

Kingdom of Saudi Arabia  
Majmaah University  
Ministry of Higher Education  
College of Science Al Zulfi



المملكة العربية السعودية  
جامعة المجمعة  
وزارة التعليم العالي  
كلية العلوم بالزلفي

# Online course report

College of science Al Zulfi  
Department of Computer Science and Information

## Graduation Project

Submitted in partial fulfillment of the requirements for the award of  
Bachelor degree of the Majmaah University  
(Semester 2 , 201٩-٢٠)

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## **Abstract**

The site that we will develop will provide a great service for Course instructor as the instructor finds it difficult to use the time in the university between lecturing or determining courses or introducing students' grades or suggest improvements, many jobs and not enough time to complete

The system we will develop will solve all the problems experienced by instructor , department managers and students

This system will help Course instructor and head of department in the university administration to enter grades and deliver courses and get detailed reports from anywhere, anytime

Department directors can get from the system on-line improvements provided by course instructor

## **Acknowledgement**

It was a great opportunity to gain a lot of experience in real-time projects, followed by knowing how to actually design and analyze real projects. So we would like to thank all the people who gave the opportunity to students like us. Special thanks to the Graduation Project Unit for their efforts to provide us with all the useful information and to clarify the way for students to implement all educational periods in the design of the project in real time and analysis. Moreover, we should thank all the professors for the exciting lectures that they gave which were of great benefit to all of us. We would like to express our deep gratitude to the supervisor of the graduation project, Dr. Mohammed Wajih Abu Al-Saud for his patience and guidance during our work in the completion of the project. Furthermore, it is our duty to thank all members of the Testing Committee for their generous discussions and to encourage them.

# **CHAPTER ONE: INTRODUCTION**

## **1.1 Problem Definition**

Practice traditional teaching methods and archive student data, materials and grades in papers.

Much of the time it takes to complete the teaching process at the university is lost to the teacher such as material reports - student grades

Difficulty in retrieving required reports because they need a lot of time to search the university archive.

### **1.1.1 Goals**

The main goal is to develop online course report.

He system will provide a separate course report for each course and for each department or campus location where the course is taught, even if the course is taught by the same person. Each course is completed by the course instructor at the end of each course.

# Questionnaire

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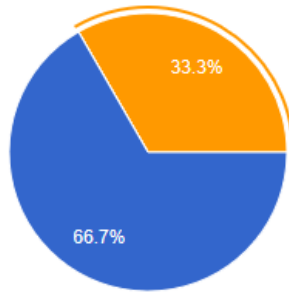
رؤيا 12



● نعم  
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هل يوجد ضرورة لتحويل تقرير المقرر الى إلكتروني

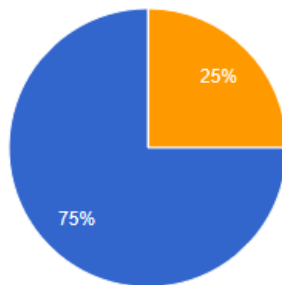
رؤيا 12



● نعم  
● لا  
● ربما

هل يؤثر هذا المشروع بشكل إيجابي على الجودة

رؤيا 12



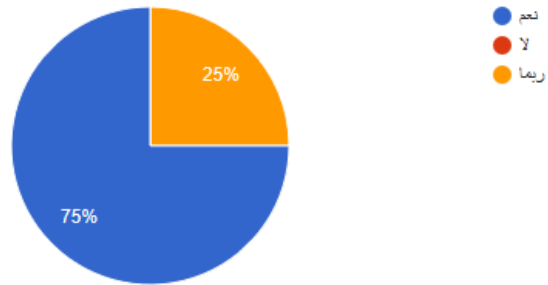
● نعم  
● لا  
● ربما

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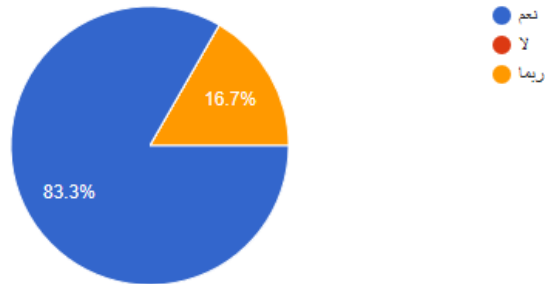
هل المشروع يسهل على أعضاء هيئة التدريس في كتابة التقرير

12 ردًا



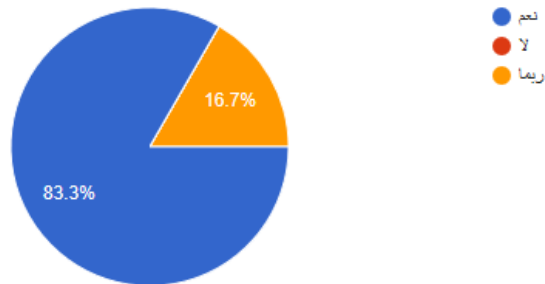
هل ميزة تحويل التقرير الى إلكتروني يسهل في التحديث والتعديل

12 ردًا



هل يسهل تقييم التقارير من قِبل لجنة الجودة او لجنة مراجعة التقارير

12 ردًا



### **1.1.2 Scope**

It will be implemented at the University

The Course Report online system will address this functions:

- Course Identification and General Information
- Course Delivery
- Student Results
- Course Learning Outcomes
- Course Quality Evaluation
- Identification Difficulties and Challenges
- Course Improvement Plan

### **1.1.2 Objectives**

The proposed system aims at achieving the following objectives.

- Transforming Process Basic processes of courses electronically via a system that allows the course instructor to save course information.
- Facilitate the learning process to be provided by the system such as material reports - student grades - etc.
- Easily retrieve data quickly that will be stored in a huge database via Course Report System
- The possibility of backing up and retrieve data at any time

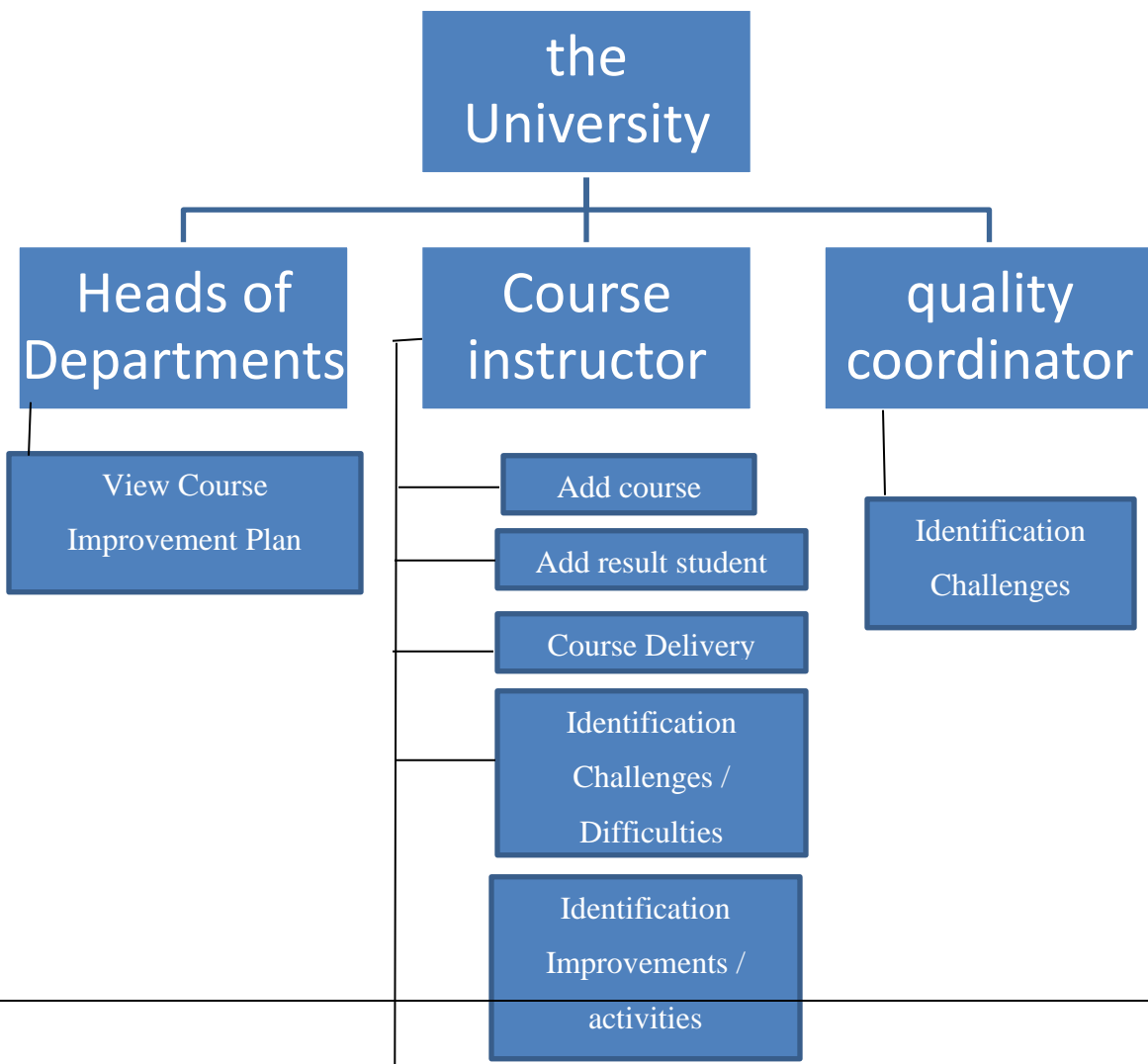
### **1.1.3 Critical Success Factors:**

The Internet has become the engine of the world and every day the Internet-based business increases

The Internet is evolving every day and constantly updating its services

Optimization of this technology will facilitate and accelerate the delivery of the work and gives correct and reliable results

The project that we will develop will work to access it from anywhere, anytime as the system works on web browsers and can be used from any computer or mobile.



—

## **1.2 General rules**

This system will be developed to work on web browsers

It is assumed that those who use this system will have a computer or a mobile phone,  
a web browser, access to the Internet

## **Chapter Two: System Analysis and Specification**

### **2.1 Introduction**

The analysis phase is concerned with how the system works, how it works and how it implements the processes, activities, procedures followed and how it works

Identify the logical entities and relationships that link the system at each level with its main and sub-entities, in order to achieve a correct understanding of the existing system and identify problems in it and work on the preparation of solutions and alternatives proposed to solve these problems in preparation for the new phase (system design phase).

### **2.2 Description of Data Flow Diagram**

#### **2.2.1 Context Diagram:**

This data-flow diagram of (the online course report System) shows the system boundaries, external entities that interact with the system, and the major information flows between the entities and the system.

### 2.2.3 Overview diagram (level 0)

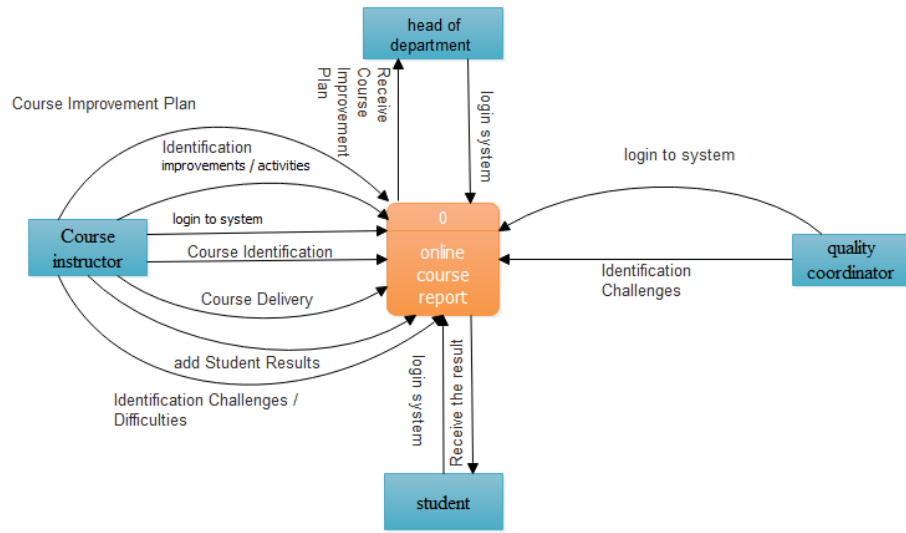


Figure 0.1 Dataflow diagram

### 2.2.4 Detailed DFDs:

This diagram illustrates the movement of data between external entities and the processes and data stores within a system.

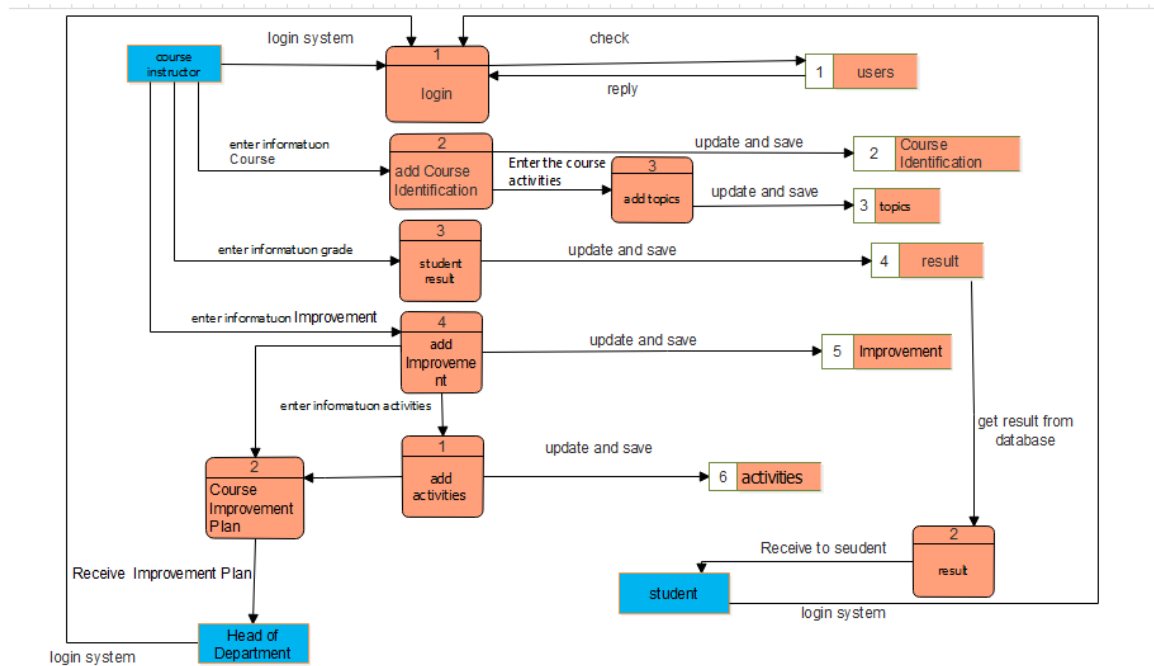


Figure 0.1 Dataflow diagram



## **2.3 Data Modeling**

### **2.3.1 Entity Relationship Diagram (ERD)**

An entity relationship diagram is an abstract way of describing the system's database. It includes a graphical representation of the entities, associations, and data for the system.

### **2.3.2 Description of Entities**

1. Course instructor: Stores the course teacher information such as number and name
2. Student: Stores student-specific information such as number, name, and address.
3. Department: Stores Department information.
4. Course identification: Stores course information such as number, name, and teacher.
5. Topic: Stores topics for each course
6. Improvement: Stores the improvements that must be added to the courses
7. Activity: Stores special activities for each improvement

### **2.3.3 Description of relations:**

#### **2.3.3.1 Student- Course identification Relationship**

This is a many-to-many relationship in which a students can enroll more courses  
identification

#### **2.3.3.2 Course instructor- Course identification Relationship**

This is a one-to-many relationship in which a Course instructor can teach more courses  
identification

#### **2.3.3.3 Department- Student Relationship**

This is a one-to-many relationship which a Department has more Student.

#### 2.3.3.4 Course identification - Topic Relationship

This is a one-to-many relationship which a Course identification has more Topic.

#### 2.3.3.5 Course identification - Improvement Relationship

This is a one-to-many relationship which a Course identification has more Improvement.

#### 2.3.3.6 Improvement - Activity Relationship

This is a one-to-many relationship which a Improvement has more Activity.

### 2.3.4 Drawing ERD:

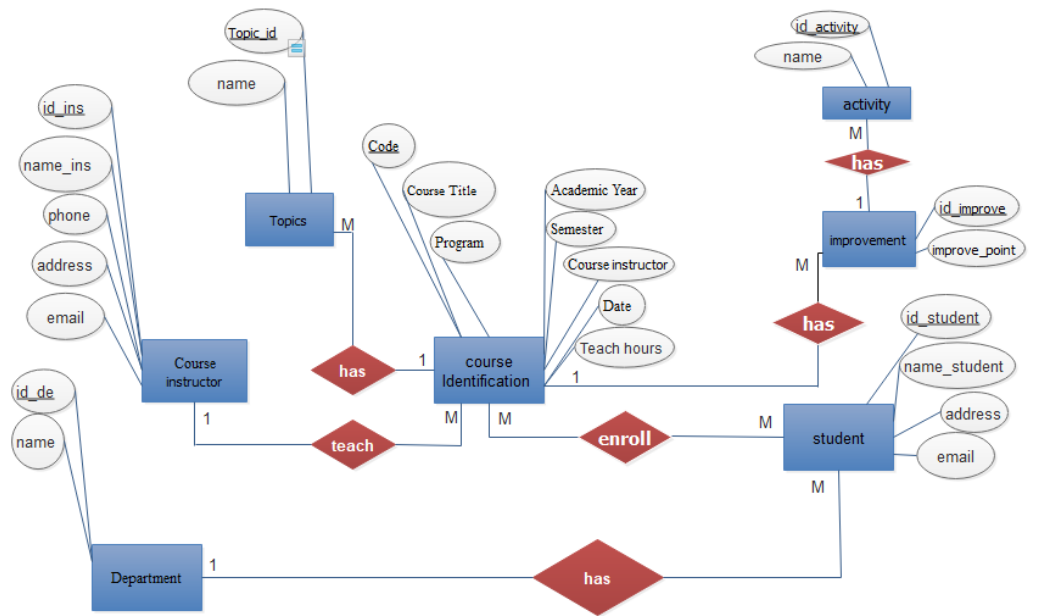


Figure 0.6 ER diagram

## 2.5 Use case Diagram

### 2.5.1 Definition:

Use Case diagrams show the various activities the users can perform on the system. The System is something that performs a function. They model the dynamic aspects of the system. It provides a user's perspective of the system.

### 2.5.2 General use case diagram

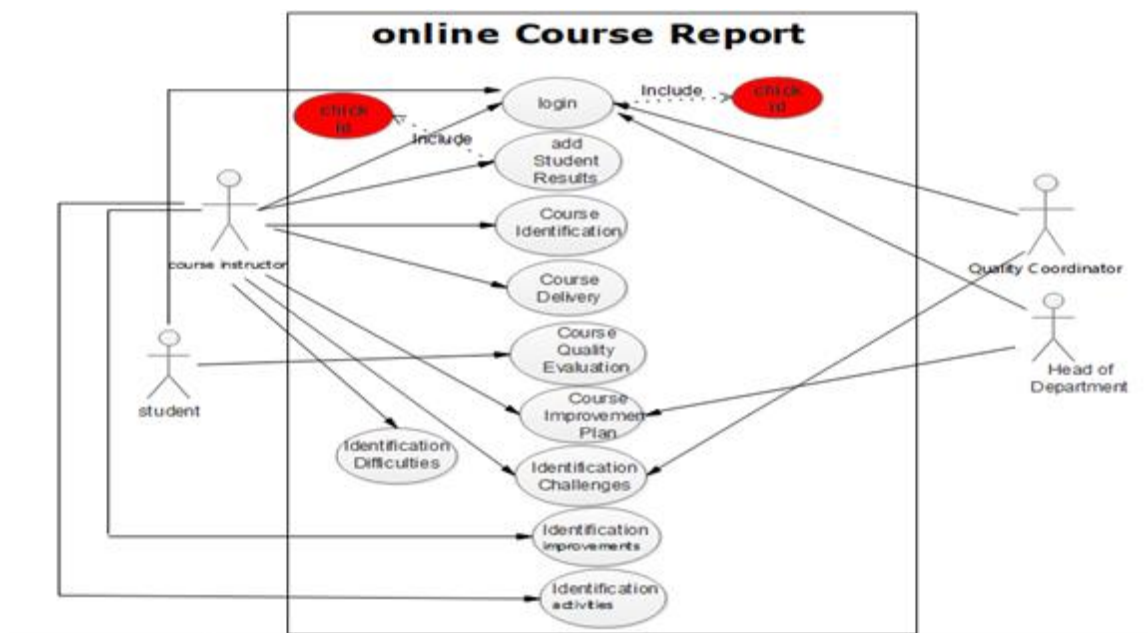


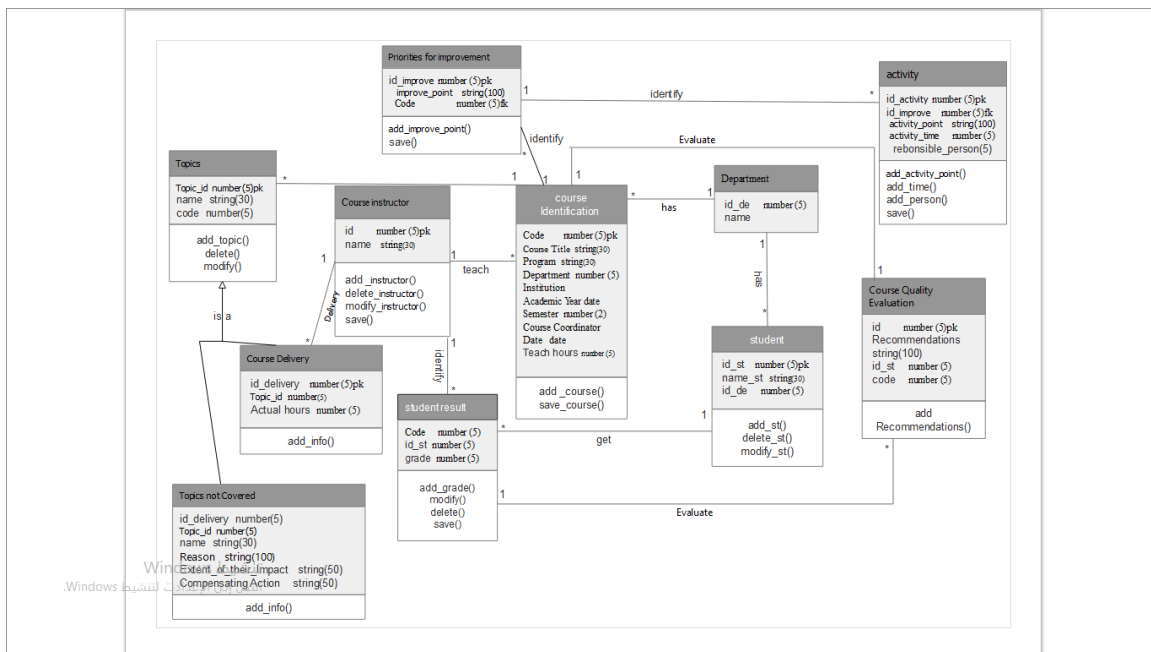
Figure 0.8 General use case diagram

## 2.5 Class Diagram

### 2.5.1 Definition:

The following diagram shows the static view of online course report system which shows a collection of classes, interfaces, associations, collaborations and constraints used in this system.

### 2.5.2 General class diagram



## 2.7 activity diagram

### 2.7.1 Definition:

Activity diagram is defined as a UML diagram that focuses on the execution and flow of the behavior of a system instead of implementation. Activity diagrams consist of activities that are made up of actions which apply to behavioral modeling technology.

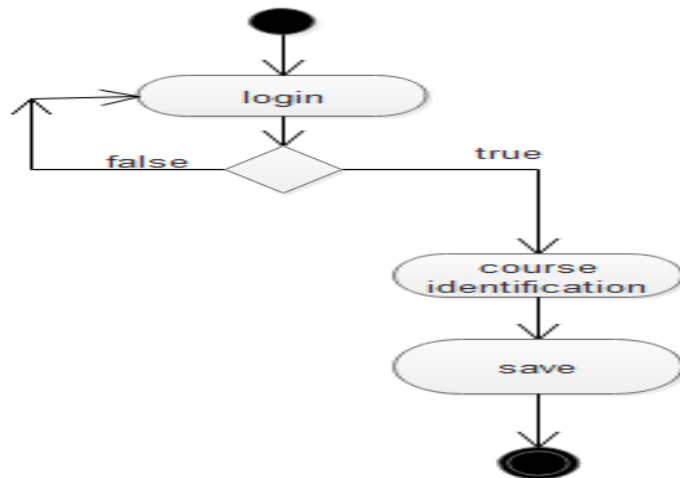


Figure 0.2 Activity diagram (Course instructor add course)

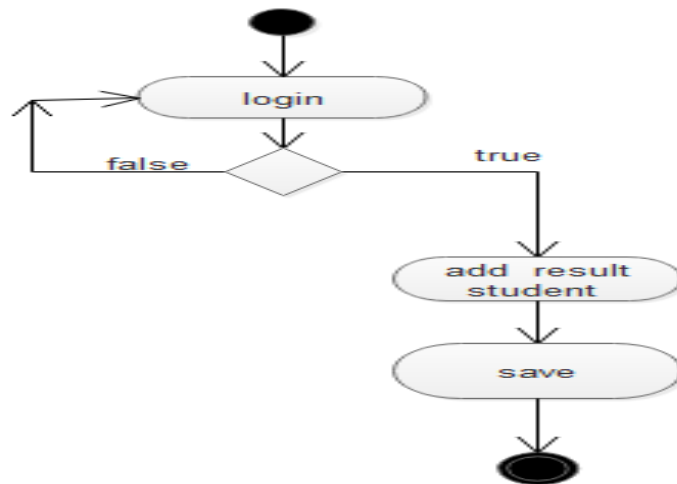


Figure 0.3 Activity diagram (Course instructor add result student)

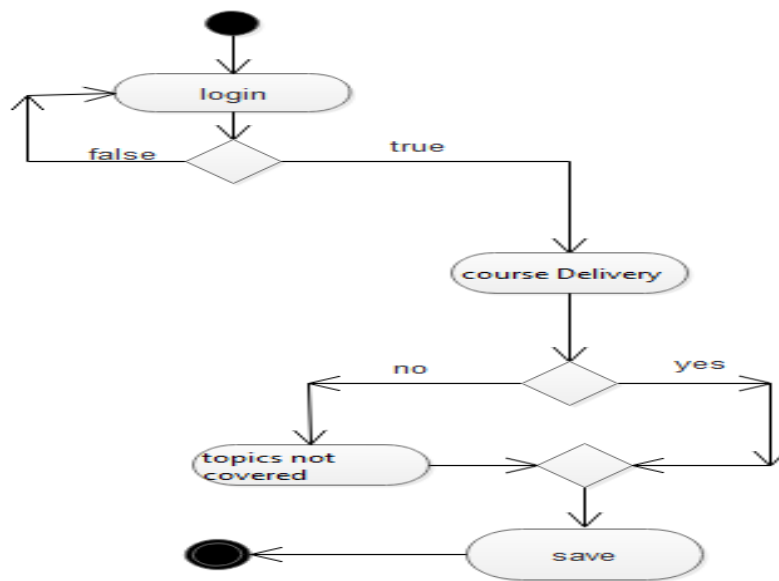


Figure 0.4 Activity diagram (teacher delivery topics)

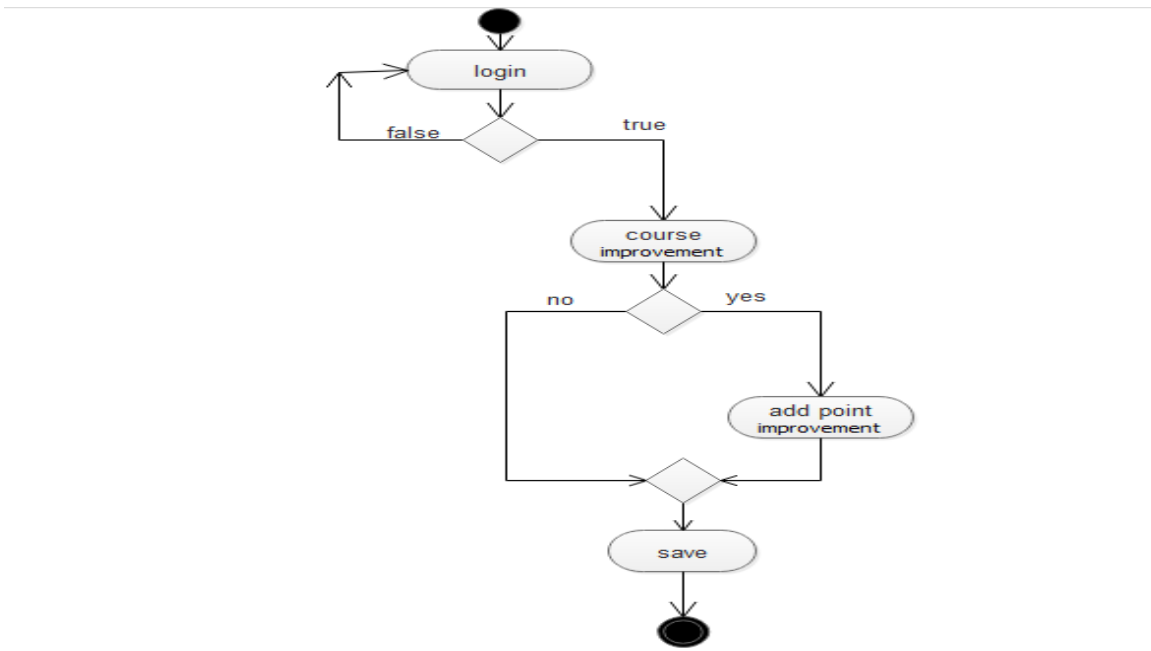


Figure 0.5 Activity diagram (Course instructor add improvement)

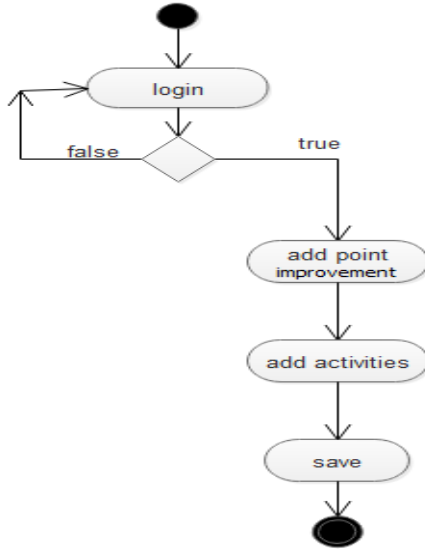


Figure 0.6 Activity diagram (Course instructor add activities)



## **2.9 Conclusion**

In this chapter, analyze the proposed system and draw the UML diagrams including data flow diagrams, use case diagrams, activity diagrams, class diagram and ER diagram.

This chapter also contained activity diagrams.

## **Chapter 3: System Design**

### **3.1 Description of procedures and functions:**

#### **3.1.1 Course instructor:**

3.1.1.1 The Course instructor login to the system

3.1.1.2 Course instructor enters new Course information

3.1.1.3 Course instructor enters students' grades

3.1.1.4 Course instructor enters improvements and activities

3.1.1.5 Course instructor prepares course improvement plan

#### **3.1.2 head of department:**

3.1.2.1 The head of department login to the system

3.1.2.2 head of department view Course Improvement Plan

#### **3.1.3 head of department:**

3.1.3.1 The student login to the system

3.1.3.2 The student view result

### **3.1.4 quality coordinator:**

3.1.4.1 The quality coordinator login to the system

3.1.4.2 The quality coordinator Identification Challenges

### 3.2 Relation database schema:

#### 3.2.1 table and attribute:

Course Identification		
attribute	Type	Notice
Code course	Integer	Primary key
Course Title	String	
Program	String	
Academic Year	Date	
Semester	Integer	
Course instructor	Integer	Frogin key from table Course instructor
Date	Date	
Teach hours	Time	

Topics		
attribute	Type	Notice
Topic_id	Integer	Primary key
Name	String	
Code course	Integer	Frogin key from table Course Identification

student		
attribute	Type	Notice
id_student	Integer	Primary key
name_student	String	
address	String	
email	String	
Id_Department	Integer	Frogin key from table Department

Result		
attribute	Type	Notice
id_student	Integer	Frogin key from table student
Code_course	Integer	Frogin key from table Course Identification
Grade	Integer	

Course instructor		
attribute	Type	Notice
id_ins	Integer	Primary key
name_ins	String	
address	String	
email	String	
phone	Integer	

improvement		
attribute	Type	Notice
id_improve	Integer	Primary key
improve_point	String	
Code_course	Integer	Frogin key from table Course Identification

activity		
attribute	Type	Notice
id_activity	Integer	Primary key
Activite_point	String	
id_improve	Integer	Frogin key from table improvement

Department		
attribute	Type	Notice
id_deptartment	Integer	Primary key
Name_dept	String	



### 3.3 Hardware and software requirements

Application will be developed as client server application for android smartphone. In order to complete this application, we need the following tools and programming languages.

#### 3.3.1 Hardware Requirements

The specifications of the laptop that is needed to complete this project.

**Table 3.1 Hardware specifications**

CPU	Core I5
RAM	4GB
Monitor	+14”

#### 3.3.2 Software requirements

To complete this project, several programs are needed.

1. Windows 10: It is the operating system of the laptop that will be used to complete this project.



**Figure 03.4 Windows 10**

2. Microsoft Word: Microsoft Word is text editor from Microsoft Company. The Word is the most used text editor over the world. It has powerful features and tools. In this project, the Word will be used for writing the report.



**Figure 3.5 Microsoft Word**

**Figure 03.7 Photoshop**

3. Oracle database: We used Oracle databases to develop the Online Course Report project and Oracle Database is a structured collection of structured information or data usually stored in electronic format or in a computer system. The database is usually under Database Management System (DBMS) control. Together, the data and database management system together with their associated applications are referred to as a database system and are often shortened to a database only.

Data are typically formulated within the most common types of databases used today as rows and columns in a series of tables to make processing and querying data more efficient. Data can then be easily accessed, managed, modified, updated, controlled, and organized. Most databases use Composite Query Language (SQL) to write and query data.



**Figure 3.8 oracle database**

4. Oracle APEX: We used Oracle APEX to develop interfaces for this project

and Is a fast web application development tool for Oracle databases using only web browser and limited software experiences you can develop and deploy professional, fast and secure web applications.

This technology or environment is a free technology from Oracle and is present by default within the free version of Oracle databases.



**Figure 3.8** oracle apex

**6. EDRAW MAX: We used the edrawmax program to create diagrams like use Case, Class Diagram and Activity Diagram. Also create a prototype of the interfaces**



**Figure 3.9 edraw max**

### **3.5 Conclusion**

In this chapter complete the design phase, during this phase we define the procedure of the system and according to that we draw the flowchart of the system, then we designed the database schema including the description of the tables and entities and relations.

This chapter also we found the requirements tools that will be used in this system, and finally we designed the expected system interfaces.

## Chapter 4: Implementation and Testing:

4.1. Introduction

4.2. Procedures

4.3. Reports

4.4. Layouts

## User Manual

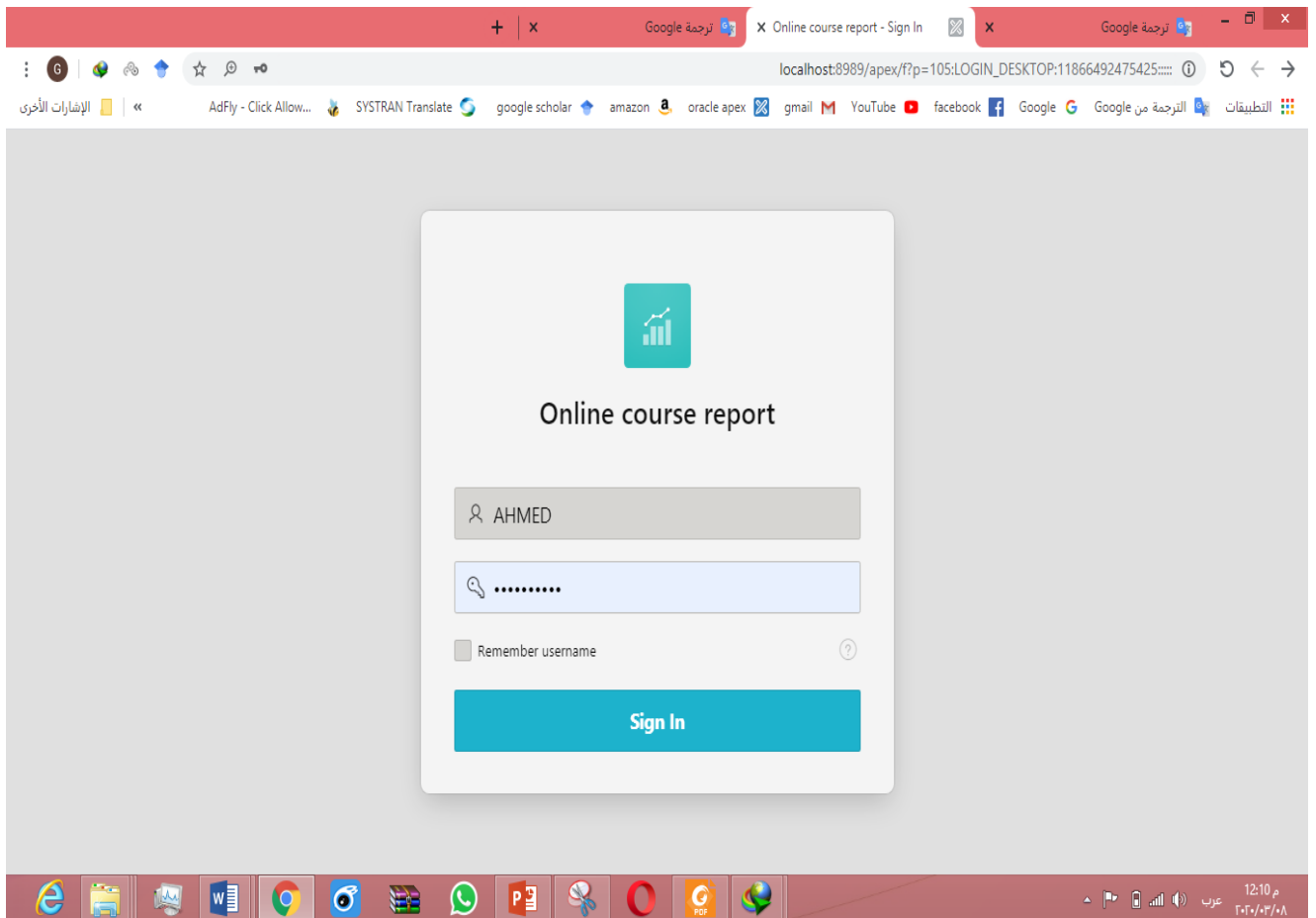
Welcome to online Course Report

Please log in to the system to be able to use the system

Implementation and Testing

### The system login process screen

Enter the login information and press the Sign button



By clicking on the side menu on the Department you can go to this page to control the data of the Department

The screenshot shows a web browser window displaying an application interface. The browser's address bar shows the URL: localhost:8989/apex/f?p=105:2:15609707138681::NO::. The application has a blue header with the text "Online course report" and a user profile icon for "ghazi". A dark sidebar on the left contains a menu with items: Home, DEPARTMENT, COURSE IDENTIFICATION, COURSE INSTRUCTOR DATA, STUDENT DATA, TOPICS, ACADEMY YEARS, and Administration. The main content area is titled "DEPARTMENT" and contains a table with three rows of department data. Each row has a checkbox, an "Id" column, and a "Name Department" column with a text input field. Below the table are buttons for "Cancel", "Delete", "Submit", and "Add". The bottom of the page shows "Release 1.0" and a system tray with various icons and the time "11:58".

<input type="checkbox"/>	Id	Name Department
<input type="checkbox"/>	1	computer science
<input type="checkbox"/>	2	Information Technology
<input type="checkbox"/>	21	information system



By clicking on the side menu on COURSE IDENTIFICATION

You can visit this page to control COURSE IDENTIFICATION data

The screenshot displays the 'COURSE IDENTIFICATION REPORT' page in an Oracle APEX application. The page features a teal header with the text 'Online course report' and a user profile 'ghazi'. A dark sidebar on the left contains navigation items: Home, DEPARTMENT, COURSE IDENTIFICATION (highlighted), COURSE INSTRUCTOR DATA, STUDENT DATA, TOPICS, ACADEMY YEARS, and Administration. The main content area is titled 'COURSE IDENTIFICATION REPORT' and contains a form with the following fields and values:

Field	Value
Code Course	E202062
Course Title	java
Program	oop
Academy Years	2020:2021
Semester	First Semester
Course Instructor	ALI
Teach Hours	52

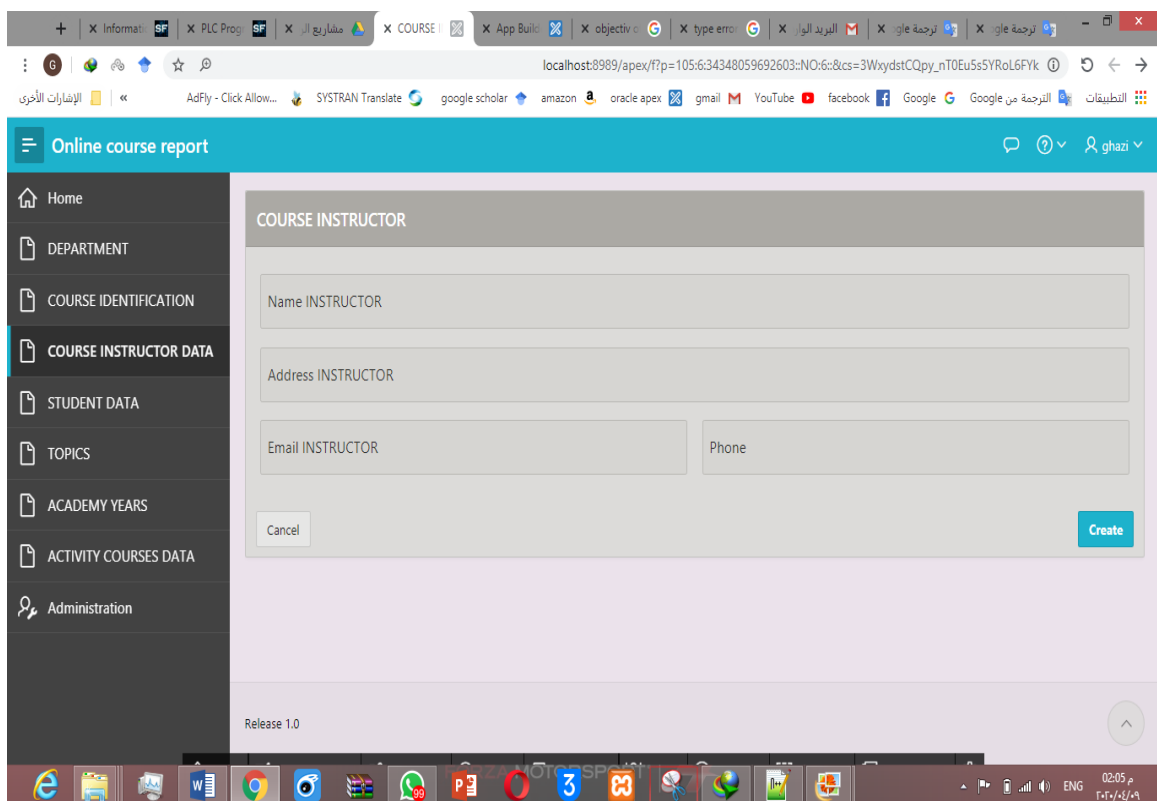
Buttons for 'Cancel', 'Delete', and 'Apply Changes' are located at the bottom of the form. The footer shows 'Release 1.0' and a system tray with various application icons and a clock showing 11:58.

By clicking on the side menu on TOPICS You can visit this page to control  
COURSE TOPICS data

The screenshot shows a web browser window with a red header bar. The browser's address bar displays the URL: localhost:8989/apex/f?p=105:11:15609707138681::NO::. The page title is "TOPICS". The main content area is titled "TOPICS" and features a "chaos Course" section with a "COURSE TITLE" dropdown menu set to "java". Below this is a table with a green header "TOPICS" and columns for "Topics Id" and "Topics Name". The table contains two rows: one with "41" and "methods", and another with "42" and "objects". At the bottom of the table, there are "Cancel", "Delete", and "Submit" buttons. The left sidebar menu includes options like "Home", "DEPARTMENT", "COURSE IDENTIFICATION", "COURSE INSTRUCTOR DATA", "STUDENT DATA", "TOPICS", "ACADEMY YEARS", and "Administration". The Windows taskbar at the bottom shows various application icons and the system tray with the time 11:59 and date 2020/03/08.

	Topics Id	Topics Name
<input type="checkbox"/>	41	methods
<input type="checkbox"/>	42	objects

When pressing the menu COURSE INSTRUCTOR DATA An interface will appear displaying the teacher data report Click Create button to add new data



## The screen to add the activities required for each course

The screenshot displays a web browser window with multiple tabs open, including 'Informati SF', 'PLC Prog SF', 'مشاريع ال...', 'ACTIVITY', 'App Build', 'objectiv', 'type erro', 'البريد ال...', 'ترجمة ااو', and 'ترجمة ااو'. The address bar shows the URL: localhost:8989/apex/f?p=105:12:34348059692603:NO:12::&cs=3yxsw5hYmxd0F\_mR3b5kVJ2kcNw. The browser's toolbar includes various icons for search, navigation, and extensions like AdFly, SYSTRAN Translate, google scholar, amazon, oracle apex, gmail, YouTube, facebook, Google, and Google Translate.

The application interface features a teal header with the text 'Online course report' and a user profile icon labeled 'ghazi'. A dark sidebar on the left contains a navigation menu with the following items: Home, DEPARTMENT, COURSE IDENTIFICATION, COURSE INSTRUCTOR DATA, STUDENT DATA, TOPICS (highlighted in blue), ACADEMY YEARS, ACTIVITY COURSES DATA, and Administration.

The main content area is titled 'ACTIVITY COURSES' and contains a form with the following fields and controls:

- Activity Name:** A text input field.
- Code Course:** A dropdown menu.
- Planned:** A text input field.
- Activity Not:** A text input field.
- Cancel:** A button located at the bottom left of the form.
- Create:** A blue button located at the bottom right of the form.

At the bottom of the application, the text 'Release 1.0' is visible. The Windows taskbar at the very bottom shows various application icons and the system tray with the time '01:59' and date '2021/01/19'.

**When clicking on the student data menu**

**An interface will appear showing student data**

The screenshot shows a web browser window displaying an online course report interface. The browser's address bar shows the URL: localhost:8989/apex/f?p=105:7:34348059692603::NO::. The interface has a teal header with the text "Online course report" and a user profile icon labeled "ghazi". A dark sidebar on the left contains a menu with the following items: Home, DEPARTMENT, COURSE IDENTIFICATION, COURSE INSTRUCTOR DATA, STUDENT DATA (highlighted), TOPICS, ACADEMY YEARS, ACTIVITY COURSES DATA, and Administration. The main content area is titled "STUDENT DATA" and features a search bar with a "Go" button and an "Actions" dropdown. A "Create" button is located in the top right corner of the data table. The table has the following structure:

	Id Student	Name Student	Address	Email	Id Department
	1	Ahmed	-	ag34@hotmail.com	computer science

At the bottom right of the table, there is a page indicator "1 - 1". The footer of the interface displays "Release 1.0". The Windows taskbar at the bottom shows the time as 02:10 م on 2023/02/09.

**Then we just press the Create button**

The screenshot shows a web browser window displaying an Oracle APEX application. The browser's address bar shows the URL: localhost:8989/apex/f?p=105:8:34348059692603:NO:8::&cs=3iBgMU1knODgDtX7OIXZavZv73Tk. The application's header is blue and contains the text 'Online course report' and a user profile 'ghazi'. A dark sidebar on the left lists navigation options: Home, DEPARTMENT, COURSE IDENTIFICATION, COURSE INSTRUCTOR DATA, STUDENT DATA (highlighted), TOPICS, ACADEMY YEARS, ACTIVITY COURSES DATA, and Administration. The main content area is titled 'STUDENT DATA \ STUDENT' and contains a form with the following fields: 'Name Student' (text input), 'Address' (text input), 'Email' (text input), and 'Id Department' (dropdown menu). At the bottom of the form are 'Cancel' and 'Create' buttons. The footer of the application shows 'Release 1.0'. The Windows taskbar at the bottom displays various application icons and the system clock showing 02:11 م on 2023/02/09.

## 4.5. Reports

### COURSE IDENTIFICATION report

	Course id	Course Title	Program	Semester	Course Instructor	Teach Hours	Code Course	Academy Years
	62	java	Bachelor,diploma	First Semester	صالح	52	E202062	2020:2021
	104	php	Bachelor	Second Semester	ALI	42	E2020104	2019:2020

1 - 2

Release 1.0

### COURSE IDENTIFICATION


	Id INSTRUCTOR	Name INSTRUCTOR	Address INSTRUCTOR	Email INSTRUCTOR	Phone
	1	ALI	JODA	GHFGH@GMAIL.COM	2545245
	21	صالح	رلا لال	ujyukj@hm.com	4542525

1 - 2

Release 1.0

## STUDENT DATA report

### STUDENT DATA

	Id Student	Name Student	Address	Email	Id Department
	1	Ahmed	-	ag34@hotmail.com	computer science

1 - 1

#### 1.7. Code

#### Trigger



```
create or replace TRIGGER "BI_ACADEMY_YEARS"  
before insert on "ACADEMY_YEARS"  
for each row  
begin  
if :NEW."ACADEMY_YEARS_ID" is null then  
select          "ACADEMY_YEARS_SEQ".nextval          into  
:NEW."ACADEMY_YEARS_ID" from sys.dual;  
end if;  
end;
```

```
create or replace TRIGGER "BI_COURSE_INSTRUCTOR"  
before insert on "COURSE_INSTRUCTOR"  
for each row  
begin  
if :NEW."ID_INS" is null then  
select  "COURSE_INSTRUCTOR_SEQ".nextval  into  :NEW."ID_INS"  
from sys.dual;  
end if;  
end;
```

```
create or replace TRIGGER "BI_DEPARTMENT"  
before insert on "DEPARTMENT"  
for each row  
begin  
if :NEW."ID_DEPARTMENT" is null then  
select  "DEPARTMENT_SEQ".nextval  into  :NEW."ID_DEPARTMENT"  from  
sys.dual;  
end if;  
end;
```





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