

# Proiect Baze de Date

Aplicatie pentru evidenta informatiilor legate de o scoala de soferi

Seceleanu Alexandra-Elena  
Grupa 332AA

- **Descrierea aplicatiei:**

Aplicatia isi doreste sa administreze informatiile despre o scoala de soferi, cum ar fi instructor, studenti, masini si repartizarile acestora.

- **Tabelele aplicatiei:**

Tabela **INSTRUCTOR** contine informatii despre fiecare instructor in parte.

| Nume camp    | Tip cheie | Tip de date  | Constrangeri  |
|--------------|-----------|--------------|---------------|
| instructorID | PK        | int(255)     | autoincrement |
| lastname     |           | varchar(255) |               |
| firstname    |           | varchar(255) |               |
| birthday     |           | date         |               |
| phone        |           | varchar(255) |               |
| email        |           | varchar(255) |               |
| password     |           | varchar(255) |               |

Tabela **STUDENT** contine informatii despre fiecare student in parte.

| Nume camp    | Tip cheie | Tip de date | Constrangeri  |
|--------------|-----------|-------------|---------------|
| studentID    | PK        | int(255)    | autoincrement |
| lastname     |           | varchar(30) |               |
| firstname    |           | varchar(30) |               |
| birthday     |           | date        |               |
| phone        |           | varchar(30) |               |
| email        |           | varchar(30) |               |
| instructorID | FK        | int(255)    | autoincrement |

Tabela **CAR** contine informatii despre fiecare masina in parte.

| Nume camp           | Tip cheie | Tip de date  | Constrangeri  |
|---------------------|-----------|--------------|---------------|
| carID               | PK        | int(255)     | autoincrement |
| model               |           | varchar(150) |               |
| registration_number |           | varchar(30)  |               |
| color               |           | Varchar15)   |               |

Tabela **LESSON** contine informatii despre fiecare lectie in parte.

| Nume camp  | Tip cheie | Tip de date  | Constrangeri  |
|------------|-----------|--------------|---------------|
| lessonID   | PK        | int(20)      | autoincrement |
| start_time |           | time         |               |
| stop_time  |           | time         |               |
| km         |           | int(11)      |               |
| remarks    |           | varchar(255) |               |
| studentID  | FK        | int(11)      | autoincrement |

Tabela **PAYMENT** contine informatii despre fiecare plata efectuata de catre un student.

| Nume camp | Tip cheie | Tip de date | Constrangeri  |
|-----------|-----------|-------------|---------------|
| paymentID | PK        | int(6)      | autoincrement |
| data      |           | date        |               |
| amount    |           | int(11)     |               |
| studentID |           | int(6)      | autoincrement |

Tabela **ALLOCATION** face legatura intre **INSTRUCTOR** si **CAR**, deoarece intre cele doua tabele exista o relatie Many to Many.

| Nume camp    | Tip cheie | Tip de date | Constrangeri  |
|--------------|-----------|-------------|---------------|
| instructorID | PK/FK     | int(255)    | autoincrement |
| carID        | PK/FK     | int(255)    | autoincrement |

- **Relatii intre tabele:**

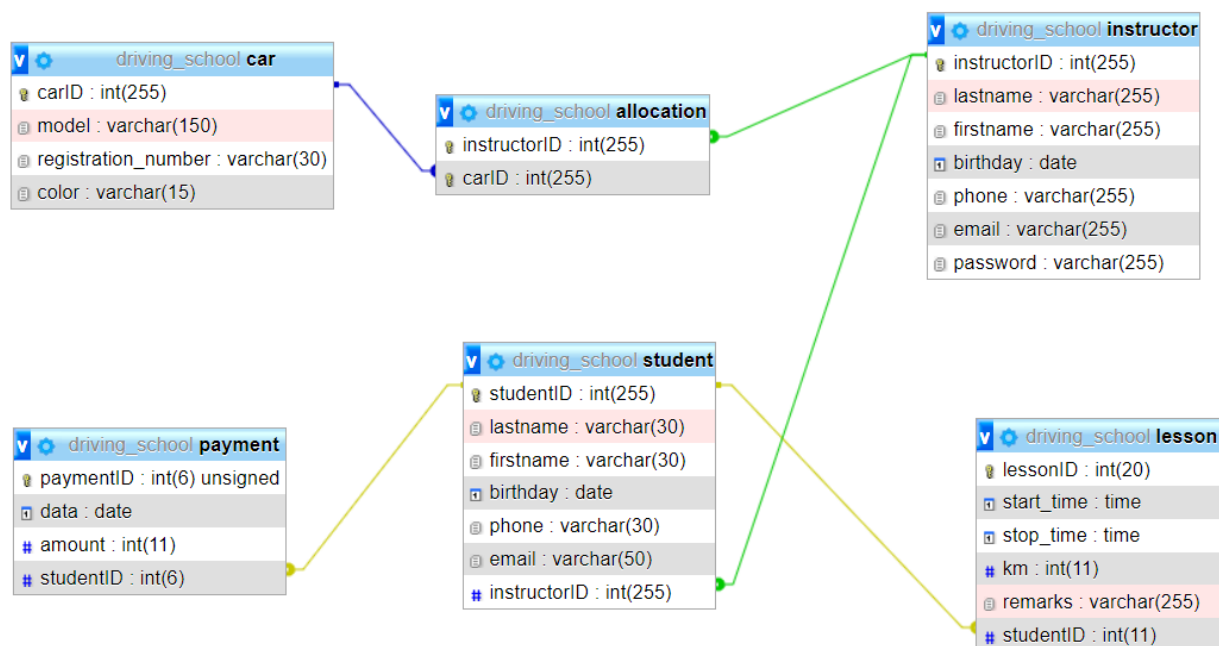
**INSTRUCTOR - STUDENT** : relatie **1:N** deoarece un instructor poate avea mai multi student.

**INSTRUCTOR - CAR** : relatie **N:N** deoarece un instructor poate folosi mai multe masini, iar o masina poate fi folosita de mai multi instructor. De aceea am facut legatura prin tabela "**ALLOCATION**".

**STUDENT - PAYMENT** : relatie **1:N** deoarece un student poate efectua mai multe plati, plata se face per lectie.

**STUDENT - LESSON** : relatie **1:N** deoarece un student poate participa mai multe ore de condus (lectii).

- Diagrama bazei de date:



- Functionalitatea aplicatiei:

Aceasta este pagina principala a aplicatiei unde ne putem loga, daca avem cont, iar daca nu, putem apasa pe **“Register”** pentru a ne crea un cont nou

Logare:



Crearea contului :



### REGISTER

Register

Already have an account? [Login](#)

Dupa ce ne am conectat, vom ajunge in admin page.

Hi, **Ioan Matei** !

Students

Cars

Statistic

Update Profile

Logout

➤ Butonul “**Students**” unde putem vedea toti student instructorului cu care suntem logati.

In cadrul acestei pagini avem buton pentru:

- “Add New Student” pentru a adauga un nou student
- “View” pentru a vedea detalii despre studentul selectat
- “Lesson” pentru a vedea detalii despre lectiile la care a participat studentul respectiv si in cadrul paginii “Lesson” avem un buton pentru adaugarea unei noi lectii “Add New Lesson”
- “Payment” – detalii despre platile studentului si in cadrul paginii “Payment” avem un buton pentru adaugarea unei noi lectii “Add New Payment”
- “Edit” pentru a edita datele studentului
- “Delete ” pentru a sterge un anumit student

← → ↻

localhost/projects/students.php

🔖 ★

| Students   |           |            |                      |            |                             | <div>Add New StudentBack</div> |  |
|------------|-----------|------------|----------------------|------------|-----------------------------|--------------------------------|--|
| First Name | Last Name | Birthday   | Email                | Phone      | Action                      |                                |  |
| Rares      | Turcu     | 1981-01-28 | turcurares@gmail.com | 0722653412 | ViewLessonPaymentEditDelete |                                |  |
| Ilinca     | Busu      | 1976-04-03 | busuilinca@gmail.com | 0755343412 | ViewLessonPaymentEditDelete |                                |  |

➤ Butonul “Cars” unde putem vedea toate masinile din aceasta scoala de soferi

In cadrul acestei pagini avem buton pentru:

- “Add New Car” pentru a adauga un noua masina
- “View Instructors” pentru a vedea instructorii care folosesc aceasta masina
- “Delete ” pentru a sterge o anumita masina

| Cars            |                     |       |                                  | <a href="#">Add New Car</a> | <a href="#">Back</a> |
|-----------------|---------------------|-------|----------------------------------|-----------------------------|----------------------|
| Model           | Registration Number | Color | Action                           |                             |                      |
| BMW             | CT 75 YVS           | white | <a href="#">View Instructors</a> | <a href="#">Delete</a>      |                      |
| Dacia           | B 20 HQT            | black | <a href="#">View Instructors</a> | <a href="#">Delete</a>      |                      |
| Dacia Duster    | B 999 TET           | blue  | <a href="#">View Instructors</a> | <a href="#">Delete</a>      |                      |
| Volkswagen Polo | B 998 ETT           | black | <a href="#">View Instructors</a> | <a href="#">Delete</a>      |                      |
| Volkswagen Golf | B 22 AAA            | white | <a href="#">View Instructors</a> | <a href="#">Delete</a>      |                      |
| Dacia Duster    | B 67 BAB            | red   | <a href="#">View Instructors</a> | <a href="#">Delete</a>      |                      |

➤ Butonul “Update Profile”

In cadrul acestei pagini putem edita datele instructorului cu care suntem logati.

| Profile Edit  | <a href="#">Back</a> |
|---|----------------------|
| Last name:  |                      |
| <input type="text" value="Preda"/>                  |                      |
| First name:   |                      |
| <input type="text" value="Iulian"/>                 |                      |
| Birthday:   |                      |
| <input type="text" value="1970-10-14"/>             |                      |
| Phone:  |                      |
| <input type="text" value="0722273412"/>             |                      |
| Email:  |                      |
| <input type="text" value="predaiulian@yahoo.com"/>  |                      |
| Old password:                                       |                      |
| <input type="text" value="Your previous password"/> |                      |
| New password:                                       |                      |
| <input type="text" value="Your new password"/>      |                      |
| <a href="#">Update Profile</a>                      |                      |

- Butonul “**Logout**” – pentru a ne deloga
- Butonul “**Statistic**” pentru statistici.

- **Interogari simple :**

1. Instructorii care au mai putin de X studenti.

```
SELECT i.lastname, i.firstname, COUNT(s.studentID) as Nr_Stud
FROM instructor i INNER JOIN student s
ON i.instructorID = s.instructorID
GROUP BY i.lastname, i.firstname
HAVING COUNT(s.studentID) <= $student1
```

Driving school statistic

Back

Instructorii care au mai mult de  studenti

Show

Instructorii care au mai mult de 3 studenti sunt:

| Nume instructor | Prenume instructor | Nr studenti |
|-----------------|--------------------|-------------|
| Preda           | Iulian             | 2           |

2. Numarul total de km pentru studentul cu numele x si prenumele y.

```
SELECT s.lastname, s.firstname, SUM(l.km) AS Nr_km
FROM student s INNER JOIN lesson l
ON s.studentID = l.studentID
WHERE s.lastname = '$student_lname' AND s.firstname = '$student_fname'
```

Numarul total de km pentru studentul cu numele  si prenumele 

Show

Numar total de km pentru studentul cu numele Georgescu si prenumele Ioana

| Nume student | Prenume student | Nr total km |
|--------------|-----------------|-------------|
| Georgescu    | Ioana           | 5           |

3. Instructorii care folosesc masina x.

```
SELECT i.lastname, i.firstname, c.model FROM instructor i
JOIN allocation a ON a.instructorID = i.instructorID
JOIN car c ON a.carID = c.carID
WHERE c.model = '$model'
```

Instructorii care folosesc masina

Show

Instructorii care folosesc masina **Volkswagen Polo**

| Nume instructor | Prenume instructor | Model masina    |
|-----------------|--------------------|-----------------|
| Preda           | Iulian             | Volkswagen Polo |

4. Studentul care a platit cel mai mult de la data 1 la data 2.

```
SELECT s.lastname, s.firstname, SUM(p.amount) AS Sum
FROM student s
LEFT JOIN payment p ON s.studentID = p.studentID
WHERE p.data BETWEEN '$date1' AND '$date2'
GROUP BY s.lastname, s.firstname
ORDER BY Sum DESC
LIMIT 1
```

Studentul care a platit cel mai mult de la data



la data



Show

Studentul care a platit cel mai mult de la data **2023-01-03** la data **2023-01-26**

| Nume student | Prenume student | Suma |
|--------------|-----------------|------|
| Busu         | Ilinca          | 256  |



5. Instructorii ai caror studenti au platit cel puțin “suma” lei.

```
SELECT i.lastname, i.firstname, s.lastname, s.firstname, p.amount FROM instructor i
INNER JOIN student s ON i.instructorID = s.instructorID
INNER JOIN payment p ON p.studentID = s.studentID
WHERE p.amount >= $suma
```

Instructorii ai caror studenti au platit cel puțin  lei [Show](#)

Instructorii ai caror studenti au platit cel puțin 100 lei

| Nume instructor | Prenume instructor | Nume student | Prenume student | Suma |
|-----------------|--------------------|--------------|-----------------|------|
| Matei           | Ioan               | Georgescu    | Ioana           | 100  |
| Preda           | Iulian             | Turcu        | Rares           | 100  |
| Preda           | Iulian             | Busu         | Ilinca          | 100  |

6. Studentii care au avut un timp de lectii mai mare de 3 ore.

```
SELECT s.lastname, s.firstname, TIMEDIFF(l.stop_time, l.start_time) AS Timp
FROM student s
INNER JOIN lesson l ON s.studentID = l.studentID
WHERE TIMEDIFF(l.stop_time, l.start_time) > '03:00:00'
```

Studentii care au avut un timp de lectii mai mare de 3 ore

| Nume student | Prenume student | Timp     |
|--------------|-----------------|----------|
| Georgescu    | elena           | 05:30:00 |
| Georgescu    | Ioana           | 05:30:00 |

- Interogari complexe :

7. Gasiti cei mai tineri studenti pentru fiecare instructor. Ordonati dupa data nasterii.

```
SELECT s.lastname, s.firstname, s.instructorID, s.birthday
FROM student s
WHERE (s.birthday) IN
      (SELECT max(s2.birthday) FROM student s2
       WHERE s2.instructorID = s.instructorID
       GROUP BY s.instructorID)
ORDER BY s.birthday
```

Cei mai tineri studenti pentru fiecare instructor, ordonati dupa data nasterii

| Nume student | Prenume student | Instructor ID | Data nasterii |
|--------------|-----------------|---------------|---------------|
| Turcu        | Rares           | 7             | 1981-01-28    |
| Moise        | Nelu            | 5             | 2022-12-29    |
| Georgescu    | Ioana           | 6             | 2023-01-04    |

8. Afisati toti studentii care nu au efectuat nicio plata.

```
SELECT s.lastname, s.firstname
FROM student s
WHERE s.studentID NOT IN
      (SELECT p.studentID
       FROM payment p JOIN student s1 ON p.studentID = s1.studentID)
```

Afisati toti studentii care nu au efectuat nicio plata.

| Nume student | Prenume student |
|--------------|-----------------|
| Moisa        | Vlad            |
| Georgescu    | elena           |
| seceleanu    | elena           |
| Moise        | Nelu            |
| Tataru       | Mihaela         |
| Popescu      | Ionel           |
| Bradescu     | Cristina        |

9. Afisati numarul de lectii pe care le are fiecare student.

```
SELECT s.lastname, s.firstname, (  
    SELECT COUNT(*) FROM lesson l  
    WHERE s.studentID = l.studentID) AS Nr_lectii  
FROM student s;
```

Afisati numarul de lectii pe care le are fiecare student

| Nume student | Prenume student | Nr lectii |
|--------------|-----------------|-----------|
| Moisa        | Vlad            | 2         |
| Georgescu    | elena           | 3         |
| seceleanu    | elena           | 0         |
| Moise        | Nelu            | 0         |
| Georgescu    | Ioana           | 1         |
| Tataru       | Mihaela         | 1         |
| Popescu      | Ionel           | 2         |
| Bradescu     | Cristina        | 2         |
| Turcu        | Rares           | 3         |
| Busu         | Ilinca          | 2         |

10. Afisati numele si prenumele instructorilor care au studenti cu numele x.

```
SELECT i.lastname, i.firstname  
FROM instructor i  
WHERE EXISTS(SELECT * FROM student s WHERE s.instructorID = i.instructorID AND s.lastname =  
'$student_lname10')
```

Afisati numele si prenumele instructorilor care au studenti cu numele  [Show](#)

Numele si prenumele instructorilor care au studenti cu numele **Georgescu**

| Nume instructor | Prenume instructor |
|-----------------|--------------------|
| Marinescu       | Ioan               |
| Matei           | Ioan               |