VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"JNANA SANGAMA", BELAGAVI - 590 018

A MINI PROJECT REPORT

on

" PLACEMENT MANAGEMENT SYSTEM "

Submitted by

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In partial fulfillment of the requirements for the V semester

DBMS LABORATORY WITH MINI PROJECT

of

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in

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Under the Guidance of

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at

SAHYADRI

College of Engineering & Management

An Autonomous Institution

MANGALURU

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CERTIFICATE

This is to certify that the **Mini Project** entitled **"Placement Management System"** has been carried out by **Ram Sai Rao U(4SF20IS073)** and **Saniha T U (4SF20IS081)**, the bonafide students of Sahyadri College of Engineering & Management in partial fulfillment of the requirements for the V semester **DBMS Laboratory with Mini Project (18CSL58)** of **Bachelor of Engineering in Information Science & Engineering** of Visvesvaraya Technological University, Belagavi during the year 2022 - 23. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The mini project report has been approved as it satisfies the academic requirements in respect of mini project work.

Ms. J R Shruti	**Dr. Mustafa Basthikodi**
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External Practical Examination:

Examiner's Name	Signature with Date
1.	.....
2.	.....

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DECLARATION

We hereby declare that the entire work embodied in this Mini Project Report titled **"Placement Management system"** has been carried out by us at Sahyadri College of Engineering and Management, Mangaluru under the supervision of **Ms. J R Shruti** as the part of the V semester **DBMS Laboratory with Mini Project (18CSL58)** of **Bachelor of Engineering** in **Information Science & Engineering**. This report has not been submitted to this or any other University.

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Abstract

The Placement Management System (PMS) is an application that stores, processes, retrieves, and analyzes data about all the placement activities. The major goal of the Placement management system is to develop an web application for the placement cell. It keeps track of students, companies, training details, exams and recruitment processes. Because the project is all done at the administrative level, only the administrator can view and use it efficiently. The Placement Management System is designed to automate the existing manual system by providing full-fledged computer software so that valuable data can be stored for extended period with easy access manipulation.

Acknowledgement

It is with great satisfaction and euphoria that we are submitting the Mini Project Report on **"Placement Management System "**. We have completed it as a part of the V semester **DBMS Laboratory with Mini Project (18CSL58)** of **Bachelor of Engineering** in **Information Science & Engineering** of Visvesvaraya Technological University, Belagavi.

We are profoundly indebted to our guide, **Ms. J R Shruti**, Assistant Professor, Department of Information Science & Engineering for innumerable acts of timely advice, encouragement and We sincerely express our gratitude.

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Chapter 1

Introduction

The project Placement management system is an initial small-scale implementation that is used to prove the viability of a project idea. This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the administrator to carry out operations in a smooth and effective manner.

The administrator receives the details of the students, companies available, courses available and they are stored in the database. The administrator then appends the data according to the details available. The details are sorted out in different sections as and when required. The administrator will provide the details of the students who opted a training and a company. The additional features is that the number of students who selected a particular company or training for along with their details will be displayed.

1.1 Purpose

The main purpose of the Placement Database Management system is to manage the details of students, companies, training, exams. The existing system of manually taking down the data in paper or documentation form can be replaced by fully automated computerised system by which data can be retrieved whenever required in future. Whenever the company announces any upcoming exams that are going to be conducted the same will be updated in the database by the administrator. Even the individual results of the students who attended company specific exams can be updated later.

1.2 Scope

This system can be used by educational institutions to manage their placement process and by companies to manage their recruitment process for campus placement. The system can be used to automate various tasks such as scheduling interviews, shortlisting candidates, and generating offer letters. It also provides a platform for students and companies to communicate and share information. The system can also be used to track the performance of students, companies and the placement process.

1.3 Overview

Since there is a lot of activities going through the placement department. The goal of this Placement Management System is to ease the workload by providing a systematic way of storing all the data and a unambiguous way of retrieving it too. This Database system not only stores and retrieves the data it also analysis the data and bring the total number of students selected a particular company and a training activity. This helps the placement employee to receive the data efficiently.

Chapter 2

Requirements Specification

2.1 Hardware Specification

- Processor : AMD Ryzen 5 3500U with Radeon Vega Mobile Gfx
- RAM : 8GB
- Hard Disk : 1TB,256GB SSD
- Input Device : Standard keyboard and Mouse
- Output Device : Monitor

2.2 Software Specification

- Database : MySQL 8.1.12
- Markup Language : HTML
- Scripting Language: PHP 8.1.12
- IDE: Microsoft Visual Studio Code 1.74.3

Chapter 3

System Design

3.1 ER Diagram

An Entity Relationship Diagram (ER Diagram) pictorially explains the relationship between entities to be stored in a database. Fundamentally, the ER Diagram is a structural design of the database. It acts as a framework created with specialized symbols for the purpose of defining the relationship between the database entities. A entity relationship

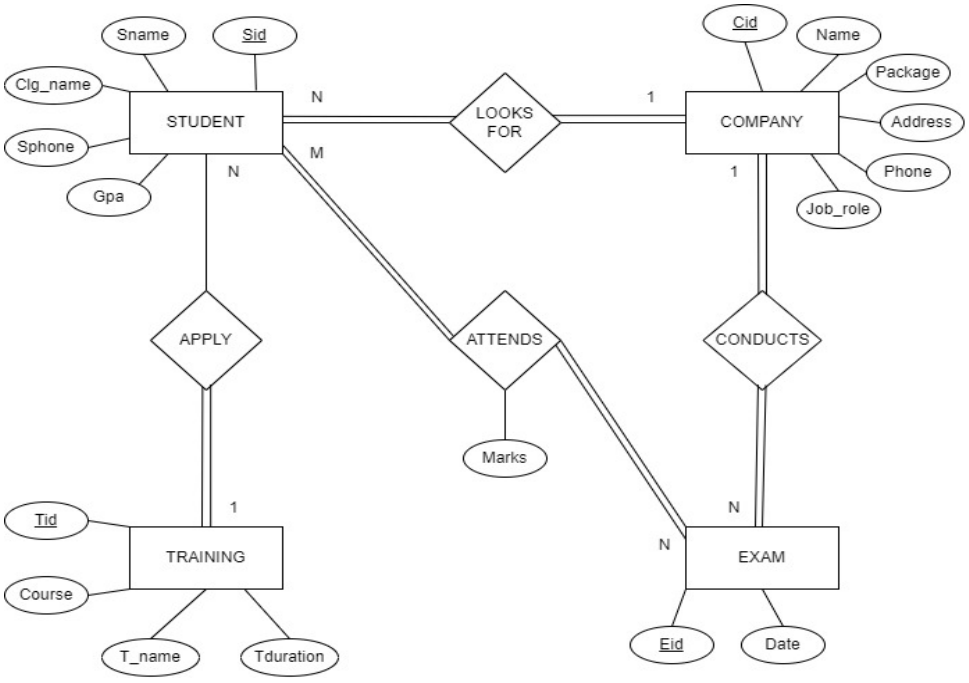

Figure 3.1: ER Diagram for Placement Management System

diagram (ERD) shows the relationships of entity sets stored in a database. Here as given in figure 3.1 an entity in this context is an object, a component of data. The entities like student, company, training and exam can have attributes that define its properties. By defining the entities ,their attributes and showing relationship between them, an ER

diagram illustrates the logical structure of databases.

3.2 Mapping From ER Diagram to Schema Diagram

The below figure represents the relational schema of the proposed system. We create the relation for the entities STUDENT, COMPANY, TRAINING and EXAM in the relational schema corresponding to the regular entities in the ER diagram. SID, CID, TID and EID are the primary key for the relation STUDENT, COMPANY, TRAINING and EXAM.

1. **Mapping of Regular Entities:** This step involves mapping all the regular entity types to tabular format by identifying their primary keys i.e STUDENT, COMPANY, TRAINING and EXAM.

2. **Mapping of Weak Entity:** When mapping weak entity types along with other at- tributes the partial key and primary key of parent entity together will form their primary key of the new relation.

3. **Mapping of 1:1 Relation:** ln this step foreign keys are assigned using foreign key approach. The primary key of the participating relation R or S is added as primary key to second entity types by looking at the participating constraints.

4. **Mapping of 1:N Relation:** Foreign key approach is used to add one sided primary key to the n sided entity at foreign key. Here there are three binary 1:N relations, relationship between STUDENT and TRAINING, relationship between STUDENT and COMPANY and relationship between COMPANY and EXAM.

5. **Mapping of M:N Relation:** Here we use the cross reference approach where the relationship is converted to a new relation within attributes on primary keys of both participating relation. In this schema there is one relation, relationship between STUDENT and EXAM.

6. **Mapping of Multivalued Relation:** For Multivalued attributes a separate relation has to be created along with primary key of parent relation.

7. **Mapping of N-ary Relation:** For mapping N array relationship we create a new relation with a relationship name in its attribute and primary keys of all participating entity types.

3.3 Assumptions

- Many students look for a single company.
- One company can conduct many exams.
- Any number of students can attend any number of exams.
- Any number of students can apply for a training.

3.4 Schema Diagram

A Schema is a pictorial representation of the relationship between the database tables in the database that is created. The Placement Management System schema of a database system is its structure described in a formal language supported by the database management system. The term " schema" refers to the organization of data as a blueprint of how the database is constructed. Here the schema is got by following the mapping from ER to schema. The tables got are student, company, training, exam and Attends as m:n relation was present.

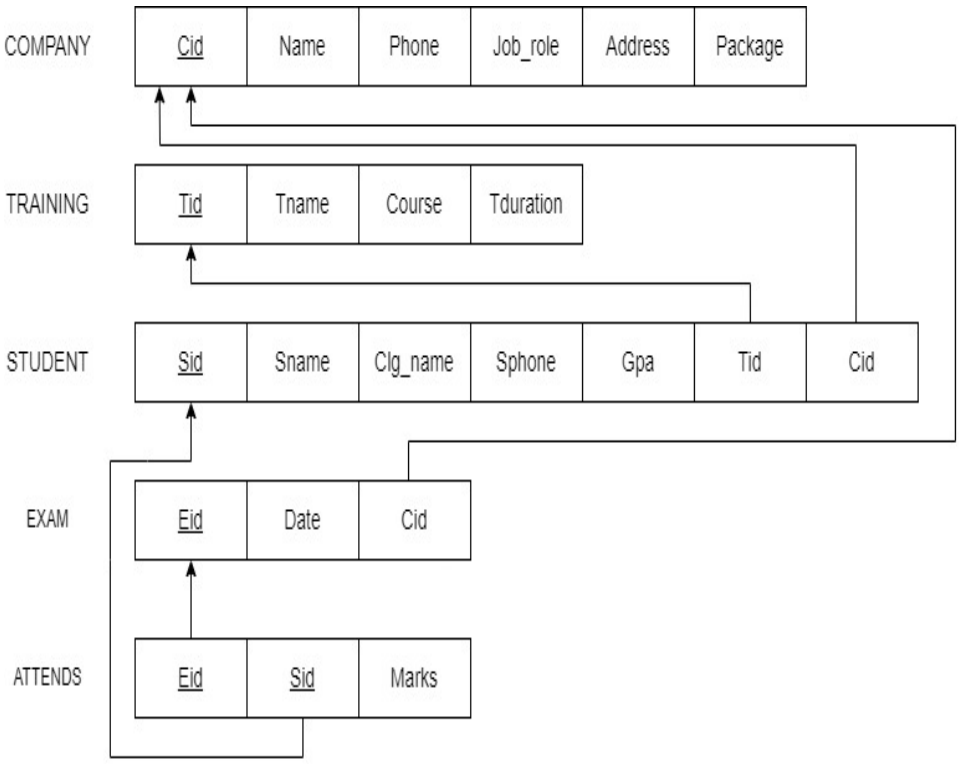

Figure 3.2: Schema Diagram for Placement Management System

Chapter 4

Implementation

4.1 Table Used

4.1.1 Student Table

The Structure of Student Table contains the attributes SID (Student id), SNAME, SPHONE (Student Phone Number), CLG NAME (College name), GPA, TID, CID. Here the attribute, SID is the primary key. The attributes TID and CID are the foreign keys referencing TID from the training table and CID from company table respectively. Figure 4.1 illustrates the structure of student table.

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	SID	varchar(50)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	2	SNAME	char(50)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	3	SPHONE	varchar(12)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	4	CLG_NAME	char(50)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	5	GPA	float			No	*None*			Change Drop More
☐	6	TID	varchar(50)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	7	CID	varchar(50)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More

Figure 4.1: Structure of Student Table

4.1.2 Company Table

The Structure of Company Table contains the attributes CID (Company id), NAME, ADDRESS, PHONE, JOB ROLE, PACKAGE. Here the attributes CID is the primary key. Figure 4.2 illustrates the structure of company table.

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	CID	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
☐	2	NAME	char(50)	utf8mb4_general_ci		No	None			Change Drop More
☐	3	ADDRESS	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
☐	4	PHONE	varchar(12)	utf8mb4_general_ci		No	None			Change Drop More
☐	5	JOB_ROLE	char(50)	utf8mb4_general_ci		No	None			Change Drop More
☐	6	PACKAGE	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More

Figure 4.2: Structure of Company Table

4.1.3 Training Table

The Structure of Training Table contains the attributes TID (Training id), TNAME (Trainer Name), COURSE and TDURATION (Training duration). Here the attribute, TID is the primary key. Fig 4.3 illustrates table of training table.

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	TID	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
☐	2	TNAME	char(50)	utf8mb4_general_ci		No	None			Change Drop More
☐	3	COURSE	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
☐	4	TDURATION	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More

Figure 4.3: Structure of Training Table

4.1.4 Exam Table

The Structure of Exam Table contains the attributes EID (Exam id), DATE and CID (Company id). Here the attribute, EID is the primary key. The attribute CID is the foreign key. Fig 4.4 illustrates table of exam table.

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	EID	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
☐	2	DATE	date			No	None			Change Drop More
☐	3	CID	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More

Figure 4.4: Structure of Exam Table

4.1.5 Attends Table

The Structure of Attends Table contains the attributes EID (Exam id),SID (Student id) and MARKS. Here the attributes, EID and SID are both primary keys and foreign keys. Fig 4.5 illustrates table of attends table.

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	EID	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
☐	2	SID	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
☐	3	MARKS	int(11)			No	None			Change Drop More

Figure 4.5: Structure of Attends Table

4.2 Pseudo code

4.2.1 Connection to Database:

In PHP connecting to database is done using new mysqli method where four arguments has to be passed. The arguments are host, user name, password, and database name. In the system the host is 'localhost', user name is 'root', password is empty and the database name is 'placement'.

```php
<?php
    $con=new mysqli('localhost','root','','placement');
    if(!$con)
    {
        die(mysqli_error($con));
    }
?>
```

Figure 4.6: Connection to Database

4.2.2 Creating new Tuple (Insertion):

The below figure shows how data is added into Company Table. Insert statement is a DML (Data modification language) statement which is used to insert data in the MySQL table. PHP POST is a PHP super global variable which is used to collect form data after submitting an HTML form with method=" post". The PHP mysqli query() function accepts a string value representing a query as one of the parameters and, executes/performs the given query on the database.

```php
<?php
$id=$_POST['id'];
$tname=$_POST['tname'];
$course=$_POST['course'];
$tduration=$_POST['tduration'];

$sql="INSERT INTO `placement`.`training`( `TID`,`TNAME`, `COURSE`, `TDURATION`)
VALUES ('$id','$tname','$course','$tduration');";

if($con->query($sql))
{
    $insert=true;
    header('location:Training.php');
}
else
{
    echo "error: $sql<br> $con->error";
}
$con->close();
?>
```

Figure 4.7: Insertion to Database

4.2.3 Deleting the Existing Tuple (Deletion):

The DELETE statement is used to delete existing records in a table. The WHERE clause specifies which record(s) should be deleted. Once data has been deleted, it cannot be recovered.

```php
<?php
$id=$_POST['id'];
$tname=$_POST['tname'];
$course=$_POST['course'];
$tduration=$_POST['tduration'];

$sql="INSERT INTO `placement`.`training`( `TID`,`TNAME`, `COURSE`, `TDURATION`)
VALUES ('$id','$tname','$course','$tduration');";

if($con->query($sql))
{
    $insert=true;
    header('location:Training.php');
}
else
{
    echo "error: $sql<br> $con->error";
}
$con->close();
?>
```

Figure 4.8: Deletion to Database

4.2.4 Updation of the Tuple:

The UPDATE statement is used to modify the existing records in a table. The WHERE clause specifies which record (s) that should be updated. Here is the pseudo code for updating the students details.

```php
<?php
if(isset($_POST['submit']))
{
    echo $id;
    $tname=$_POST['tname'];
    $course=$_POST['course'];
    $tduration=$_POST['tduration'];

    $sql="UPDATE `training`
    SET TNAME='$tname',COURSE='$course',TDURATION='$tduration'
    WHERE TID='$id'";
    $result=mysqli_query($con,$sql);
    echo $sql;
    if($result)
    {
        header('location:Training.php');
    }
    else
    {
        die(mysqli_error($con));
    }
}
?>
```

Figure 4.9: Updation to Database

Chapter 5

Results and Discussion

- **Home:**

  The administrator have to login with appropriate credentials to access the home page.

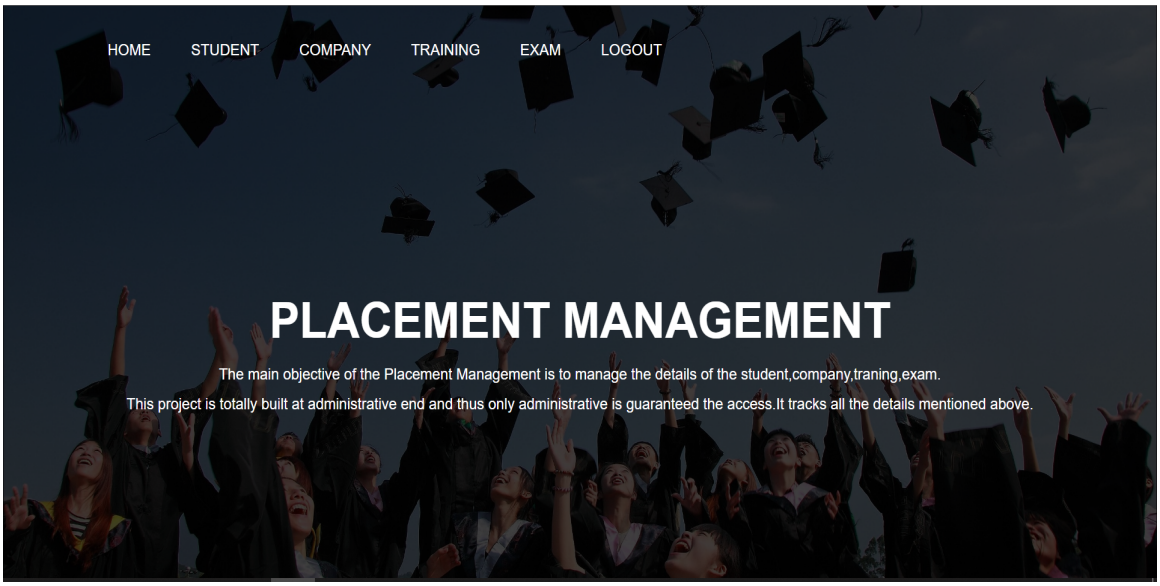

Figure 5.1: Home

- **Student Details:**

  After filling the appropriate details of students,it can be viewed separately. It displays the companies that the student is interested in and whichever training he is willing to take up. Option is provided even to register new students. Figure 5.2 illustrates the Student Details

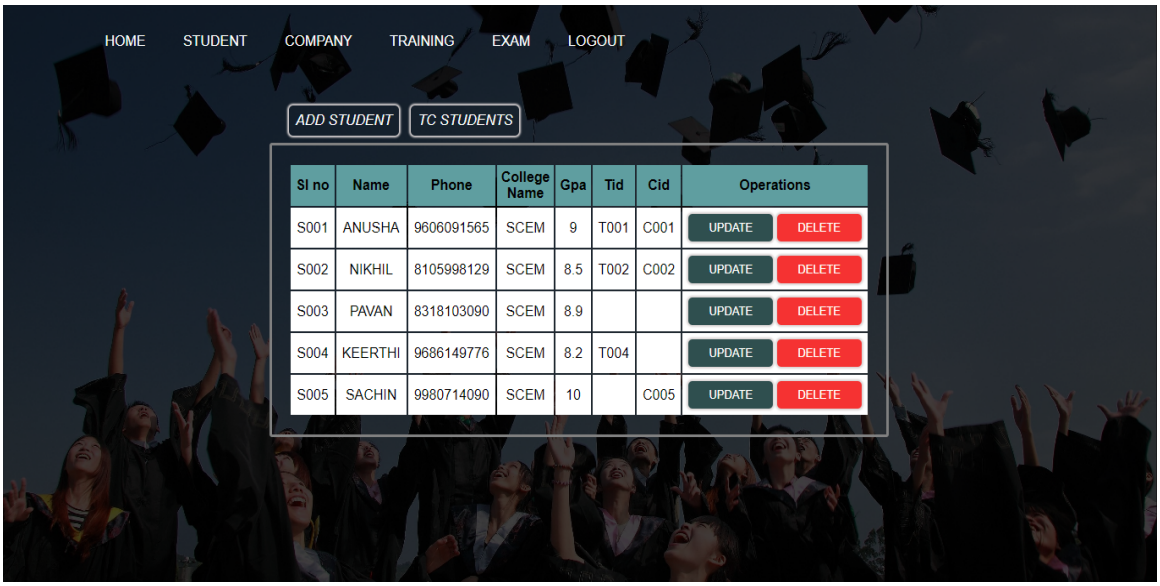

Figure 5.2: Student Details

- **Company Details:**

  After filling the appropriate details of company, it can be viewed separately. Option is provided even to register new companies. Figure 5.3 illustrates the Company Details

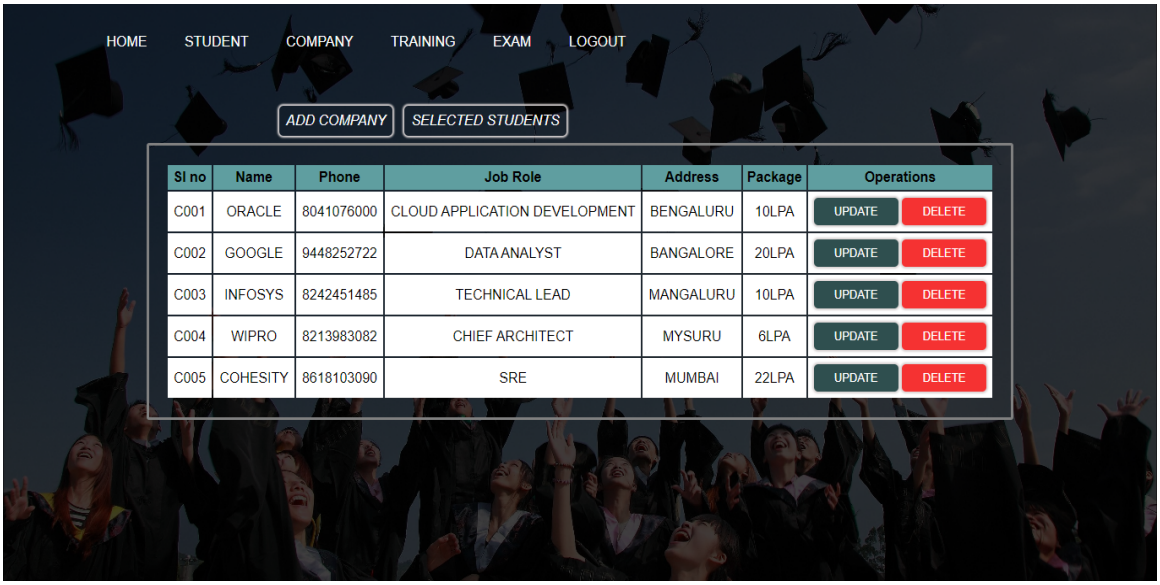

Figure 5.3: Company Details

- **Training Details:**

  After filling the appropriate details of training, it can be viewed separately. Option is provided even to register new Training. Figure 5.4 illustrates the Training Details

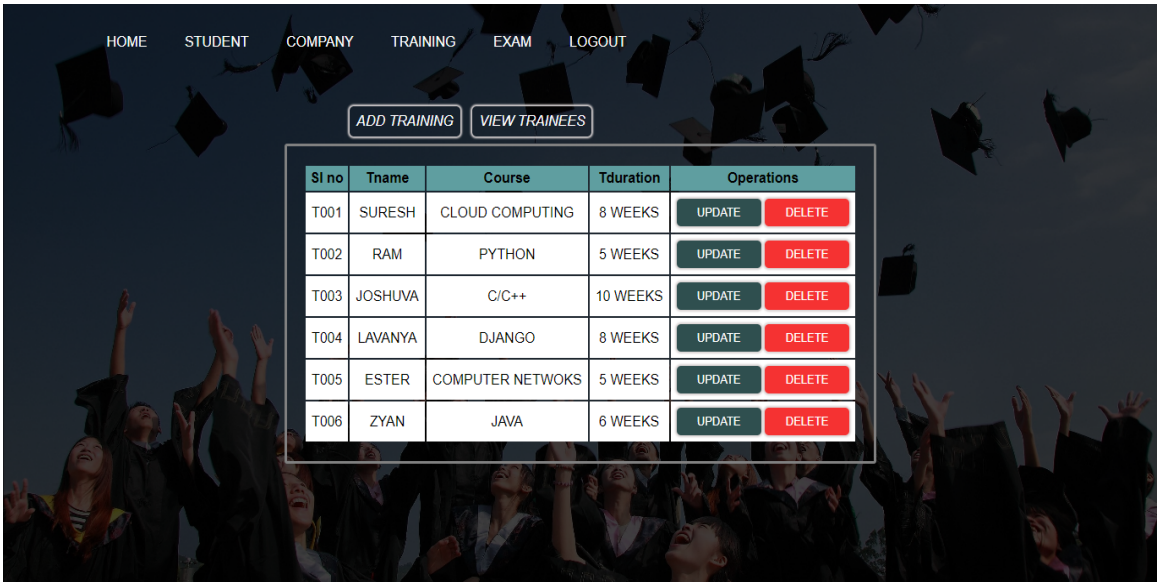

Figure 5.4: Training Details

- **Exam Details:**

  After filling the appropriate details of Exam,it can be viewed separately. Option is provided even to register new upcoming Exams. Figure 5.5 illustrates the Exam Details

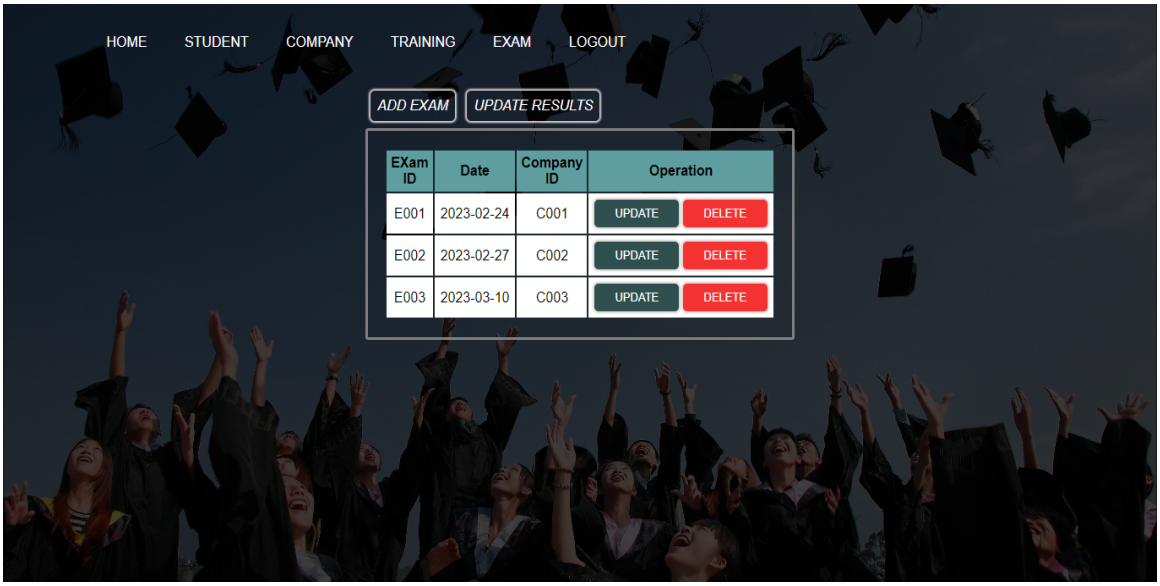

Figure 5.5: Exam Details

- **Update Results:**

  Here the results of the exam are updated and it is viewed right next itself. Figure 5.6 illustrates the Updated Results List.

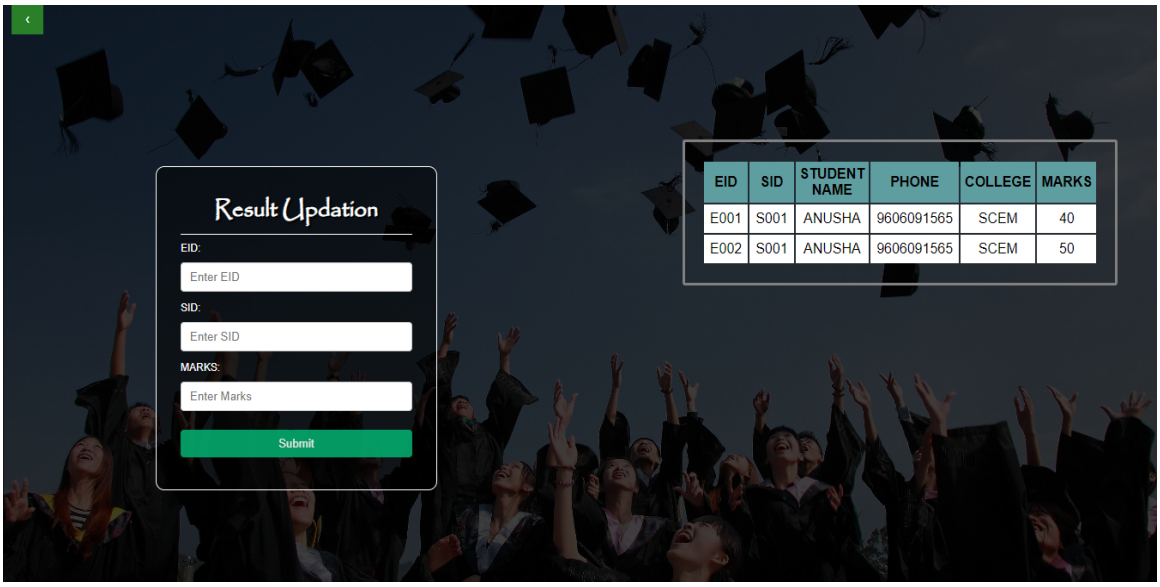

Figure 5.6: Updated Results

Chapter 6

Conclusion and Future work

A good database is which can easily store the data, which ensures accuracy, reduces redundancy and which helps to retrieve the data without any ambiguity well this project Placement Management System provides all the basic necessity required for a database. Our project is to make all the placement activities run smoothly without any ambiguity. This will help the administrator to store the required data in a systematic way and use the stored data for other future purpose without any complexity.

In Future we can implement this project on web. This project is administrator level that is only administrator can use it but once we make it online both the student and the administrator can use it. The student can go through the companies he/she can apply for a job and trainings provided too. If the student is interested in a company then he/she can register themselves and go through the process themselves whereas the administrator can see the processes. This would bring a compatible results.

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