
FINAL PROJECT

1) Table Creation and data input:

a) Lecturers:

ID_Lecturers	Title	Family_Nam	Initial_Name	ID_Institutions
1	Dr.	Kolarski	Jacek	1
2	Prof.	Zarzeczny	Jan	2

b) Courses:

ID_Courses	Course_Code	Course_Name	Place	Date	ID_Lecturers
1	2018_01	Psychology for Teachers	Krakow, Mickiewicz Av. 30, B-4, classroom 5	2/17/2018	1
2	2018_02	Handling of Computer Games	Krakow, Reymonta St. 11, room 10	3/27/2018	2

c) Institutions:

ID_Institutions	Name	Address1	Address2
1	AGH Krakow	Adama Mickiewicza 30	30-059 Kraków
2	Nano Ltd.	Mazowiecka St. 6	30-036 Kraków

d) Participants:

ID_Participants	Last_name	First_name	ID_Positions
1	Sowa	Andrzej	1
2	Wrobel	Andrzej	1
3	kepa	Andrzej	2
4	Wojcicki	Janusz	1
5	Niecko	Anna	3

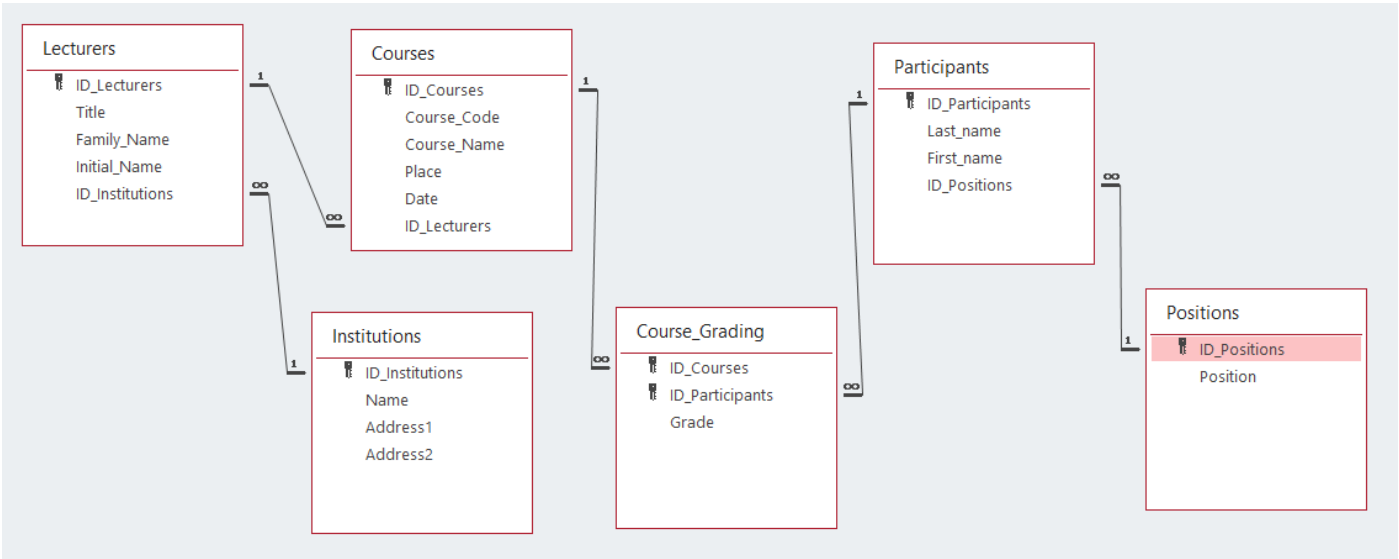
e) Course Grading:

ID_Courses	ID_Participa	Grade
1	1	3.0
1	2	5.0
1	3	4.5
2	2	Passed
2	4	Passed
2	5	Passed

f) Positions:

ID_Positions	Position
1	Adjunct
2	Assistant
3	Specialist

2) Relationship between tables:



3) Displaying the information:

First we create a query using query design wizard and then modify the information in Query Design View.

Simple Query Wizard

Which fields do you want in your query?
You can choose from more than one table or query.

Tables/Queries
Table: Course_Grading

Available Fields:

- ID_Courses
- ID_Participants

Selected Fields:

- Course_Code
- Course_Name
- Title
- Initial_Name
- Family_Name
- Name
- Address1
- Address2

Buttons: Cancel, < Back, Next >, Finish

Simple Query Wizard

What title do you want for your query?
Courses Information

That's all the information the wizard needs to create your query.

Do you want to open the query or modify the query's design?

☐ Open the query to view information.

☒ Modify the query design.

Buttons: Cancel, < Back, Next >, Finish

The Query Design View:

Field:	Course_Number: Co	Course_Name: Course_Name	Lecturer: [Lecturers].[Title] &	Place_and_date: Courses.Pl	Participant: Participants.Firs	Participant_Position: Positi	Grade: Grade
Table:	Courses	Courses				Positions	Course_Grading
Sort:							
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:							
or:							

SQL View:

```

SELECT Courses.Course_Code AS Course_Number,
       Courses.Course_Name AS Course_Name,
       [Lecturers].[Title] & ' ' & [Lecturers].[Initial_Name] & ' ' & [Lecturers].[Family_Name] & Chr(13) & Chr(10) &
       [Institutions].[Name] & Chr(13) & Chr(10) & [Institutions].[Address1] & ', ' & [Institutions].[Address2] AS Lecturer,
       Courses.Place & ', ' & Courses.Date AS Place_and_date,
       Participants.First_name & ' ' & Participants.Last_name AS Participant,
       Positions.Position AS Participant_Position,
       Course_Grading.Grade AS Grade
FROM (Positions
      INNER JOIN Participants ON Positions.[ID_Positions] = Participants.[ID_Positions])
      INNER JOIN ( (Institutions
                    INNER JOIN Lecturers ON Institutions.[ID_Institutions] = Lecturers.[ID_Institutions])
                  INNER JOIN
                    ( Courses
                      INNER JOIN Course_Grading ON Courses.[ID_Courses] = Course_Grading.[ID_Courses]
                    ) ON Lecturers.[ID_Lecturers] = Courses.[ID_Lecturers]
                ) ON Participants.[ID_Participants] = Course_Grading.[ID_Participants];

```

Query Final Output:

Course_Numbe	Course_Name	Lecturer	Place_and_date	Participant	Participant_P	Grade
2018_01	Psychology for Teachers	Dr. Jacek Kolarski AGH Krakow Adama Mickiewicza 30, 30-059 Kraków	Krakow, Mickiewicz Av. 30, B-4, classroom 5, 2/17/2018	Andrzej Sowa	Adjunct	3.0
2018_01	Psychology for Teachers	Dr. Jacek Kolarski AGH Krakow Adama Mickiewicza 30, 30-059 Kraków	Krakow, Mickiewicz Av. 30, B-4, classroom 5, 2/17/2018	Andrzej Wrobel	Adjunct	5.0
2018_01	Psychology for Teachers	Dr. Jacek Kolarski AGH Krakow Adama Mickiewicza 30, 30-059 Kraków	Krakow, Mickiewicz Av. 30, B-4, classroom 5, 2/17/2018	Andrzej kepa	Assistant	4.5
2018_02	Handling of Computer Games	Prof. Jan Zarzeczny Nano Ltd. Mazowiecka St. 6, 30-036 Kraków	Krakow, Reymonta St. 11, room 10, 3/27/2018	Andrzej Wrobel	Adjunct	Passed
2018_02	Handling of Computer Games	Prof. Jan Zarzeczny Nano Ltd. Mazowiecka St. 6, 30-036 Kraków	Krakow, Reymonta St. 11, room 10, 3/27/2018	Janusz Wojcicki	Adjunct	Passed
2018_02	Handling of Computer Games	Prof. Jan Zarzeczny Nano Ltd. Mazowiecka St. 6, 30-036 Kraków	Krakow, Reymonta St. 11, room 10, 3/27/2018	Anna Niecko	Specialist	Passed

4) Creating Report with Grouped Data:

To create a report we select the query and click on 'Report' option under Create menu.

We then switch to design view to do further modifications to the report such as grouping.

The screenshot shows the Report Design View for a report titled 'Courses Information'. The design grid is organized into sections: Report Header, Page Header, Course Name Header, and Detail. The Report Header section contains a title box with the text 'Courses Information' and a date box with the formula '=Date()'. The Page Header section contains a table with five columns: Course Number, Place and Date, Participant, Position, and Grade. The Course Name Header section contains a table with two columns: Course Name and Lecturer. The Detail section contains a table with five columns: Course Number, Place_and_date, Participant, Participant_P osition, and Grade. The design grid is shown with a ruler at the top and a status bar at the bottom.

Grouping of Data:

The screenshot shows the 'Group, Sort, and Total' task pane in Microsoft Access. It displays the following settings: Group on Course_Number with A on top, Sort by Course_Name, and buttons for 'Add a group' and 'Add a sort'.

Final Report:

Courses Information					Friday, January 19, 2024
Course Number	Place and Date	Participant	Position	Grade	
Course: Handling of Computer Games		Lecturer: Prof. Jan Zarzeczny			
2018_02	Krakow, Reymonta St. 11, room 10, 3/27/2018	Anna Niecko	Specialist	Passed	
2018_02	Krakow, Reymonta St. 11, room 10, 3/27/2018	Janusz Wojcicki	Adjunct	Passed	
2018_02	Krakow, Reymonta St. 11, room 10, 3/27/2018	Andrzej Wrobel	Adjunct	Passed	
Course: Psychology for Teachers		Lecturer: Dr. Jacek Kolarski			
2018_01	Krakow, Mickiewicz Av. 30, B-4, classroom 5, 2/17/2018	Andrzej kepa	Assistant	4.5	
2018_01	Krakow, Mickiewicz Av. 30, B-4, classroom 5, 2/17/2018	Andrzej Wrobel	Adjunct	5.0	
2018_01	Krakow, Mickiewicz Av. 30, B-4, classroom 5, 2/17/2018	Andrzej Sowa	Adjunct	3.0	

Optional Tasks

1) Creating Similar database using MySQL

```
CREATE TABLE Lecturers (
  ID_Lecturers INT PRIMARY KEY,
  Title VARCHAR(10),
  Initial_Name VARCHAR(10),
  Family_Name VARCHAR(50),
  ID_Institutions INT,
  FOREIGN KEY (ID_Institutions) REFERENCES Institutions(ID_Institutions));

CREATE TABLE Courses (
  ID_Courses INT PRIMARY KEY,
  Course_Code VARCHAR(10),
  Course_Name VARCHAR(100),
  ID_Lecturers INT,
  Date DATE,
  Place VARCHAR(100),
  FOREIGN KEY (ID_Lecturers) REFERENCES Lecturers(ID_Lecturers));
```

THE FULL .SQL FILE FOR CREATING TABLES CAN BE FOUND HERE: [Table Creation.sql](#)

Adding Data to the Tables:

```
INSERT INTO Institutions
VALUES
(1, 'AGH Krakow', 'Adama Mickiewicza 30', '30-059 Kraków'),
(2, 'Nano Ltd.', 'Mazowiecka St. 6', '30-065 Krakow');

INSERT INTO Lecturers
VALUES
(1, 'Dr.', 'Jacek', 'Kolarski', 1),
(2, 'Prof.', 'Jan', 'Zarzeczny', 2);
```

THE FULL .SQL FILE FOR ADDING DATA CAN BE FOUND HERE: [Add Data.sql](#)

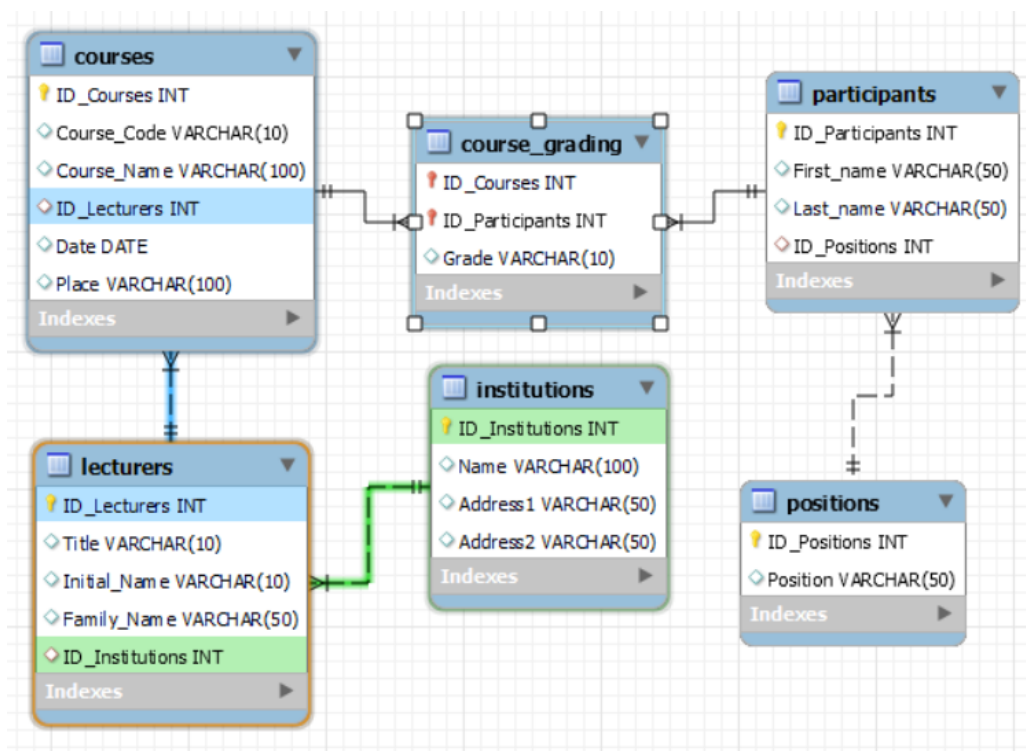
```
mysql> source createtables.sql
```

```
mysql> source insertdata.sql
```

```
mysql> SELECT * FROM Institutions;
+-----+-----+-----+-----+
| ID_Institutions | Name      | Address1          | Address2      |
+-----+-----+-----+-----+
| 1               | AGH Krakow | Adama Mickiewicza 30 | 30-059 Kraków |
| 2               | Nano Ltd.  | Mazowiecka St. 6   | 30-065 Kraków |
+-----+-----+-----+-----+
```

```
mysql> show tables;
+-----+
| Tables_in_final_project |
+-----+
| course_grading          |
| courses                 |
| institutions            |
| lecturers               |
| participants            |
| positions               |
+-----+
```

Workbench Tables Diagram: **Reverse Engineer**



2) Using **PHP** and **HTML** to interact with data on webpages:

```
db_connection.php
1  <?php
2  $servername = "localhost";
3  $username = "root";
4  $password = "#####";
5  $dbname = "final_project";
6
7  // Create connection
8  $conn = new mysqli($servername, $username, $password, $dbname);
9
10 // Check connection
11 if ($conn->connect_error) {
12     die("Connection failed: " . $conn->connect_error);
13 }
```

Connecting to the local SQL server and database using PHP

I created a query to display Corse information grouped by Lecturer, displaying course name and participants:

```
db_operations.php > ...
1  <?php
    1 reference
2  function fetchCourseData() {
3      global $conn;
4      $sql = "SELECT
5          concat(Lecturers.Title, ' ',Lecturers.Initial_Name,' ',
6          Lecturers.Family_Name) AS Lecturer,
7          Courses.Course_Name AS Course,
8          CONCAT(Courses.Date) AS Date,
9          GROUP_CONCAT(CONCAT(Participants.First_name, ' ',
10             Participants.Last_name) SEPARATOR ', ') AS Participants
11 FROM
12     ((Courses
13     INNER JOIN Lecturers ON Courses.ID_Lecturers = Lecturers.ID_Lecturers)
14     INNER JOIN Institutions ON Lecturers.ID_Institutions = Institutions.ID_Institutions)
15     INNER JOIN Course_Grading ON Courses.ID_Courses = Course_Grading.ID_Courses
16     INNER JOIN Participants ON Course_Grading.ID_Participants = Participants.ID_Participants
17 GROUP BY
18     Lecturers.Title, Lecturers.Initial_Name, Lecturers.Family_Name,
19     Courses.Course_Name, Institutions.Name, Courses.Place, Courses.Date";
20
21     $result = $conn->query($sql);
22
23     $data = array();
24     if ($result->num_rows > 0) {
25         while ($row = $result->fetch_assoc()) {
26             $data[] = $row;
27         }
28     }
29     return $data;
30 }
```

Using HTML to display Data on Webpage:

```
pritam.php
1  <?php
2  //database connection file and the function
3  include('db_connection.php');
4  include('db_operations.php');
5  //Fetching course data
6  $courseData = fetchCourseData();?>
7  <!DOCTYPE html><html lang="en">
8  <head><meta charset="UTF-8">
9      <meta name="viewport" content="width=device-width, initial-scale=1.0">
10     <title>Course Data</title><style>
11         table {width: 100%;border-collapse: collapse;margin-top: 20px; }
12         th, td {border: 2px solid #85C1E9; text-align: left;padding: 8px;
13             white-space: nowrap;}
14         th {background-color: #3498DB;}
15     </style></head><body><h1>Course Data</h1>
16     <table><tr><th>Lecturer</th> <th>Course</th><th>Date</th>
17     <th>Participants</th></tr>
```

Information Display:



Course Data

Lecturer	Course	Date	Participants
Dr. Jacek Kolarski	psychology for teachers	2018-02-17	Andrzej Sowa, Andrzej Wrobel, Andrzej Kepa
Prof. Jan Zarzeczny	handling of computer games	2018-03-27	Andrzej Wrobel, Janusz Wojcicki, Anna Niecko

Adding Participant from Web: (Insertion of Data)

Add Participant

First Name:

Last Name:

Position:
specialist

Course:
handling of computer games

Add Participant

Add Participant

First Name:
Pritam

Last Name:
Chakr

Position:
specialist

Course:
handling of computer games

Add Participant

Add Participant

Participant added successfully!

Course Data

Lecturer	Course	Date	Participants
Dr. Jacek Kolarski	psychology for teachers	2018-02-17	Andrzej Sowa, Andrzej Wrobel, Andrzej Kepa
Prof. Jan Zarzeczny	handling of computer games	2018-03-27	Andrzej Wrobel, Janusz Wojcicki, Anna Niecko, Pritam Chakr

Full Source Code for Data Addition: [Pritam_Data_Insert.php](#)

Review in mySQL if new Participant was added correctly:

```
mysql> SELECT
-> CONCAT(Participants.First_name, ' ', Participants.Last_name) AS "Participant Name",
-> GROUP_CONCAT(DISTINCT Courses.Course_Name ORDER BY Courses.Course_Name ASC) AS "Course Names",
-> GROUP_CONCAT(DISTINCT Positions.Position ORDER BY Courses.Course_Name ASC) AS "Participant Positions"
-> FROM Participants
-> INNER JOIN Course_Grading
-> ON Participants.ID_Participants = Course_Grading.ID_Participants
-> INNER JOIN Courses
-> ON Course_Grading.ID_Courses = Courses.ID_Courses
-> INNER JOIN Positions
-> ON Participants.ID_Positions = Positions.ID_Positions
-> GROUP BY
-> Participants.ID_Participants, Participants.Last_name;
```

Participant Name	Course Names	Participant Positions
Andrzej Sowa	psychology for teachers	adjunct
Andrzej Wrobel	handling of computer games, psychology for teachers	adjunct
Andrzej Kepa	psychology for teachers	assistant
Janusz Wojcicki	handling of computer games	adjunct
Anna Niecko	handling of computer games	specialist
Pritam Chakr	handling of computer games	specialist

As we can see, new Participant was added to the main database.

---Updates--- 24/01/2024

- I have added buttons to display table information for every table in the Database:
- Remove participant Function.
- Custom Query directly from the web.



Course Data

Lecturer	Course	Date	Participants Add Participant
Dr. Jacek Kolarski	psychology for teachers	2018-02-17	Andrzej Sowa, Andrzej Wrobel, Andrzej Kepa
Prof. Jan Zarzeczny	handling of computer games	2018-03-27	Andrzej Wrobel, Janusz Wojcicki, Anna Niecko, Pritam Chakr

[View Participants](#)
[View Positions](#)
[View Lecturers](#)
[View Institutions](#)
[View Courses](#)
[View Course Grading](#)
[Custom Query](#)

Participants Data

ID	First Name	Last Name	Position ID	Action
1	Andrzej	Sowa	1	Remove
2	Andrzej	Wrobel	1	Remove
3	Andrzej	Kepa	2	Remove
4	Janusz	Wojcicki	1	Remove
5	Anna	Niecko	3	Remove
6	Pritam	Chakr	3	Remove

Custom Query from web:

localhost:8000/CreateQuery...

Create Custom Query

Enter Your Custom Query:

```

SELECT
C.Course_Code,
C.Course_Name,
CONCAT(L.Title, ' ', L.Initial_Name, ' ', L.Family_Name) AS Lecturer_Name,
CONCAT(I.Address1, ' ', I.Address2) AS Institution_Address,
CONCAT(C.Place,C.Date) AS Place_Date,
CONCAT(P.First_Name, ' ', P.Last_Name) AS Participant_Name,
POS.Position AS Participant_Position,
CG.Grade
FROM Courses AS C
INNER JOIN Lecturers AS L ON C.ID_Lecturers = L.ID_Lecturers
INNER JOIN Institutions AS I ON L.ID_Institutions = I.ID_Institutions
INNER JOIN Course_Grading AS CG ON C.ID_Courses = CG.ID_Courses
INNER JOIN Participants AS P ON CG.ID_Participants = P.ID_Participants
INNER JOIN Positions AS POS ON P.ID_Positions = POS.ID_Positions
    
```

Execute Query

Query Output:

localhost:8000/CreateQuery.php

Execute Query

Custom Query Result:

Course_Code	Course_Name	Lecturer_Name	Institution_Address	Place_Date	Participant_Name	Participant_Position	Grade
2018_01	psychology for teachers	Dr. Jacek Kolarski	Adama Mickiewicza 30, 30-059 Kraków	Krakow, Mickiewicz Av. 30, B-4, classroom 52018-02-17	Andrzej Sowa	adjunct	3.0
2018_01	psychology for teachers	Dr. Jacek Kolarski	Adama Mickiewicza 30, 30-059 Kraków	Krakow, Mickiewicz Av. 30, B-4, classroom 52018-02-17	Andrzej Wrobel	adjunct	5.0
2018_01	psychology for teachers	Dr. Jacek Kolarski	Adama Mickiewicza 30, 30-059 Kraków	Krakow, Mickiewicz Av. 30, B-4, classroom 52018-02-17	Andrzej Kepa	assistant	4.5
2018_02	handling of computer games	Prof. Jan Zarzeczny	Mazowiecka St. 6, 30-065 Kraków	Krakow, Reymonta St. 11, room 102018-03-27	Andrzej Wrobel	adjunct	passed
2018_02	handling of computer games	Prof. Jan Zarzeczny	Mazowiecka St. 6, 30-065 Kraków	Krakow, Reymonta St. 11, room 102018-03-27	Janusz Wojcicki	adjunct	passed
2018_02	handling of computer games	Prof. Jan Zarzeczny	Mazowiecka St. 6, 30-065 Kraków	Krakow, Reymonta St. 11, room 102018-03-27	Anna Niecko	specialist	passed

We use `multi_query()` to take direct query input from web (relevant part of code):

```

if ($_SERVER['REQUEST_METHOD'] == 'POST') {
    $customQuery = $_POST['custom_query'];
    $conn->multi_query($customQuery)
    
```