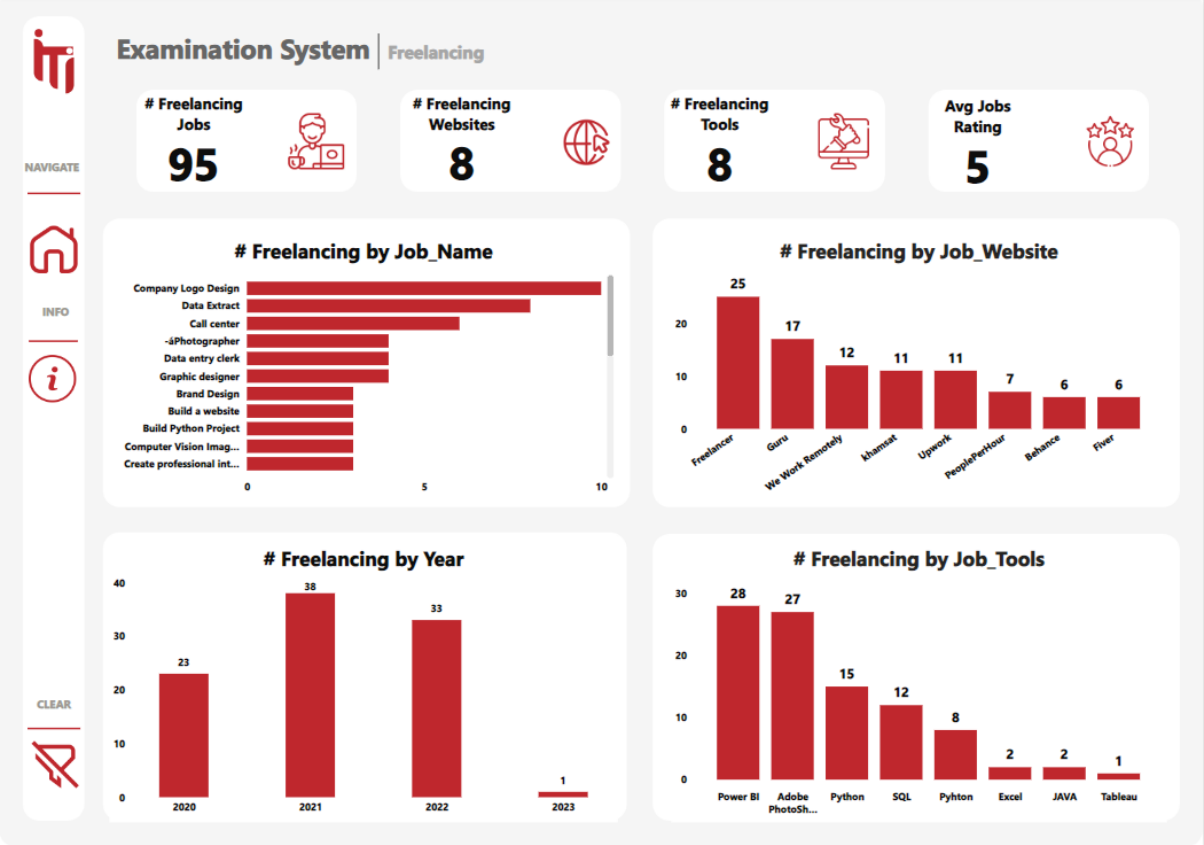
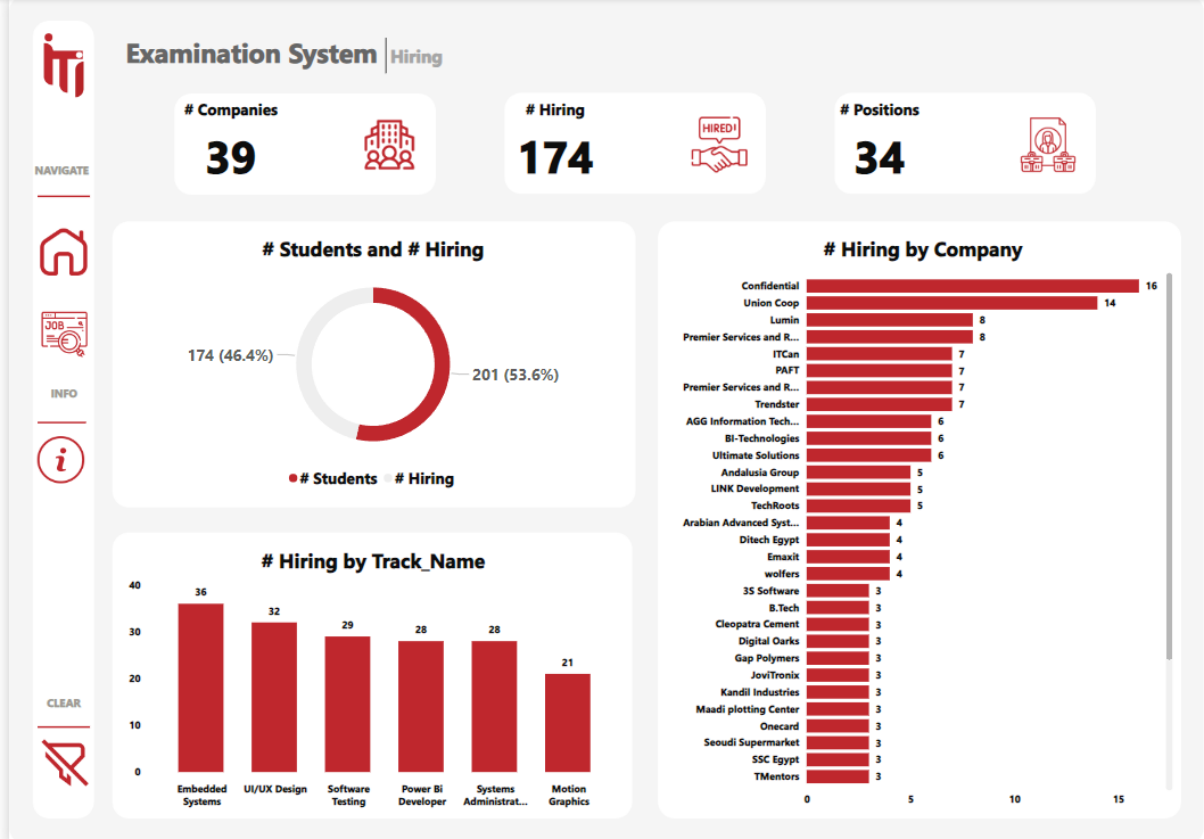
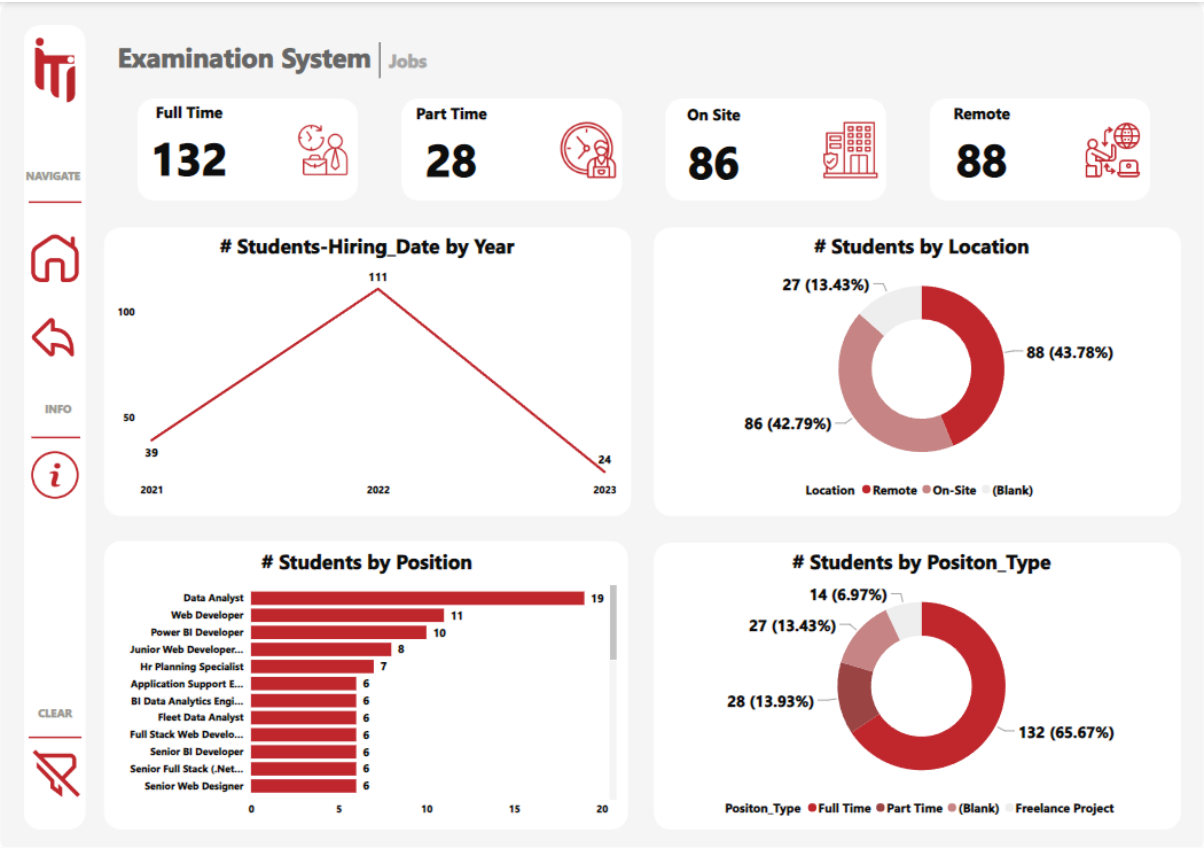
UI/UX Design	37	35
Total	201	202

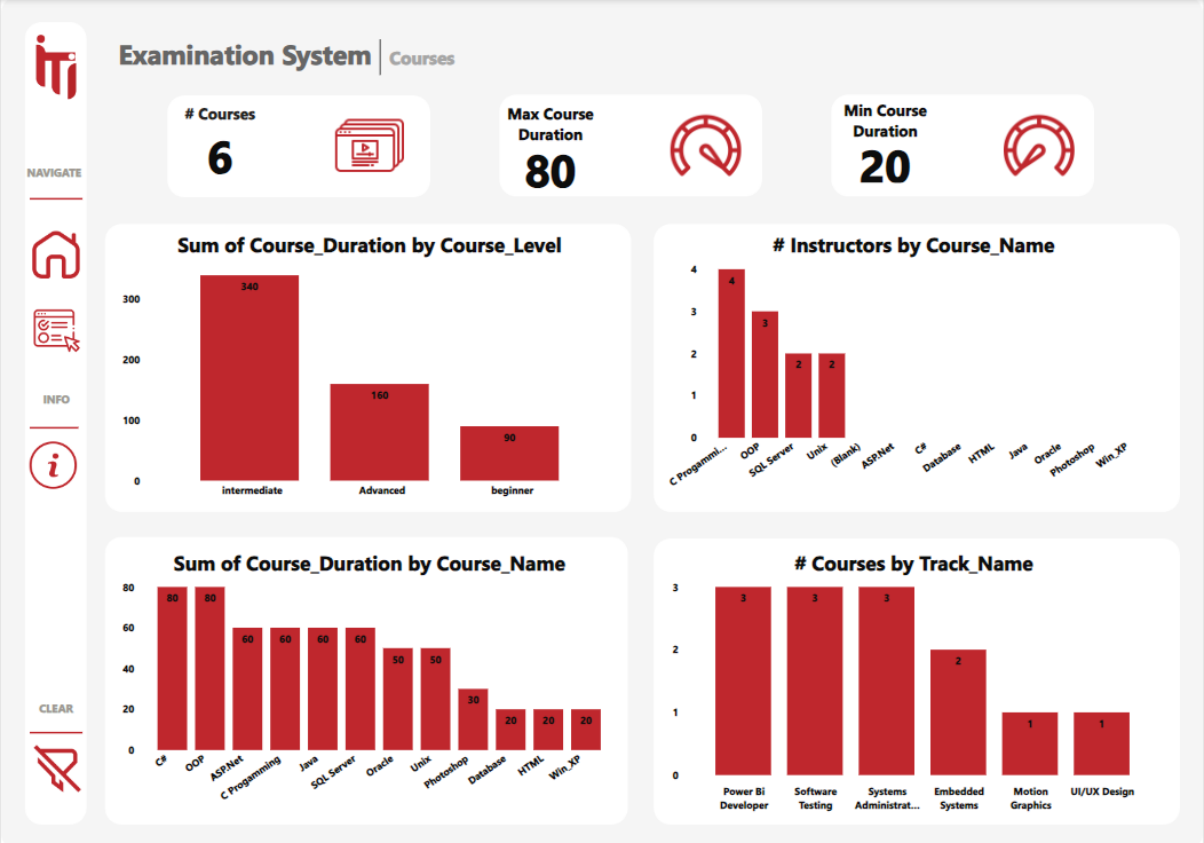
Examination System > Security > Roles > Database Roles > public



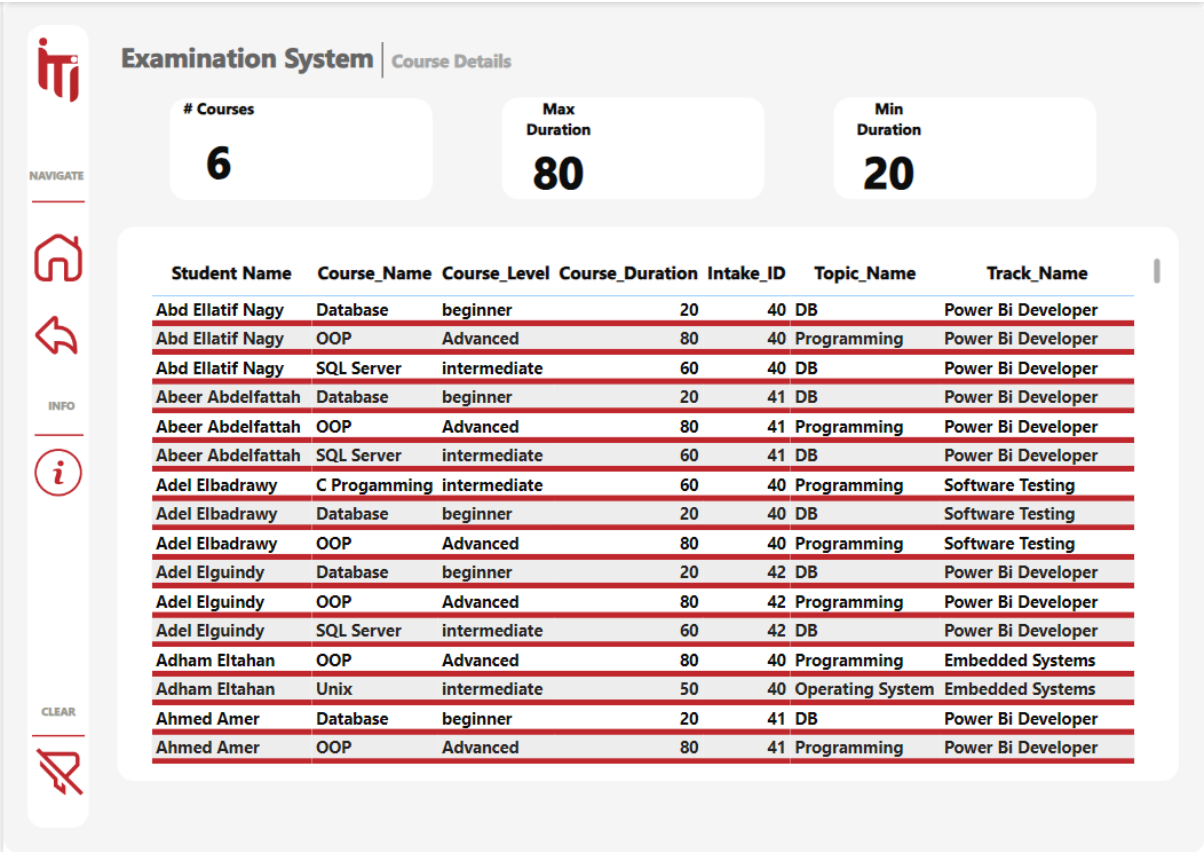


Examination System > Security > Roles > Database Roles > public





Examination System > Security > Roles > Database Roles > public



Examination System | Course Details

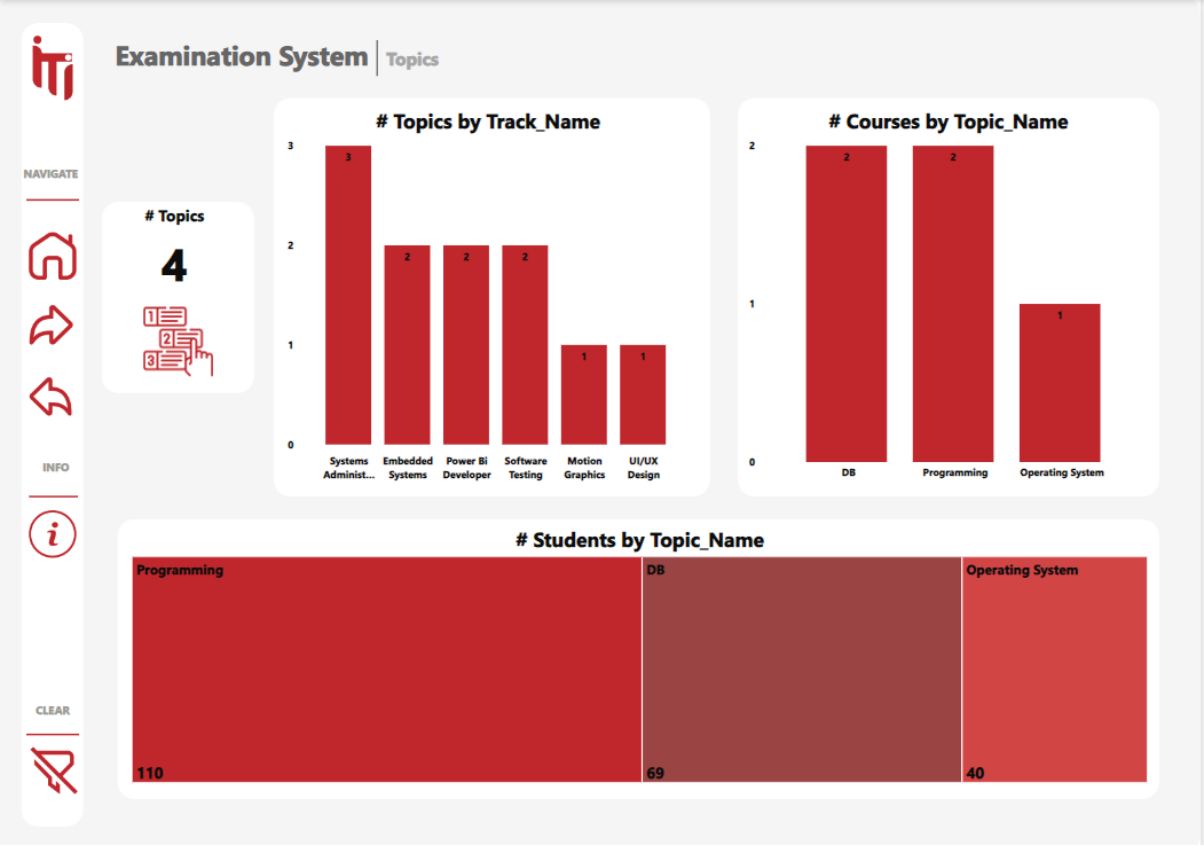
NAVIGATE

INFO

CLEAR

# Courses	Max Duration	Min Duration
6	80	20

Student Name	Course_Name	Course_Level	Course_Duration	Intake_ID	Topic_Name	Track_Name
Abd Ellatif Nagy	Database	beginner	20	40	DB	Power Bi Developer
Abd Ellatif Nagy	OOP	Advanced	80	40	Programming	Power Bi Developer
Abd Ellatif Nagy	SQL Server	intermediate	60	40	DB	Power Bi Developer
Abeer Abdelfattah	Database	beginner	20	41	DB	Power Bi Developer
Abeer Abdelfattah	OOP	Advanced	80	41	Programming	Power Bi Developer
Abeer Abdelfattah	SQL Server	intermediate	60	41	DB	Power Bi Developer
Adel Elbadrawy	C Progamming	intermediate	60	40	Programming	Software Testing
Adel Elbadrawy	Database	beginner	20	40	DB	Software Testing
Adel Elbadrawy	OOP	Advanced	80	40	Programming	Software Testing
Adel Elguindy	Database	beginner	20	42	DB	Power Bi Developer
Adel Elguindy	OOP	Advanced	80	42	Programming	Power Bi Developer
Adel Elguindy	SQL Server	intermediate	60	42	DB	Power Bi Developer
Adham Eltahan	OOP	Advanced	80	40	Programming	Embedded Systems
Adham Eltahan	Unix	intermediate	50	40	Operating System	Embedded Systems
Ahmed Amer	Database	beginner	20	41	DB	Power Bi Developer
Ahmed Amer	OOP	Advanced	80	41	Programming	Power Bi Developer



Examination System | Topics

NAVIGATE

INFO

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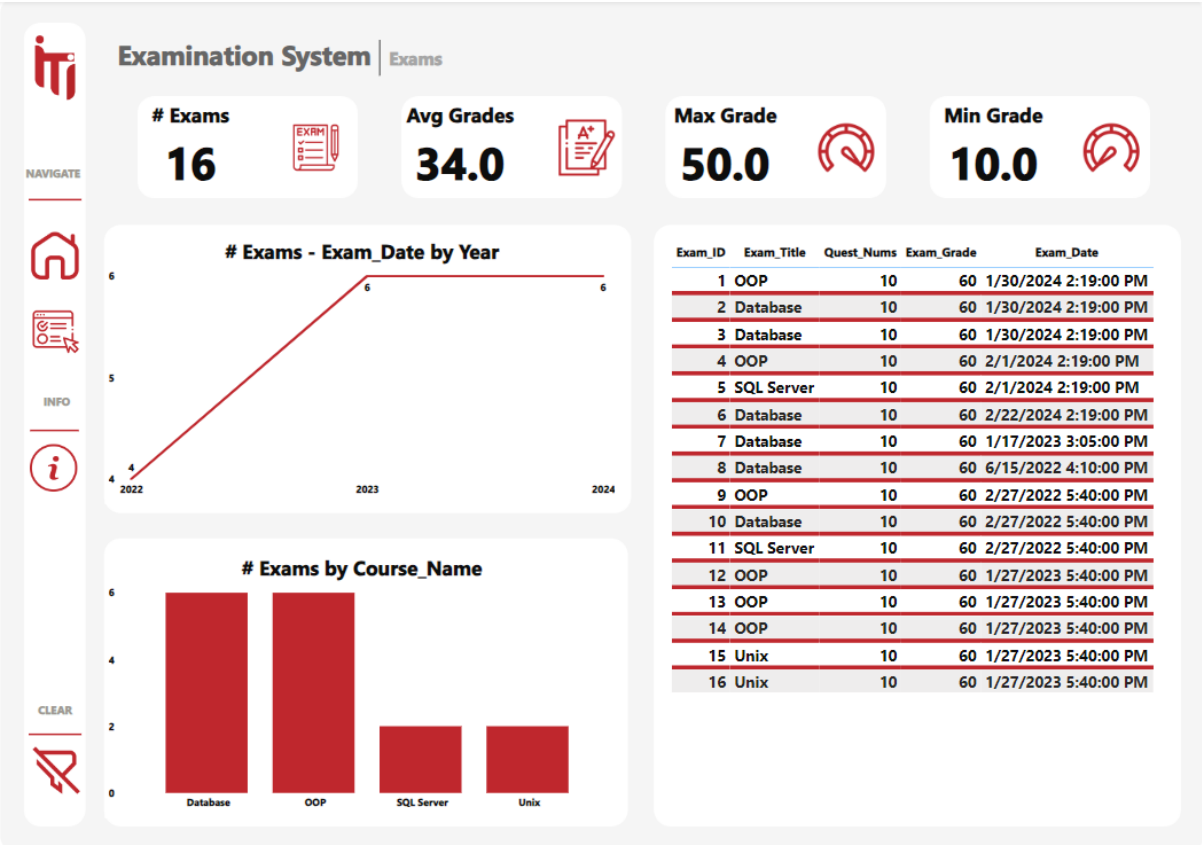
Topics
4

Examination System > Security > Roles > Database Roles > public



Exam_ID	Exam_Title	Quest_Nums	Exam_Grade	Exam_Date
1	OOP	10	60	1/30/2024 2:19:00 PM
2	Database	10	60	1/30/2024 2:19:00 PM
3	Database	10	60	1/30/2024 2:19:00 PM
4	OOP	10	60	2/1/2024 2:19:00 PM
5	SQL Server	10	60	2/1/2024 2:19:00 PM
6	Database	10	60	2/22/2024 2:19:00 PM
7	Database	10	60	1/17/2023 3:05:00 PM
8	Database	10	60	6/15/2022 4:10:00 PM
9	OOP	10	60	2/27/2022 5:40:00 PM
10	Database	10	60	2/27/2022 5:40:00 PM
11	SQL Server	10	60	2/27/2022 5:40:00 PM
12	OOP	10	60	1/27/2023 5:40:00 PM
13	OOP	10	60	1/27/2023 5:40:00 PM
14	OOP	10	60	1/27/2023 5:40:00 PM
15	Unix	10	60	1/27/2023 5:40:00 PM
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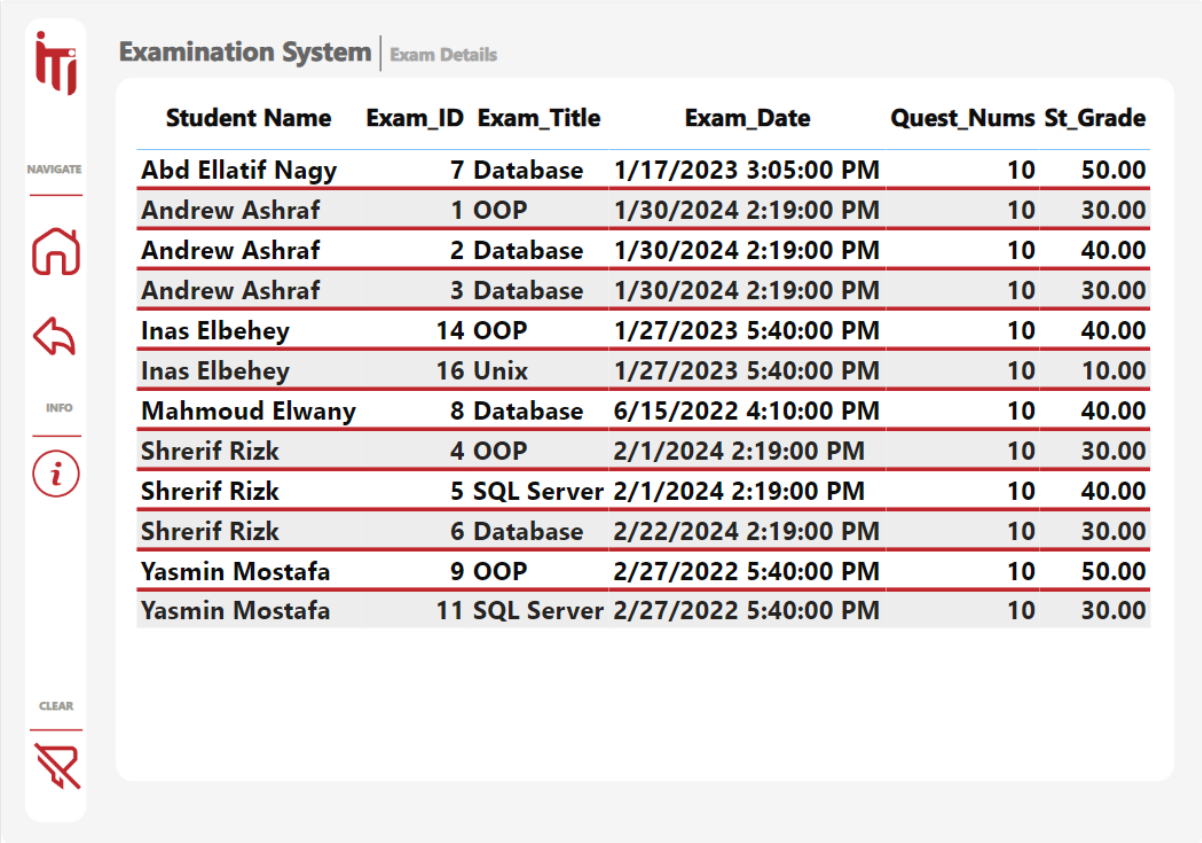
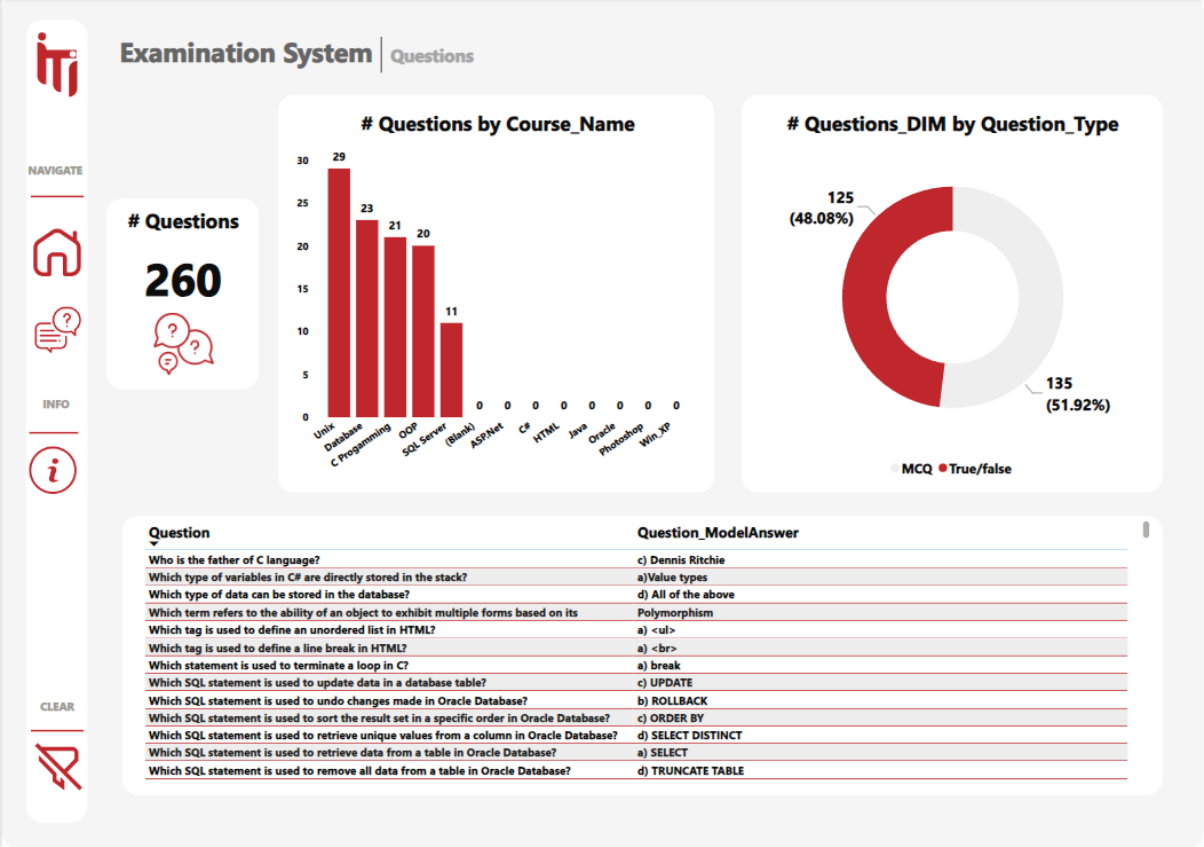
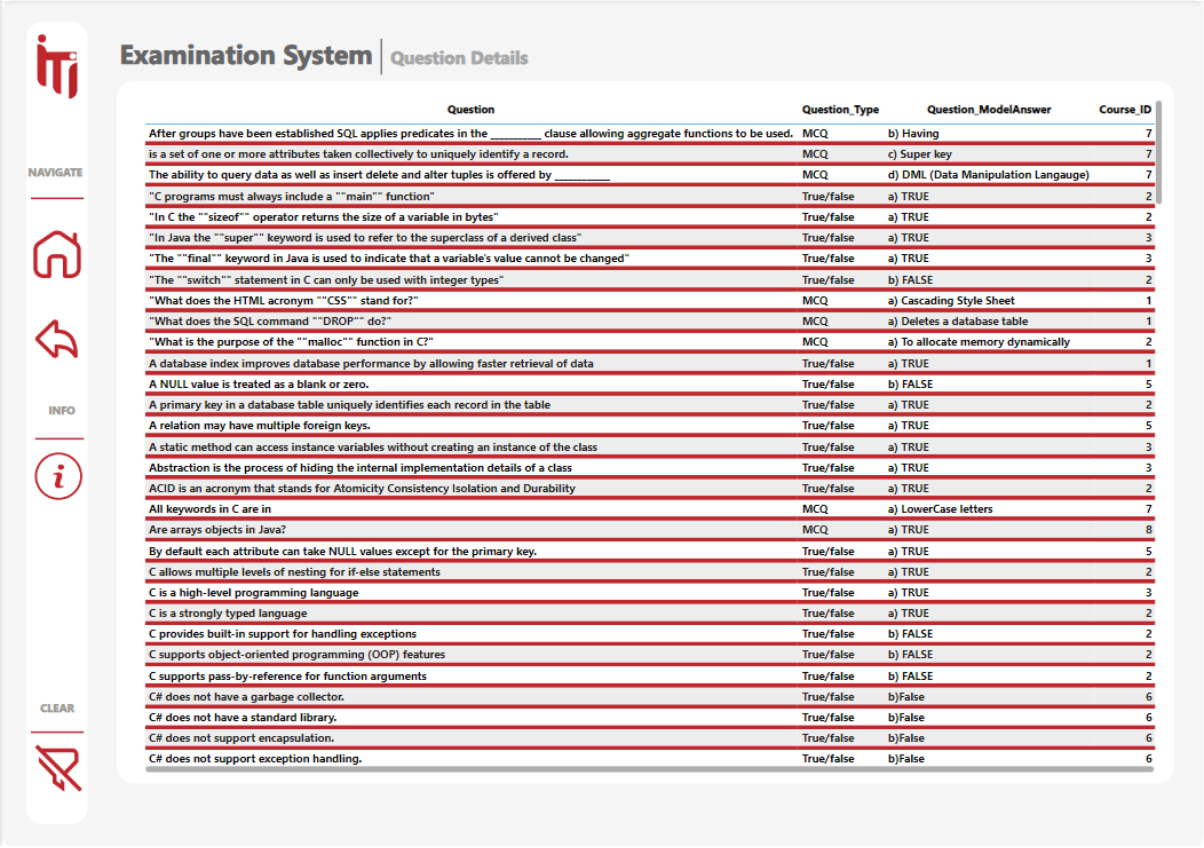


Student Name	Exam_ID	Exam_Title	Exam_Date	Quest_Nums	St_Grade
Abd Ellatif Nagy	7	Database	1/17/2023 3:05:00 PM	10	50.00
Andrew Ashraf	1	OOP	1/30/2024 2:19:00 PM	10	30.00
Andrew Ashraf	2	Database	1/30/2024 2:19:00 PM	10	40.00
Andrew Ashraf	3	Database	1/30/2024 2:19:00 PM	10	30.00
Inas Elbehey	14	OOP	1/27/2023 5:40:00 PM	10	40.00
Inas Elbehey	16	Unix	1/27/2023 5:40:00 PM	10	10.00
Mahmoud Elwany	8	Database	6/15/2022 4:10:00 PM	10	40.00
Shrerif Rizk	4	OOP	2/1/2024 2:19:00 PM	10	30.00
Shrerif Rizk	5	SQL Server	2/1/2024 2:19:00 PM	10	40.00
Shrerif Rizk	6	Database	2/22/2024 2:19:00 PM	10	30.00
Yasmin Mostafa	9	OOP	2/27/2022 5:40:00 PM	10	50.00
Yasmin Mostafa	11	SQL Server	2/27/2022 5:40:00 PM	10	30.00

Examination System > Security > Roles > Database Roles > public

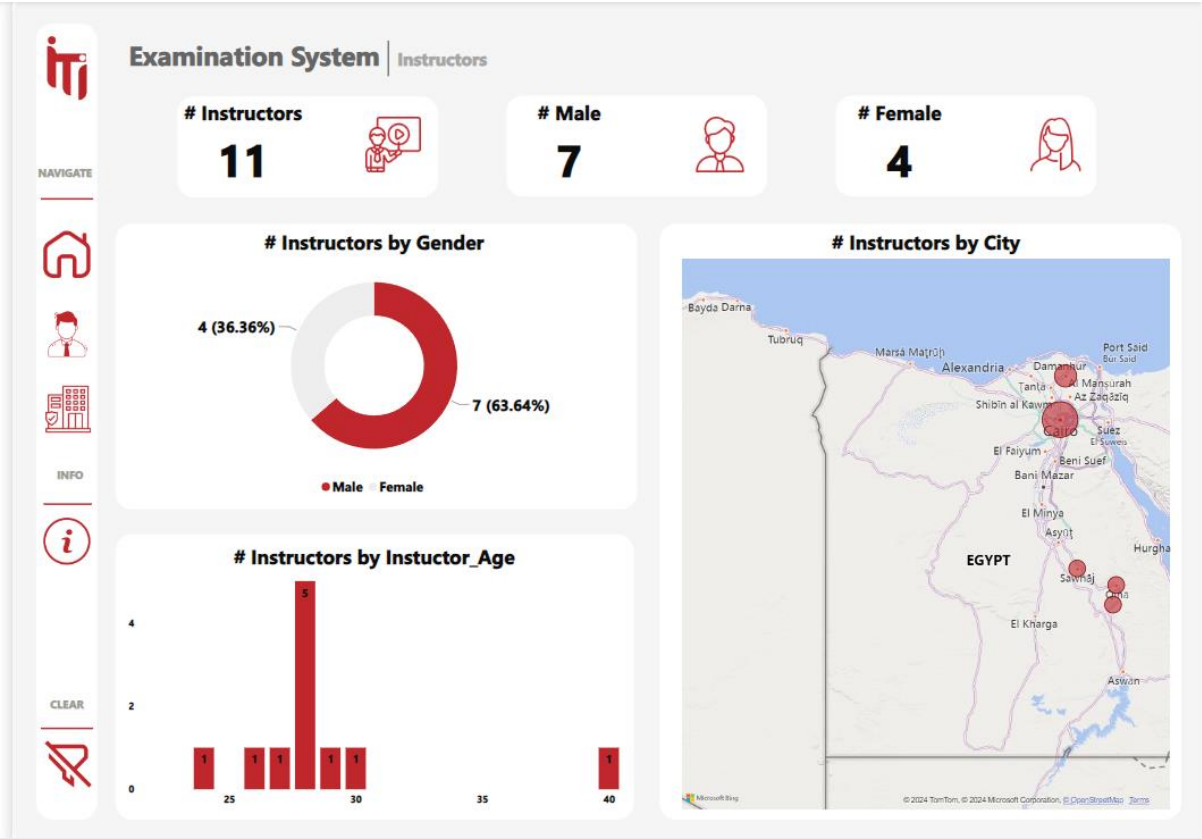


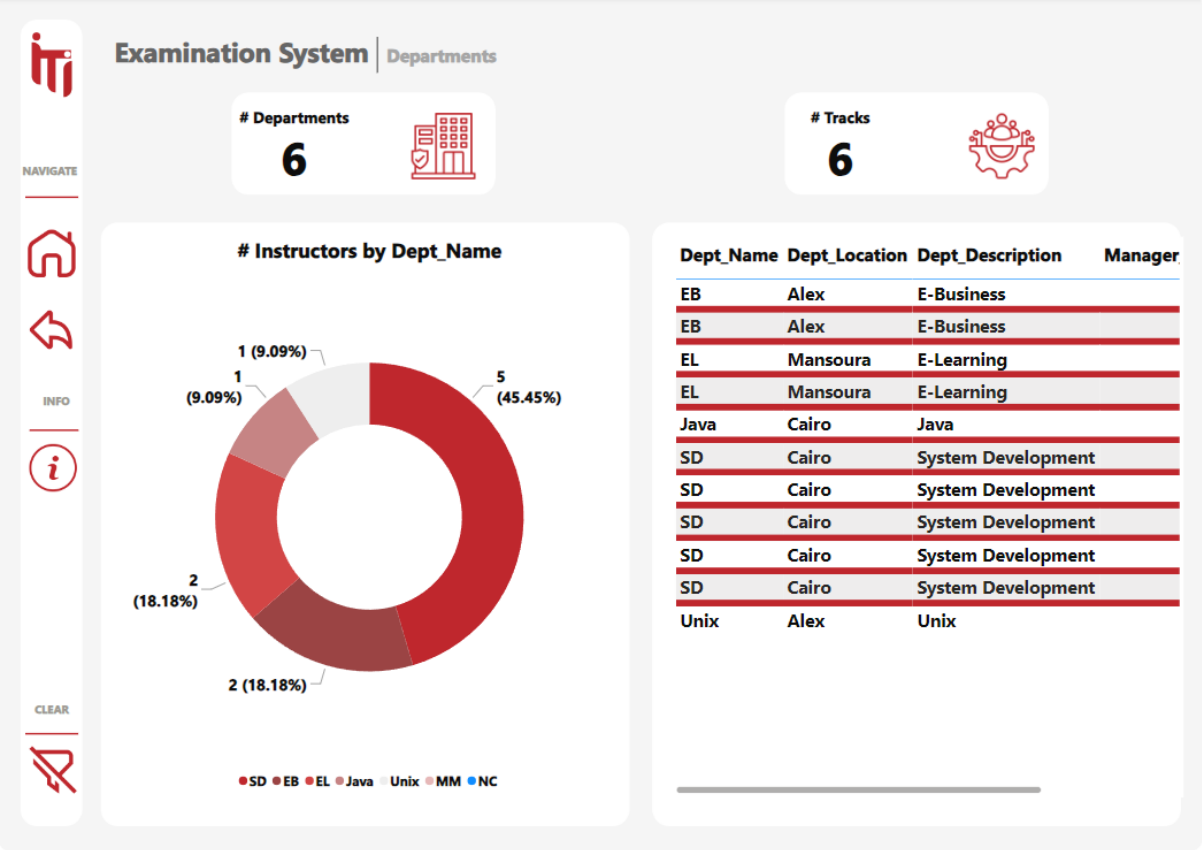
Question	Question_ModelAnswer
Who is the father of C language?	c) Dennis Ritchie
Which type of variables in C# are directly stored in the stack?	a)Value types
Which type of data can be stored in the database?	d) All of the above
Which term refers to the ability of an object to exhibit multiple forms based on its	Polymorphism
Which tag is used to define an unordered list in HTML?	a) <ul>
Which tag is used to define a line break in HTML?	a)
Which statement is used to terminate a loop in C?	a) break
Which SQL statement is used to update data in a database table?	c) UPDATE
Which SQL statement is used to undo changes made in Oracle Database?	b) ROLLBACK
Which SQL statement is used to sort the result set in a specific order in Oracle Database?	c) ORDER BY
Which SQL statement is used to retrieve unique values from a column in Oracle Database?	d) SELECT DISTINCT
Which SQL statement is used to retrieve data from a table in Oracle Database?	a) SELECT
Which SQL statement is used to remove all data from a table in Oracle Database?	d) TRUNCATE TABLE



Question	Question_Type	Question_ModelAnswer	Course_ID
After groups have been established SQL applies predicates in the _____ clause allowing aggregate functions to be used.	MCQ	b) Having	7
is a set of one or more attributes taken collectively to uniquely identify a record.	MCQ	c) Super key	7
The ability to query data as well as insert delete and alter tuples is offered by _____	MCQ	d) DML (Data Manipulation Langauge)	7
"C programs must always include a ""main"" function"	True/false	a) TRUE	2
"In C the ""sizeof"" operator returns the size of a variable in bytes"	True/false	a) TRUE	2
"In Java the ""super"" keyword is used to refer to the superclass of a derived class"	True/false	a) TRUE	3
"The ""final"" keyword in Java is used to indicate that a variable's value cannot be changed"	True/false	a) TRUE	3
"The ""switch"" statement in C can only be used with integer types"	True/false	b) FALSE	2
"What does the HTML acronym ""CSS"" stand for?"	MCQ	a) Cascading Style Sheet	1
"What does the SQL command ""DROP"" do?"	MCQ	a) Deletes a database table	1
"What is the purpose of the ""malloc"" function in C?"	MCQ	a) To allocate memory dynamically	2
A database index improves database performance by allowing faster retrieval of data	True/false	a) TRUE	1
A NULL value is treated as a blank or zero.	True/false	b) FALSE	5
A primary key in a database table uniquely identifies each record in the table	True/false	a) TRUE	2
A relation may have multiple foreign keys.	True/false	a) TRUE	5
A static method can access instance variables without creating an instance of the class	True/false	a) TRUE	3
Abstraction is the process of hiding the internal implementation details of a class	True/false	a) TRUE	3
ACID is an acronym that stands for Atomicity Consistency Isolation and Durability	True/false	a) TRUE	2
All keywords in C are in	MCQ	a) LowerCase letters	7
Are arrays objects in Java?	MCQ	a) TRUE	8
By default each attribute can take NULL values except for the primary key.	True/false	a) TRUE	5
C allows multiple levels of nesting for if-else statements	True/false	a) TRUE	2
C is a high-level programming language	True/false	a) TRUE	3
C is a strongly typed language	True/false	a) TRUE	2
C provides built-in support for handling exceptions	True/false	b) FALSE	2
C supports object-oriented programming (OOP) features	True/false	b) FALSE	2
C supports pass-by-reference for function arguments	True/false	b) FALSE	2
C# does not have a garbage collector.	True/false	b)False	6
C# does not have a standard library.	True/false	b)False	6
C# does not support encapsulation.	True/false	b)False	6
C# does not support exception handling.	True/false	b)False	6

Examination System > Security > Roles > Database Roles > public





Examination System > Security > Roles > Database Roles > public

Examination System | Instructor Details

NAVIGATE

INFO

CLEAR

Instructor Name	City	Instructor_Gender	Instuctor_Age	Salary	Hire_Date	Instructor_BirthDate
Adel Omar	qena	Male	27	5000	Friday, May 04, 2018	Monday, January 02, 1995
Ahmed Hassan	Cairo	Male	30	1000	Saturday, January 01, 2000	Friday, January 01, 1965
Amany Moahmed	Cairo	Female	28	4000	Monday, January 01, 2001	Saturday, August 19, 1972
Amena Saleh	Cairo	Female	29	9000	Wednesday, January 01, 2020	Monday, June 04, 1990
Amr Fars	Cairo	Male	38	6000	Thursday, January 01, 2009	Thursday, January 02, 197
Eman Farouk	Cairo	Female	28	7000	Monday, October 02, 2006	Wednesday, June 04, 1980
Fakry Hussien	Cairo	Male	28	1000	Tuesday, January 01, 2019	Thursday, August 19, 1982
Ghada sayed	Cairo	Female	29	6000	Tuesday, October 02, 2012	Saturday, December 06, 1
Hany Magdy	Mansoura	Male	26	2000	Wednesday, October 02, 2002	Sunday, March 18, 1973
Hussien Ahmed	Mansoura	Male	28	8000	Friday, January 01, 2010	Saturday, August 19, 1972
Khalid Ali	sohag	Male	24	5000	Wednesday, January 01, 2020	Tuesday, June 04, 1985
Reham Saleh	Cairo	Female	40	3000	Sunday, May 04, 2008	Thursday, October 15, 197
Salah Ahmed	luxor	Male	28	2000	Sunday, October 02, 2022	Sunday, December 06, 19
Saly Hussien	Cairo	Female	27	3000	Sunday, May 04, 2008	Monday, December 06, 19
Yasmin Mohamed	Cairo	Female	23	3222	Thursday, January 01, 2009	Saturday, September 14, 1

Examination System | Tracks

NAVIGATE

INFO

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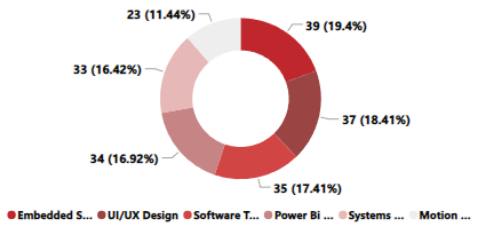
Tracks
6

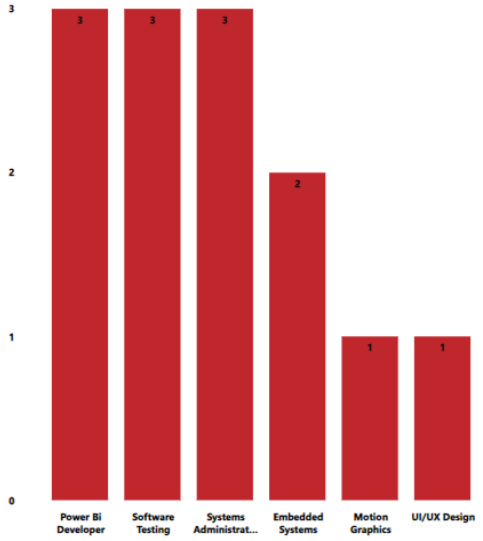
Topics
4

Courses
6

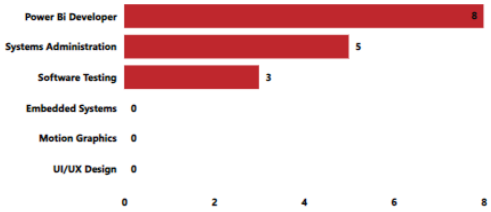
Students by Track_Name



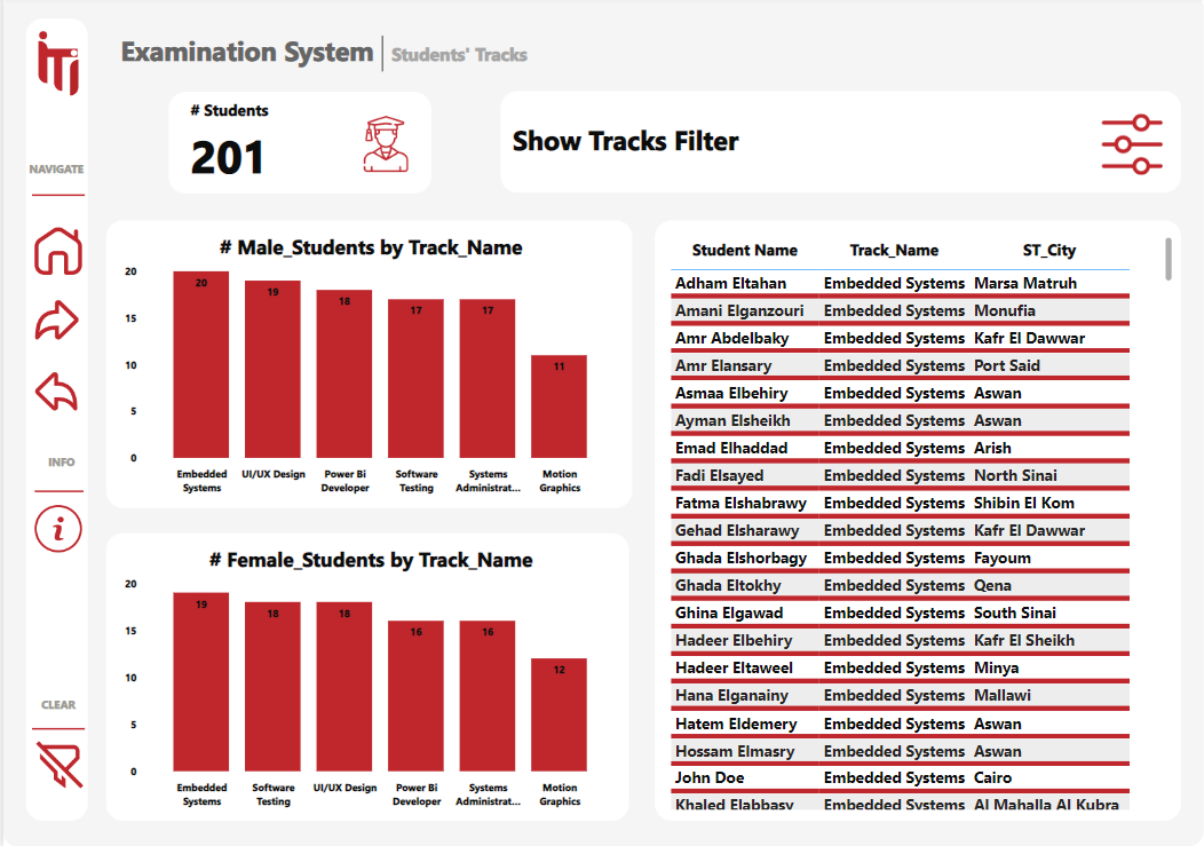
Courses by Track_Name

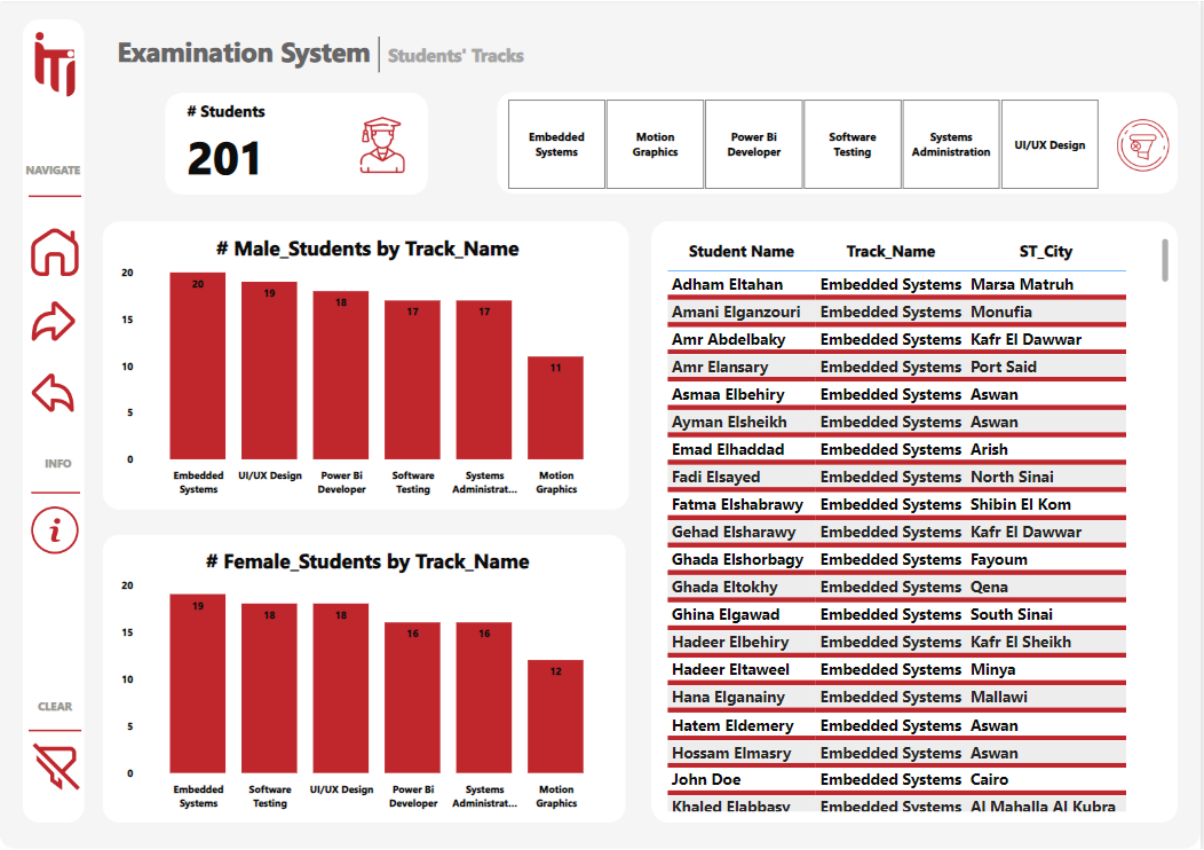


Exams by Track_Name

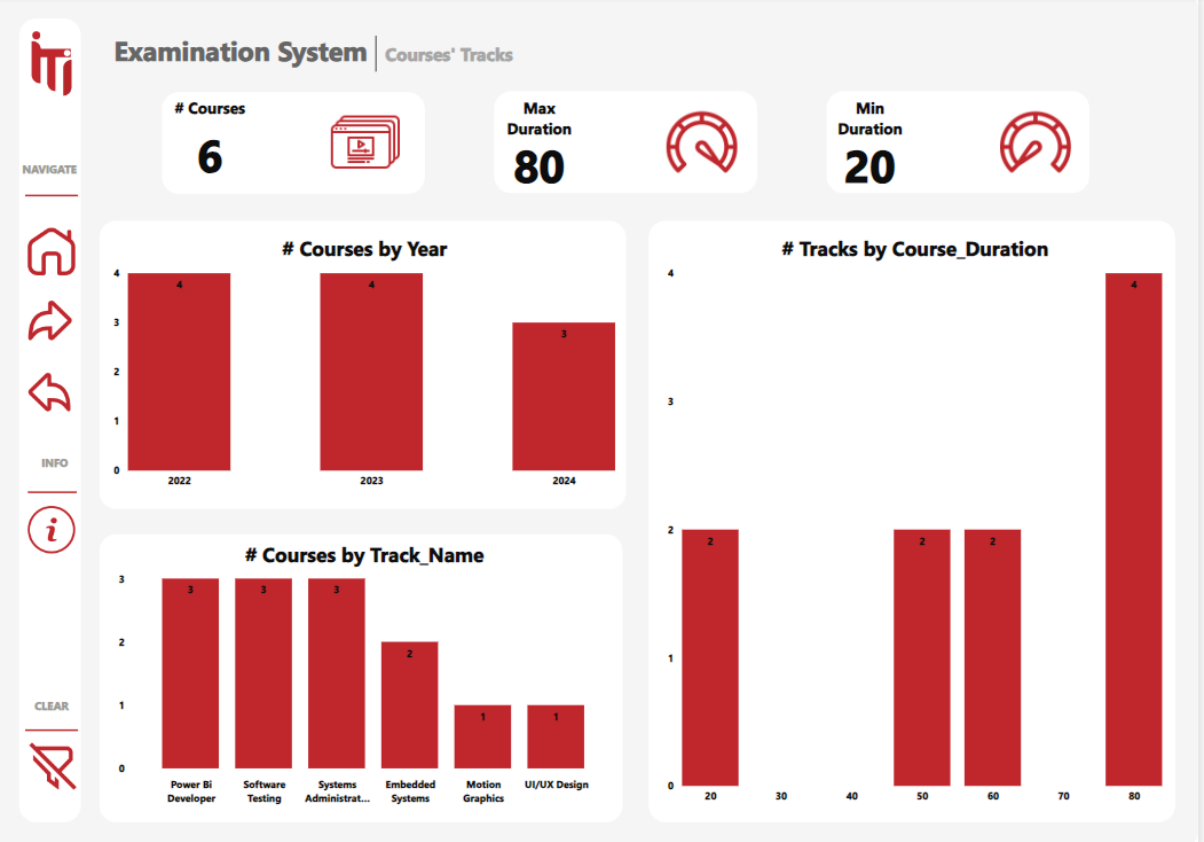


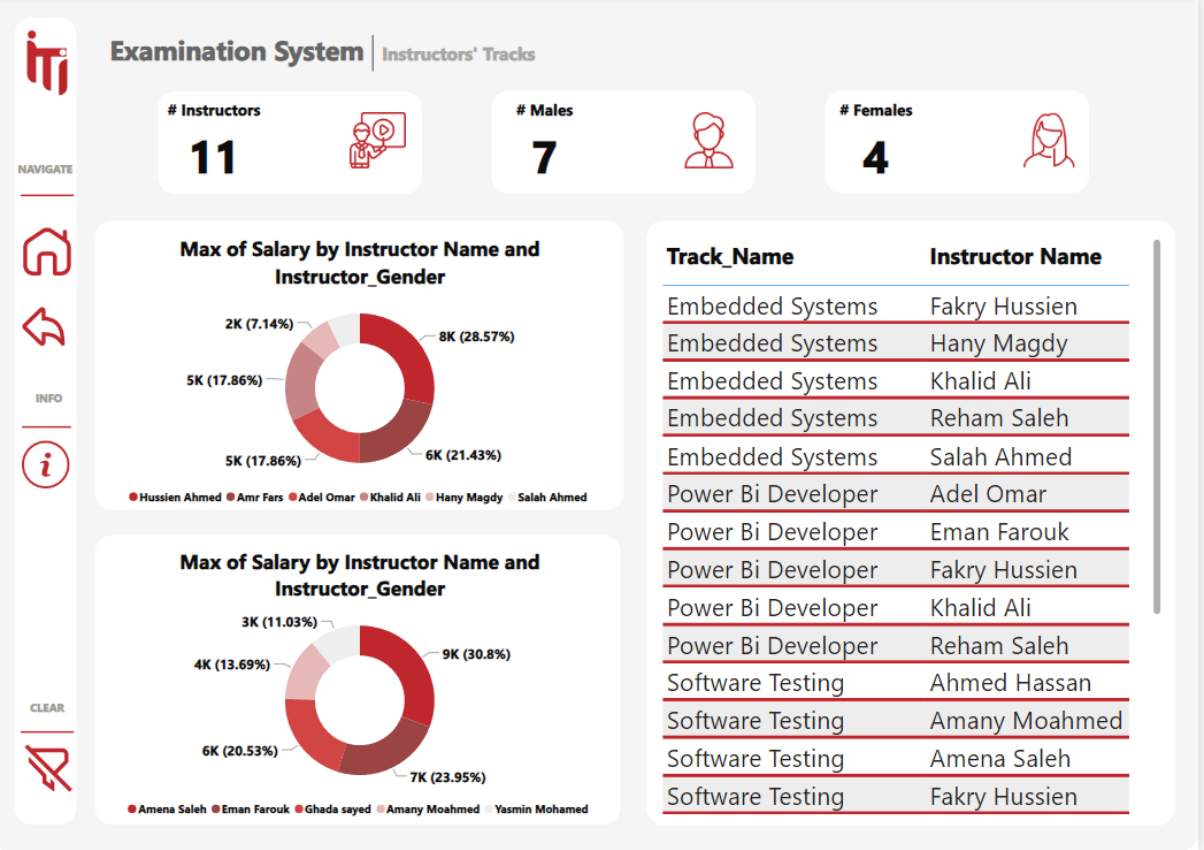
Examination System > Security > Roles > Database Roles > public





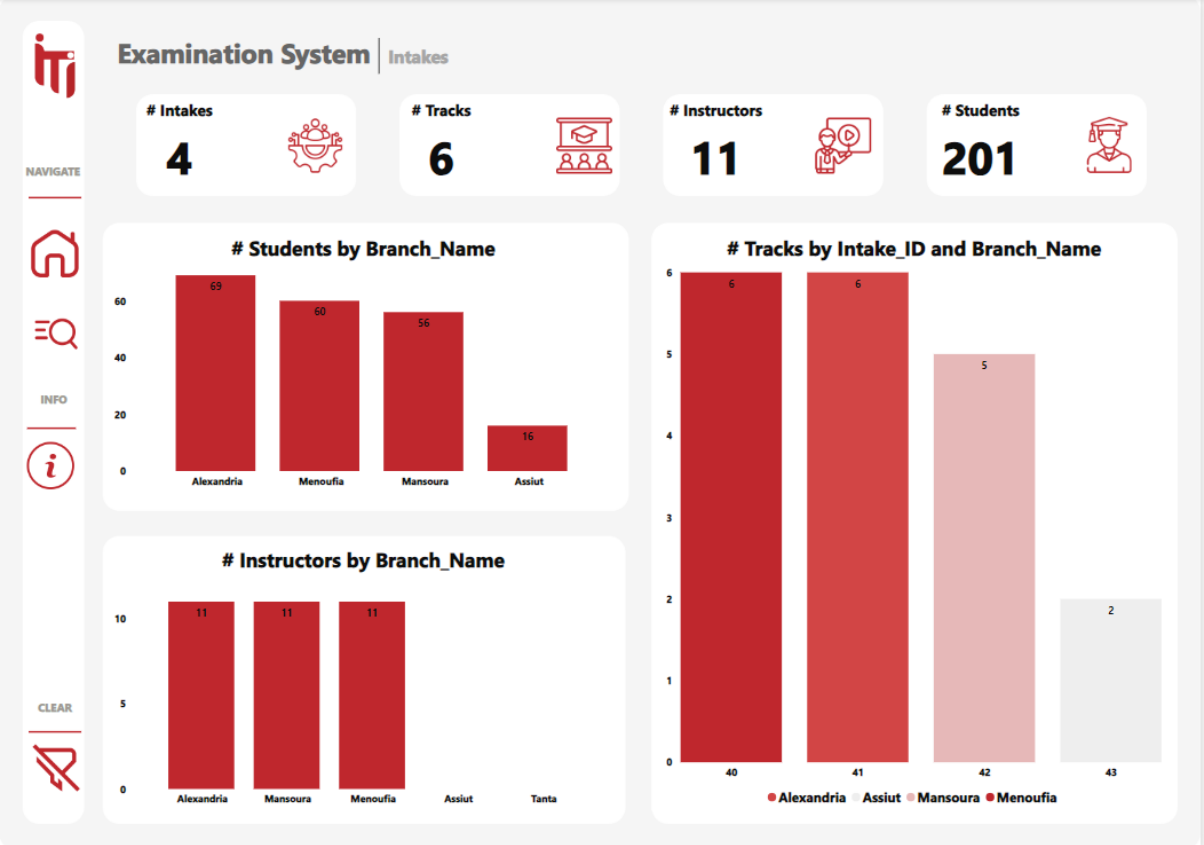
Examination System > Security > Roles > Database Roles > public

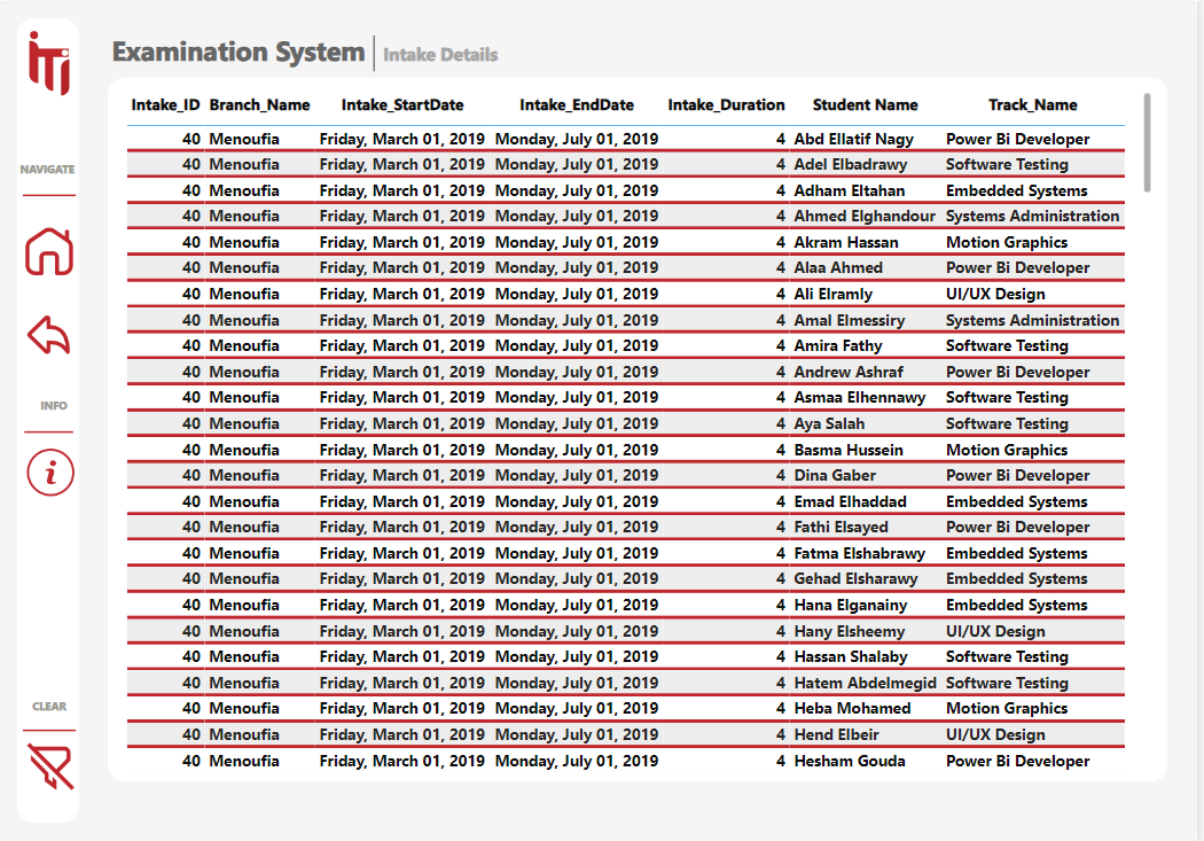




Track_Name	Instructor Name
Embedded Systems	Fakry Hussien
Embedded Systems	Hany Magdy
Embedded Systems	Khalid Ali
Embedded Systems	Reham Saleh
Embedded Systems	Salah Ahmed
Power Bi Developer	Adel Omar
Power Bi Developer	Eman Farouk
Power Bi Developer	Fakry Hussien
Power Bi Developer	Khalid Ali
Power Bi Developer	Reham Saleh
Software Testing	Ahmed Hassan
Software Testing	Amany Moahmed
Software Testing	Amena Saleh
Software Testing	Fakry Hussien

Examination System > Security > Roles > Database Roles > public





Intake_ID	Branch_Name	Intake_StartDate	Intake_EndDate	Intake_Duration	Student Name	Track_Name
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Abd Ellatif Nagy	Power Bi Developer
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Adel Elbadrawy	Software Testing
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Adham Eltahan	Embedded Systems
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Ahmed Elghandour	Systems Administration
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Akram Hassan	Motion Graphics
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Alaa Ahmed	Power Bi Developer
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Ali Elramly	UI/UX Design
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Amal Elmessiry	Systems Administration
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Amira Fathy	Software Testing
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Andrew Ashraf	Power Bi Developer
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Asmaa Elhennawy	Software Testing
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Aya Salah	Software Testing
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Basma Hussein	Motion Graphics
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Dina Gaber	Power Bi Developer
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Emad Elhaddad	Embedded Systems
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Fathi Elsayed	Power Bi Developer
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Fatma Elshabrawy	Embedded Systems
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Gehad Elsharawy	Embedded Systems
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Hana Elganainy	Embedded Systems
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Hany Elsheemy	UI/UX Design
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Hassan Shalaby	Software Testing
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Hatem Abdelmegid	Software Testing
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Heba Mohamed	Motion Graphics
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Hend Elbeir	UI/UX Design
40	Menoufia	Friday, March 01, 2019	Monday, July 01, 2019	4	Hesham Gouda	Power Bi Developer

Examination System > Security > Roles > Database Roles > public

Chapter 4: Implementation

4.1 Tables Implementation

```sql
CREATE TABLE [dbo].[Certificates](
    [Certification_ID] [int] IDENTITY(1,1) NOT NULL,
    [Certification_Name] [varchar](100) NULL,
    [Certificate_Hour] [int] NULL,
    [Certificate_Website] [varchar](50) NULL,
    [Certificate_URL] [varchar](120) NULL,
    [Certificate_Date] [date] NULL,
 CONSTRAINT [PK_Certificates] PRIMARY KEY CLUSTERED
(
    [Certification_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
GO

CREATE TABLE [dbo].[Course](
    [Course_ID] [int] NOT NULL,
    [Course_Name] [varchar](30) NULL,
    [Course_Duration] [int] NULL,
    [Course_Level] [varchar](20) NULL,
 CONSTRAINT [PK_Course] PRIMARY KEY CLUSTERED
(
    [Course_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
GO

CREATE TABLE [dbo].[Course_Topic](
    [Course_ID] [int] NOT NULL,
    [Topic_ID] [int] NOT NULL,
 CONSTRAINT [PK_Course_Topic] PRIMARY KEY CLUSTERED
(
    [Course_ID] ASC,
    [Topic_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]

CREATE TABLE [dbo].[Deptartment](
    [Dept_ID] [int] NOT NULL,
    [Dept_Name] [varchar](30) NULL,
    [Dept_Location] [varchar](20) NULL,
    [Dept_Description] [varchar](50) NULL,
    [Manager_ID] [int] NULL,
 CONSTRAINT [PK_Deptartment] PRIMARY KEY CLUSTERED
(
    [Dept_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]

CREATE TABLE [dbo].[Exam](
    [Exam_ID] [int] NOT NULL,
    [Exam_Title] [varchar](50) NULL,
    [Exam_Duration] [int] NULL,
    [Exam_Date] [datetime] NULL,
    [Quest_Nums] [int] NULL,
    [Exam_Grade] [int] NULL,
    [Course_ID] [int] NULL,
 CONSTRAINT [PK_Exam] PRIMARY KEY CLUSTERED
(
    [Exam_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]

CREATE TABLE [dbo].[Exam_Quest](
    [Exam_ID] [int] NOT NULL,
    [Question_ID] [int] NOT NULL,
 CONSTRAINT [PK_Exam_Quest] PRIMARY KEY CLUSTERED
(
    [Exam_ID] ASC,
    [Question_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]

CREATE TABLE [dbo].[Freelancing](
    [Freelanc_ID] [int] NOT NULL,
    [Job_Name] [varchar](50) NULL,
    [Job_Website] [varchar](50) NULL,
    [Job_StartDate] [date] NULL,
    [Job_Tools] [varchar](30) NULL,
    [Feedback_Rating] [int] NULL,
    [ST_ID] [int] NULL,
 CONSTRAINT [PK_Freelancing] PRIMARY KEY CLUSTERED
(
    [Freelanc_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]

CREATE TABLE [dbo].[Hiring](
    [Hiring_ID] [int] NOT NULL,
    [Position] [varchar](100) NULL,
    [Hiring_Date] [date] NULL,
    [Company] [varchar](50) NULL,
    [Location] [varchar](20) NULL,
    [Positon_Type] [varchar](20) NULL,
    [ST_ID] [int] NULL,
 CONSTRAINT [PK_Hiring] PRIMARY KEY CLUSTERED
(
    [Hiring_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
```

Examination System > Security > Roles > Database Roles > public

```sql
CREATE TABLE [dbo].[Inst_Course](
    [Course_ID] [int] NOT NULL,
    [Instructor_ID] [int] NOT NULL,
 CONSTRAINT [PK_Inst_Course] PRIMARY KEY CLUSTERED
(
    [Course_ID] ASC,
    [Instructor_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
CREATE TABLE [dbo].[Instructor](
    [Instructor_ID] [int] NOT NULL,
    [Instructor_Fname] [varchar](20) NULL,
    [Instructor_Lname] [varchar](20) NULL,
    [Instuctor_Age] [int] NULL,
    [Instructor_BirthDate] [date] NULL,
    [Instructor_Gender] [varchar](10) NULL,
    [Salary] [int] NULL,
    [City] [varchar](20) NULL,
    [Hire_Date] [date] NULL,
    [Dept_ID] [int] NULL,
 CONSTRAINT [PK_Instructor] PRIMARY KEY CLUSTERED
(
    [Instructor_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]

CREATE TABLE [dbo].[Instructor_Register](
    [Instructor_id] [int] NOT NULL,
    [Register_ID] [int] NOT NULL,
    [Ins_Insertion_Date] [date] NULL,
 CONSTRAINT [PK_Instructor_Register] PRIMARY KEY CLUSTERED
(
    [Instructor_id] ASC,
    [Register_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]

CREATE TABLE [dbo].[Intake](
    [Intake_ID] [int] NOT NULL,
    [Branch_Name] [varchar](25) NOT NULL,
    [Intake_StartDate] [date] NULL,
    [Intake_EndDate] [date] NULL,
    [Intake_Duration] [int] NULL,
 CONSTRAINT [PK_Intake] PRIMARY KEY CLUSTERED
(
    [Intake_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
CREATE TABLE [dbo].[Question](
    [Question_ID] [int] NOT NULL,
    [Question_Type] [varchar](20) NULL,
    [Question_ModelAnswer] [varchar](100) NULL,
    [Question] [varchar](500) NULL,
    [Course_ID] [int] NULL,
 CONSTRAINT [PK_Question] PRIMARY KEY CLUSTERED
(
    [Question_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]

CREATE TABLE [dbo].[Registeration](
    [Register_ID] [int] NOT NULL,
    [Email] [varchar](50) NULL,
    [UserName] [varchar](30) NULL,
    [Password] [varchar](30) NULL,
    [Usertype] [varchar](20) NULL,
 CONSTRAINT [PK__Register__E454148E2FD22A35] PRIMARY KEY CLUSTERED
(
    [Register_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]

CREATE TABLE [dbo].[Stud_Cert](
    [ST_ID] [int] NOT NULL,
    [Certificate_ID] [int] NOT NULL,
 CONSTRAINT [PK_Stud_Cert] PRIMARY KEY CLUSTERED
(
    [ST_ID] ASC,
    [Certificate_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]

CREATE TABLE [dbo].[Stud_Course](
    [St_ID] [int] NOT NULL,
    [Course_ID] [int] NOT NULL,
    [St_Grade] [float] NULL,
    [Exam_ID] [int] NULL,
 CONSTRAINT [PK_Stud_Course] PRIMARY KEY CLUSTERED
(
    [St_ID] ASC,
    [Course_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
CREATE TABLE [dbo].[Student](
    [ST_ID] [int] NOT NULL,
    [ST_SSN] [int] NULL,
    [ST_Fname] [varchar](50) NULL,
    [ST_Lname] [varchar](50) NULL,
    [ST_BirthDate] [date] NULL,
    [ST_Age] [int] NULL,
    [ST_City] [varchar](50) NULL,
    [ST_Gender] [varchar](30) NULL,
    [Intake_ID] [int] NULL,
    [Track_ID] [int] NULL,
 CONSTRAINT [PK_Student] PRIMARY KEY CLUSTERED
(
    [ST_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
```

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```sql
CREATE TABLE [dbo].[Student_Exam](
    [ST_ID] [int] NOT NULL,
    [Exam_ID] [int] NOT NULL,
    [Question_ID] [int] NOT NULL,
    [Question_Grade] [int] NULL,
    [Student_Answer] [varchar](150) NULL,
 CONSTRAINT [PK_Student_Exam] PRIMARY KEY CLUSTERED
(
    [ST_ID] ASC,
    [Exam_ID] ASC,
    [Question_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY
) ON [PRIMARY]
```

```sql
CREATE TABLE [dbo].[Student_Exam_Info](
    [ST_ID] [int] NOT NULL,
    [Exam_ID] [int] NOT NULL,
    [Exam_Time] [time](7) NULL,
    [Answered_Questions] [int] NULL,
 CONSTRAINT [PK_Student_Exam_Info] PRIMARY KEY CLUSTERED
(
    [ST_ID] ASC,
    [Exam_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
```

```sql
CREATE TABLE [dbo].[Student_Register](
    [Register_ID] [int] NOT NULL,
    [St_ID] [int] NOT NULL,
    [St_Insertion_Date] [date] NULL,
 CONSTRAINT [PK__Student___E454148E6050446F] PRIMARY KEY CLUSTERED
(
    [Register_ID] ASC,
    [St_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
```

```sql
CREATE TABLE [dbo].[Topic](
    [Topic_ID] [int] NOT NULL,
    [Topic_Name] [varchar](50) NULL,
 CONSTRAINT [PK_Topic] PRIMARY KEY CLUSTERED
(
    [Topic_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
```

```sql
CREATE TABLE [dbo].[Track](
    [Track_ID] [int] IDENTITY(1,1) NOT NULL,
    [Track_Name] [varchar](50) NULL,
    [Track_Titles] [varchar](50) NULL,
    [Supervisor_ID] [int] NULL,
 CONSTRAINT [PK_Track] PRIMARY KEY CLUSTERED
(
    [Track_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
```

```sql
CREATE TABLE [dbo].[Track_Course](
    [Track_ID] [int] NOT NULL,
    [Course_ID] [int] NOT NULL,
 CONSTRAINT [PK_Track_Course] PRIMARY KEY CLUSTERED
(
    [Track_ID] ASC,
    [Course_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
```

Chapter 5: Testing

5.1 Examination Test

Examination System > Security > Roles > Database Roles > public

ITI Examination System

Create Exam

Student ID:
2
Exam Title:
OOP
Exam Duration:
60
Exam Date:
02/19/2024 08:10 PM
Number of Questions:
10
Exam Grade:
50
Course ID:
1
True/False Questions:
5
Multiple Choice Questions:
5

OOP
Exam Duration:
60
Exam Date:
02/19/2024 08:10 PM
Number of Questions:
10
Exam Grade:
50
Course ID:
1
True/False Questions:
5
Multiple Choice Questions:
5

Create Exam

ITI Examination System

Exam Created Successfully

Show Exam

Examination System > Security > Roles > Database Roles > public

ITI Examination System

Exam Questions

Question: MongoDB is an example of a document-oriented NoSQL database

- (●) a) TRUE
- ( ) b) FALSE

Question: "What does the SQL command ""DROP"" do?"

- (●) a) Deletes a database table
- ( ) b) Deletes a database index
- ( ) c) Deletes a database record
- ( ) d) Deletes a database column

Question: Which of the following is a NoSQL database?

- (●) a) MySQL
- ( ) b) Oracle
- ( ) c) MongoDB
- ( ) d) PostgreSQL

Question: HTML stands for Hypertext Markup Language

- (●) a) TRUE
- ( ) a) TRUE
- (●) b) FALSE

Question: Which tag is used to define an unordered list in HTML?

- (●) a) <ul>
- ( ) b) <ol>
- ( ) c) <li>
- ( ) d) <dl>

Question: Which attribute is used to specify the target URL for a hyperlink in HTML?

- (●) a) href
- ( ) b) target
- ( ) c) src
- ( ) d) link

Question: Which tag is used to define a line break in HTML?

- ( ) a)
- ( ) b) <hr>
- (●) c) <p>
- ( ) d) <nl>

Submit Exam

ITI Examination System

Student Grades

Student ID	Grade
2	60