

UNIVERSITATEA POLITEHNICA din BUCUREȘTI

Facultatea de Electronică, Telecomunicații și Tehnologia Informației

**Programarea interfețelor
pentru baze de date**

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Cerința

Creați două aplicații care să conțină o bază de date creată în sistemul de gestiune a bazelor de date MySQL și două interfețe la aceasta (baza de date este comună). La crearea interfețelor se vor folosi două tehnologii (la alegere: JSP, Hibernate, JPA, .NET, Python+Django, Python+Flask etc.). Interfețele vor trebui să permită utilizatorului să execute următoarele operații pe toate tabele: vizualizare, adăugare, modificare și ștergere de date. Vizualizarea tabelelor de legătură va presupune vizualizarea datelor referite din celelalte tabele.

Tabelele alocate: Categories, Movies.

Asocierea: M:N.

Baza de date

Baza de date folosită pentru aceste două aplicații a fost creată folosind tehnologia MySQL. MySQL este un sistem open-source de gestionare a bazelor de date relaționale^{[1][2]}. Numele său este o combinație între „My”, numele fiicei co-fondatorului Michael Widenius și „SQL”, abrevierea pentru Structured Query Language. O bază de date relațională organizează datele în unul sau mai multe tabele de date în care tipurile de date pot fi legate între ele; aceste relații ajută la structurarea datelor. SQL este un limbaj folosit pentru a crea, modifica și extrage date din baza de date relațională, precum și pentru a controla accesul utilizatorilor la baza de date.

Data de bază a fost creată folosind tool-ul de gestionare, administrare și dezvoltare a sistemelor MySQL: MySQL Workbench 8.0 CE.

Mai întâi vom descrie structural baza de date construită.

Baza de date în sine constă în trei tabele. Prima tabelă conține categorii de filme (Horror, Thriller, Acțiune etc.) și atributele sale (Audiență, Temă, Setting etc.).

A treia tabelă conține filmele și atributele sale (Titlu, PG Rating, Lungime, Rating Mediu etc.).

Ultima tabelă va avea afișările acestor filme la un cinema, având detaliile necesare stocate (Locație Cinema, Nume cinema, ora, locuri libere etc.).

The diagram shows two entity sets, 'Categories' and 'Movies', represented by rectangles. They are connected by a line with a diamond-shaped relationship symbol in the middle. The line from 'Categories' to the diamond is labeled 'M', and the line from the diamond to 'Movies' is labeled 'N', indicating a many-to-many relationship.

```

erDiagram
    Category ||--}| Screening : "1:M"
    Screening ||--}| Movie : "N:1"

    Category {
        string Category_ID PK
        string Name
        string Target_Audience
        string Setting
        string Theme
        string Production
    }

    Screening {
        string Screening_ID PK, NN, UN, AI
        string Movie_ID FK, UN
        string Category_ID FK, UN
        string Cinema
        float Ticket_Price UN
        string Date
        string Time
        string Location
        int Seats_Left UN
    }

    Movie {
        string Movie_ID PK, NN, UN, AI
        string Title
        string PG_Rating
        float Budget UN
        string Director
        string Language
        string Release_Date
        float Average_Reviews UN
        int Length
    }

```

[illegible]

movie - Table




Table Name:










movie

Charset/Collation:

utf8mb4

utf8mb4_0900_ai_ci

Comments:

Column Name	Datatype	PK	NN	UQ	B	UN	ZF	AI	G	Default/Expression
 idMovie	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
 Title	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 pg_rating	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 budget	FLOAT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 Director	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 Language	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 release_date	DATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 average_reviews	INT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 length	TIME	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL

screening - Table




Table Name:










screening

Charset/Collation:

utf8mb4

utf8mb4_0900_ai_ci

Comments:

Column Name	Datatype	PK	NN	UQ	B	UN	ZF	AI	G	Default/Expression
 idScreening	BIGINT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
 idMovie	BIGINT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 idCategory	BIGINT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 cinema	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 ticket_price	FLOAT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 date	DATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 time	TIME	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 location	VARCHAR(45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
 seats_left	INT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL

Unde:

PK- Primary Key

NN- Not Null

UN-Unsigned

AI-Auto Incrementing

Pentru fiecare categorie de date introdusa, ID-ul acesteia (idCategory, idMovie, idScreening) este Primary Key (Cheie Primara). Primary Key-ul este un camp care identifica in mod unic inregistrările unei tabele. Din acest motiv, campul se configura **Not Null** (incepe de la 1 numerotarea ID-ului), **Unsigned** (Nu exista ID negativ), **Auto-Incrementing** (nu se introduce de mana ID-ul, acesta se incrementeaza automat cand se introduce noi date).

Pentru tabela Screening, Id-urile pentru film si categorie sunt foreign keys. Foreign key (cheia straina) este un set de attribute intr-un tabel e refera o cheie primara a altui tabel.

Configuram pentru Tabelul Screening aceste foreign keys:

The screenshot shows the configuration for a table named 'screening'. The 'Table Name' is 'screening', and the 'Charset/Collation' is 'utf8mb4'. Below this, there is a table listing foreign keys:

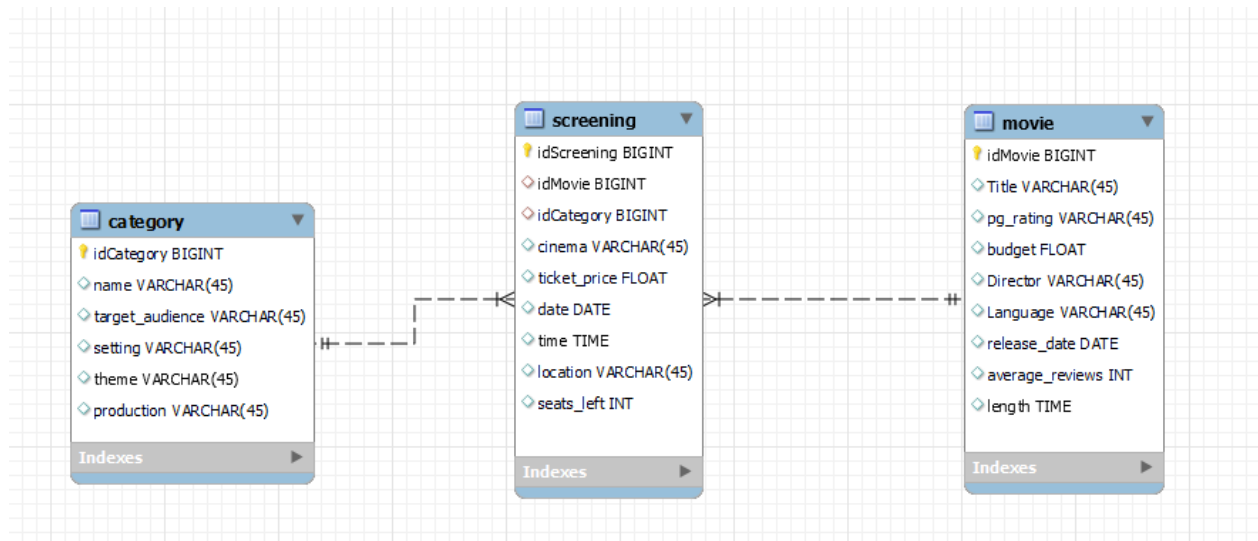
Foreign Key Name	Referenced Table
fk1_idCategory	`categories_movies`.`category`
fk2_idMovie	`categories_movies`.`movie`

Below the table configuration, there are 'Foreign Key Options':

- On Update: CASCADE
- On Delete: CASCADE
- ☐ Skip in SQL generation

Daca se sterge sau updateaza un camp dintr-un, se modifica automat si informatiile(sau se sterg) cele in legatura cu acest tabel. (De exemplu: Se sterge campul din Movies cu ID=13. Astfel, daca in Tabela screening se afla o programare cu acel film, se va sterge acea programare).

Diagrama EER



În diagrama de mai sus putem observa legătura dintre cele 3 tabele, cu tabelul “Screening” funcționând pe post de tabel intermediar. Asocierea funcționează în felul următor:

- Între Category și Screening avem relația 1:N (one to many).
- Între Movie și Screening avem relația 1:N.
- Între Category și Movie avem relația M:N (many to many), conform listei de subiecte.

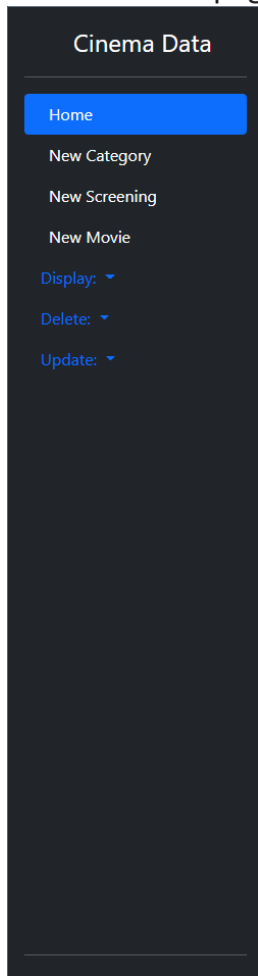
Tehnologie utilizată

Flask este un micro web framework scris în Python. Este clasificat ca un micro-framework deoarece nu necesită anumite instrumente sau biblioteci.[3] Nu are un strat de abstractizare a bazei de date, validare de formulare sau orice alte componente în care bibliotecile third-party preexistente oferă funcții comune. Cu toate acestea, Flask poate sustine extensii ce pot adăuga caracteristici aplicației ca și cum ar fi implementate în Flask însuși. Există extensii pentru mappere obiect-orientate, validarea formularelor, gestionarea încărcării, diverse tehnologii de autentificare deschisă și câteva instrumente comune legate de cadru.[4]

Aplicațiile care folosesc cadrul Flask includ Pinterest și LinkedIn.[5][6]

Aplicația a fost scrisă folosind IDE-ul PyCharm Community Edition, ce este capabil să hosteze un server local pe care este rulat aplicația web.

Pagina de start a interfeței o reprezintă fișierul index.html. De aici putem naviga către celelalte pagini disponibile.



Primele trei optiuni dupa Home sunt pentru a introduce noi date in baza de date.
Dupa cum zice si scrisul pe buton, new category introduce o noua categorie:



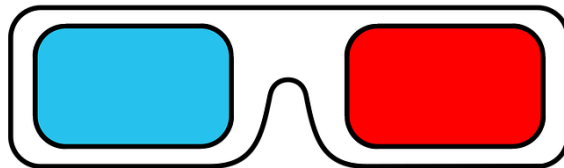
New Category

You can enter new data for a category here.

Enter Category Name
Enter Target Audience
Enter Setting
Enter Theme
Enter Type of Production

Submit Data

New Screening:



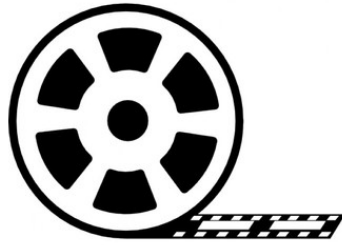
New Screening

You can enter new data for a screening here.

Enter Movie ID	Enter Category ID
Enter Cinema Name	
Enter Ticket Price	
Enter Screening Date	
Enter Screening Hour	
Enter Cinema Location	
Enter Number of Seats left	

Submit Data

New Movie:



New Movie

You can enter new data for a movie here.

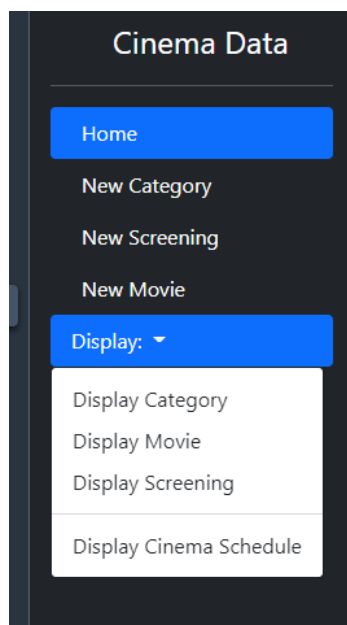
Enter Movie Title
Enter PG Rating
Enter Movie Budget
Enter Movie Director
Enter Language
Enter Release Date (YY-DD-MM format)
Enter Average Reviews
Enter Movie Length

Submit Data

Pentru adaugare, pur si simplu se scrie in text box-uri datele dorite sa se introduce si se apasa pe submit.

Pentru o noua afisare, se introduce ID-ul fimului si ID-ul categoriei corespunzator filmului.

Pentru vizualizare, se apasa pe butonul "Display:" care este un meniu dropdown:



Categorii Afisate:

Category ID	Name	Target audience	Setting	Theme	Production
3	Comedy	pg13	modern	school	indie
4	actiune	pg13	Futuristic	hero	blockbuster
5	actiune	pg13	Futuristic	hero	blockbuster
7	actiune	pg13	Futuristic	hero	blockbuster
8	horror	pg17	Medieval	Ghosts and witches	Indie
9	thriller	pg13	Tokyo	Racing	blockbuster
11	thriller	pg17	Medieval	hero	Indie

Filme Afisate:

Movie ID	Title	PG rating	Buget	Director	Language	Release Date	Average Reviews	Length
13	Ioan Sfoara	PG17	15000000.0	Marutza	Romana	2022-04-10	8	1:56:00
14	Razboiul Austro-Ungar	PG17	10000000.0	John Michael	English	2001-10-05	10	2:34:00

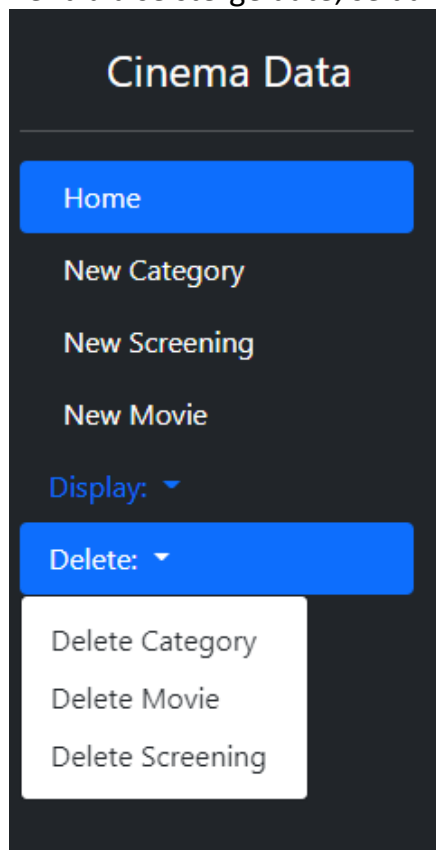
Afisari:

Screening ID	Movie ID	Category ID	Cinema	Ticket Price	Date of Screening	Time of day	Location	Seats left
7	13	3	Cinema City	16.9	2022-12-02	16:45:00	Bucharest	12
8	14	8	Hollywood Multiplex	20.5	2022-10-10	21:00:00	Timisoara	14

Pentru a vedea o programare la cinema , se vizualizeaza “Display Cinema Schedule”

Title	PG rating	Language	Length	Cinema	Location	Date	Time	Ticket Price	Seats left
Ioan Sfoara	PG17	Romana	1:56:00	Cinema City	Bucharest	2022-12-02	16:45:00	16.9	12
Razboiul Austro-Ungar	PG17	English	2:34:00	Hollywood Multiplex	Timisoara	2022-10-10	21:00:00	20.5	14

Pentru a se sterge date, se da click pe meniul drop-down “Delete:”



Si se introduce ID-ul dorit sa se stearga.
Exemplu pentru film:



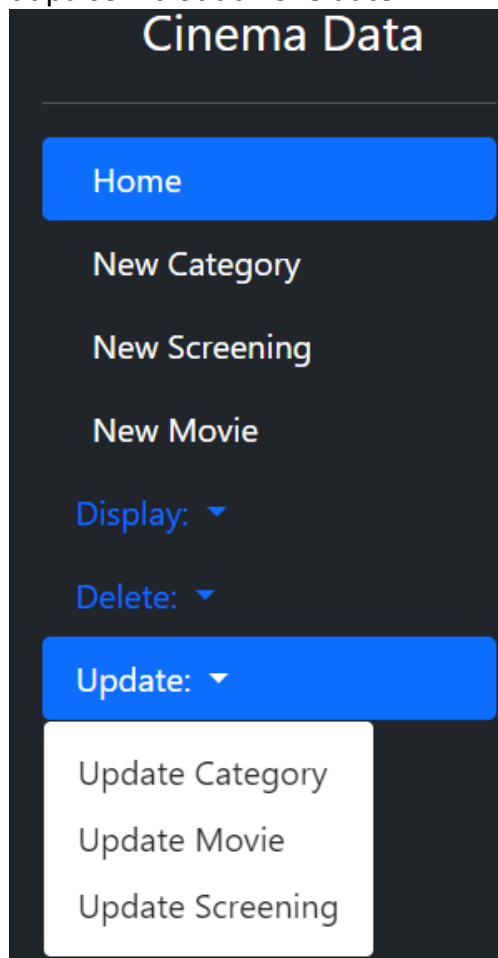
Delete Movie

You can delete movie data here.

Enter Movie ID

Confirm Deletion

Pentru modificările tabelelor prezente, vom alege butonul “Update:”, si un form similar cu cel de la adaugare va fi afisat. Se introduce in plus ID-ul datei ce vrea modificata si dupa se introduc noile date.





Update Category

You can update data for a category here.

Enter Category ID
Enter Category Name
Enter Target Audience
Enter Setting
Enter Theme
Enter Type of Production
Submit Data

Explicația codului

- **Initializare FLASK**

```
# Store this code in 'app.py' file
from flask import Flask, render_template, request, redirect, url_for, session
from flask_mysql import MySQL
import MySQLdb.cursors
import re

app = Flask(__name__)

app.config['MYSQL_HOST'] = 'localhost'
app.config['MYSQL_USER'] = 'root'
app.config['MYSQL_PASSWORD'] = 'password'
app.config['MYSQL_DB'] = 'categories_movies'

mysql = MySQL(app)
```

In prima faza se importa librariile necesare pentru a gestiona o baza de date MySQL si a unui site web, folosind framework-ul flask.

Se creeaza o noua clasa de tip flask, numita app.

Se face conexiunea la serverul mysql , stiind user-ul si parola si se specifica baza de data folosita.

- Homepage

```
@app.route('/')

@app.route("/index")
def index():
    return render_template("index.html")
```

Fiecare functie route are ca rol sa creeze codul back-end al sublink-ului respectiv din website, avand numele sublink-ului atasat. Astfel, pentru pagina home numita "index", doar se foloseste functia de render a unei pagini html externe.

Paginile HTML sunt construite folosind frameworkul de CSS si JS, Bootstrap.

Cod HTML:

```
<div class="d-flex flex-column vh-100 flex-shrink-0 p-3 text-white bg-dark"
style="width: 250px;"> <a href="/" class="d-flex align-items-center mb-3 mb-
md-0 me-md-auto text-white text-decoration-none"> <svg class="bi me-2"
width="40" height="32"> </svg> <span class="fs-4">Cinema Data </span> </a>
<hr>
<ul class="nav nav-pills flex-column mb-auto">
<li class="nav-item"> <a href="#" class="nav-link active" aria-
current="page"> <i class="fa fa-home"></i><span class="ms-2">Home</span> </a>
</li>
<li> <a href="http://127.0.0.1:5000/categoryintroduce" class="nav-
link text-white"> <i class="fa fa-dashboard"></i><span class="ms-2">New
Category</span> </a> </li>
<li> <a href="http://127.0.0.1:5000/screeningintroduce" class="nav-
link text-white"> <i class="fa fa-first-order"></i><span class="ms-2">New
Screening</span> </a> </li>
<li> <a href="http://127.0.0.1:5000/movieintroduce" class="nav-link
text-white"> <i class="fa fa-cog"></i><span class="ms-2">New Movie</span>
</a> </li>

<li class="nav-item dropdown">
<a class="nav-link dropdown-toggle" href="#" id="navbarDropdown1"
role="button" data-toggle="dropdown" aria-haspopup="true" aria-
expanded="false">
Display:
</a>
<div class="dropdown-menu" aria-labelledby="navbarDropdown">
<a class="dropdown-item"
href="http://127.0.0.1:5000/categoriesdisplay">Display Category </a>
<a class="dropdown-item"
href="http://127.0.0.1:5000/moviesdisplay">Display Movie</a>
<a class="dropdown-item"
href="http://127.0.0.1:5000/screeningdisplay">Display Screening</a>
<div class="dropdown-divider"></div>
<a class="dropdown-item"
href="http://127.0.0.1:5000/moviesANDscreeningdisplay">Display Cinema
Schedule</a>
</div>
</li>
```

```

        <li class="nav-item dropdown">
            <a class="nav-link dropdown-toggle" href="#" id="navbarDropdown2"
role="button" data-toggle="dropdown" aria-haspopup="true" aria-
expanded="false">
                Delete:
            </a>
            <div class="dropdown-menu" aria-labelledby="navbarDropdown">
                <a class="dropdown-item"
href="http://127.0.0.1:5000/categorydelete">Delete Category </a>
                <a class="dropdown-item"
href="http://127.0.0.1:5000/moviedelete">Delete Movie</a>
                <a class="dropdown-item"
href="http://127.0.0.1:5000/screeningdelete">Delete Screening</a>
            </div>
        </li>
        <li class="nav-item dropdown">
            <a class="nav-link dropdown-toggle" href="#" id="navbarDropdown3"
role="button" data-toggle="dropdown" aria-haspopup="true" aria-
expanded="false">
                Update:
            </a>
            <div class="dropdown-menu" aria-labelledby="navbarDropdown">
                <a class="dropdown-item"
href="http://127.0.0.1:5000/categoryupdate">Update Category </a>
                <a class="dropdown-item"
href="http://127.0.0.1:5000/movieupdate">Update Movie</a>
            </div>
        </li>
    </ul>
    <hr>

    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">

    <!-- Bootstrap CSS -->
    <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css
" rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

    <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"
integrity="sha384-
KJ3o2DKtIkVYIK3UENzmM7KCKRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN"
crossorigin="anonymous"></script>
    <script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.j
s" integrity="sha384-
ApNbgh9B+Y1QKt3Rn7W3mgPpxhU9K/ScQsAP7hUibX39j7fakFPskvXusvfa0b4Q"
crossorigin="anonymous"></script>
    <script

```

```
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"
integrity="sha384-
JZR6Spejh4U02d8jOt6vLEHfe/JQGiRRSQQxSfFWpi1MquVdAyjUar5+76PVCmYl"
crossorigin="anonymous"></script>
```

Se folosesc template-uri deja create de Bootstrap pentru a se face un meniu simplu, vertical cu diferite meniuri dropdown.

- Introducere Date

Introducere Filme

```
@app.route('/movieintroduce', methods=['GET', 'POST'])
def movieintroduce():
    msg = ''
    if request.method == 'POST' and 'title' in request.form and 'pg_rating' in
request.form and 'budget' in request.form and 'director' in request.form and
'language' in request.form and 'release_date' in request.form and
'avg_reviews' in request.form and 'length' in request.form:
        title = request.form['title']
        pg_rating = request.form['pg_rating']
        budget = request.form['budget']
        director = request.form['director']
        language = request.form['language']
        release_date = request.form['release_date']
        avg_reviews = request.form['avg_reviews']
        length = request.form['length']
        cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)
        cursor.execute("INSERT INTO `categories_movies`.`movie` (`Title`,
`pg_rating`, `budget`, `Director`, `Language`, `release_date`,
`average_reviews`, `length`) VALUES (%s,%s,%s,%s,%s,%s,%s,%s)", (title,
pg_rating, budget, director, language, release_date, avg_reviews, length))
        mysql.connection.commit()
        msg = 'You have successfully registered !'
    elif request.method == 'POST':
        msg = 'Please fill out the form !'
    return render_template('movieintroduce.html', msg = msg)
```

Pentru introducere de date se foloseste metode POST si GET, acestea fiind un mod de generare a unui form pentru a interoga utilizatorul web de informatii care sunt dupa extrase de catre form, dupa ce au fost introduse.

Astfel, se creeaza variabile in care se stocheaza string-ul introdus de utilizator in fiecare casuta din form.

Dupa aceea se efectueaza conexiunea catre serverul MySQL si se executa o comanda query pentru a introduce aceste noi date. La final se returneaza un mesaj de succes si se returneaza functia de render a paginii html.

Cod HTML:


```

<link href="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/css/bootstrap.min.css"
rel="stylesheet" id="bootstrap-css">
<script
src="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/js/bootstrap.min.js"></script>
<script
src="//cdnjs.cloudflare.com/ajax/libs/jquery/3.2.1/jquery.min.js"></script>
<!------- Include the above in your HEAD tag ----->

<div class="container forget-password">
    <div class="row">
        <div class="col-md-12 col-md-offset-4">
            <div class="panel panel-default">
                <div class="panel-body">
                    <div class="text-center">
                        
                        <h2 class="text-center">New Movie</h2>
                        <p>You can enter new data for a movie
here.</p>
                        <form id="register-form" role="form"
autocomplete="off" class="form" method="post">
                            <div class="form-group">
                                <div class="input-group">
                                    </div>
                                </div>
                                <div class="form-group">
                                    <div class="input-group">
                                        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                                        <input type="text" name="title"
placeholder="Enter Movie Title" class="form-control" id="title"
required></br></br>
                                    </div>
                                    <div class="input-group">
                                        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                                        <input type="text"
name="pg_rating" placeholder="Enter PG Rating" class="form-control"
id="pg_rating" required></br></br>
                                    <div class="input-group">
                                        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                                        <input type="text" name="budget"
placeholder="Enter Movie Budget" class="form-control" id="budget"
required></br></br>
                                    <div class="input-group">
                                        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                                        <input type="text"
name="director" placeholder="Enter Movie Director" class="form-control"
id="director" required></br></br>

```

```

        </div>

        </div>
        <div class="input-group">
            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
            <input type="text"
name="language" placeholder="Enter Language" class="form-control"
id="language" required></br></br>
        </div>

        </div>
        <div class="input-group">
            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
            <input type="text"
name="release_date" placeholder="Enter Release Date (YY-DD-MM format)"
class="form-control" id="release_date" required></br></br>
        </div>

        <div class="input-group">
            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
            <input type="text"
name="avg_reviews" placeholder="Enter Average Reviews" class="form-control"
id="avg_reviews" required></br></br>
        </div>

        <div class="input-group">
            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
            <input type="text" name="length"
placeholder="Enter Movie Length" class="form-control" id="length"
required></br></br>
        </div>
        </div>
        <div class="form-group">
            <input name="btnForget" class="btn
btn-lg btn-primary btn-block btnForget" value="Submit Data" type="submit">
        </div>

    </form>
</div>
</div>
</div>
</div>
</div>
</div>

<!-- Required meta tags -->
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<!-- Bootstrap CSS -->
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css
" rel="stylesheet" integrity="sha384-

```

```
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

    <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"
integrity="sha384-
KJ3o2DkTlIkVYIK3UENzmM7KCKRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN"
crossorigin="anonymous"></script>
<script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.js"
integrity="sha384-
ApNbgh9B+Y1QKtv3Rn7W3mgPxhU9K/ScQsAP7hUibX39j7fakFPskvXusvfa0b4Q"
crossorigin="anonymous"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"
integrity="sha384-
JZR6Spejh4U02d8jOt6vLEHfe/JQGiRRSQQxSfFWpi1MquVdAyjUar5+76PVCmYl"
crossorigin="anonymous"></script>
```

Folosind form-uri definite in Bootstrap, si cu mare atentie ca numele si id-urile din form sa fie aceleasi cu cele din [app.route@\(\)](#), ca functia din codul back-end de python sa recunoasca string-ul introdus.

Toate celealte Cod-uri sunt identice, cu schimbarea ca se modifica numele variabilelor si comanda query, adresandu-ne la alta tabela de date.

Introducere Categorii

```
@app.route('/categoryintroduce', methods = ['GET', 'POST'])
def categoryintroduce():
    msg = ''
    if request.method == 'POST' and 'name' in request.form and
'target_audience' in request.form and 'setting' in request.form and 'theme'
in request.form and 'production' in request.form:
        name = request.form['name']
        target_audience = request.form['target_audience']
        setting = request.form['setting']
        theme = request.form['theme']
        production = request.form['production']
        cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)
        cursor.execute("INSERT INTO `categories_movies`.`category` (`name`,
`target_audience`, `setting`, `theme`, `production`) VALUES
(%s,%s,%s,%s,%s)",(name, target_audience, setting, theme, production))
        mysql.connection.commit()
        msg = 'You have successfully registered !'
    elif request.method == 'POST':
        msg = 'Please fill out the form !'
    return render_template('categoryintroduce.html', msg = msg)
```

Cod HTML:

```
<link href="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/css/bootstrap.min.css"
rel="stylesheet" id="bootstrap-css">
<script
src="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/js/bootstrap.min.js"></script>
<script
src="//cdnjs.cloudflare.com/ajax/libs/jquery/3.2.1/jquery.min.js"></script>
<!------- Include the above in your HEAD tag ----->

<div class="container forget-password">
    <div class="row">
        <div class="col-md-12 col-md-offset-4">
            <div class="panel panel-default">
                <div class="panel-body">
                    <div class="text-center">
                        
                        <h2 class="text-center">New Category</h2>
                        <p>You can enter new data for a category
here.</p>
                        <form id="register-form" role="form"
autocomplete="off" class="form" method="post">
                            <div class="form-group">
                                <div class="input-group">

                                    </div>
                                </div>
                                <div class="form-group">
                                    <div class="input-group">
                                        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>

                                        <input type="text" name="name"
placeholder="Enter Category Name" class="form-control" id="name"
required></br></br>

                                    </div>
                                    <div class="input-group">
                                        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                                        <input type="text"
name="target_audience" placeholder="Enter Target Audience" class="form-
control" id="target_audience" required></br></br>

                                        <div class="input-group">
                                            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                                            <input type="text" name="setting"
placeholder="Enter Setting" class="form-control" id="setting"
required></br></br>

                                        </div>

                                    </div>
                                </div>
                            </div>
                        </div>
                    </div>
                </div>
            </div>
        </div>
    </div>
</div>
```

```

        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
        <input type="text" name="theme"
placeholder="Enter Theme" class="form-control" id="theme" required></br></br>

        <div class="input-group">
        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
        <input type="text"
name="production" placeholder="Enter Type of Production" class="form-control"
id="production" required></br></br>

        </div>

    </div>
</div>
<div class="form-group">
    <input name="btnForget" class="btn
btn-lg btn-primary btn-block btnForget" value="Submit Data" type="submit">
</div>

</form>
</div>
</div>
</div>
</div>
</div>
</div>

<!-- Required meta tags -->
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<!-- Bootstrap CSS -->
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css
" rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

    <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"
integrity="sha384-
KJ3o2DKtIkVYIK3UENzmM7KCkRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN"
crossorigin="anonymous"></script>
<script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.j
s" integrity="sha384-
ApNbgh9B+Y1QKtv3Rn7W3mgPxhU9K/ScQsAP7hUibX39j7fakFPskvXusvfa0b4Q"
crossorigin="anonymous"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"
integrity="sha384-
JZR6Spejh4U02d8jOt6vLEHfe/JQGiRRSQQxSfFWpi1MquVdAyjUar5+76PVCmYl"
crossorigin="anonymous"></script>

```

Introducere Screenings

```
@app.route('/screeningintroduce', methods=['GET', 'POST'])
def screeningintroduce():
    msg = ''
    if request.method == 'POST' and 'idmovie' in request.form and 'idcat' in request.form and 'cinema' in request.form and 'ticket_price' in request.form and 'date' in request.form and 'time' in request.form and 'location' in request.form and 'seats_left' in request.form:
        idmovie = request.form['idmovie']
        idcat = request.form['idcat']
        cinema = request.form['cinema']
        ticket_price = request.form['ticket_price']
        date = request.form['date']
        time = request.form['time']
        location = request.form['location']
        seats_left = request.form['seats_left']
        cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)
        cursor.execute("INSERT INTO `categories_movies`.`screening` (`idMovie`, `idCategory`, `cinema`, `ticket_price`, `date`, `time`, `location`, `seats_left`) VALUES (%s,%s,%s,%s,%s,%s,%s,%s)", (idmovie, idcat, cinema, ticket_price, date, time, location, seats_left))
        mysql.connection.commit()
        msg = 'You have successfully registered !'
    elif request.method == 'POST':
        msg = 'Please fill out the form !'
    return render_template('screeningintroduce.html', msg = msg)
```

Cod HTML:

```
<link href="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/css/bootstrap.min.css"
rel="stylesheet" id="bootstrap-css">
<script
src="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/js/bootstrap.min.js"></script>
<script
src="//cdnjs.cloudflare.com/ajax/libs/jquery/3.2.1/jquery.min.js"></script>
<!-- Include the above in your HEAD tag -->

<div class="container forget-password">
  <div class="row">
    <div class="col-md-12 col-md-offset-4">
      <div class="panel panel-default">
        <div class="panel-body">
          <div class="text-center">
            
            <h2 class="text-center">New Screening</h2>
            <p>You can enter new data for a screening
here.</p>
            <form id="register-form" role="form"
autocomplete="off" class="form" method="post">
              <div class="form-group">
                <div class="input-group">
```

```

        </div>
    </div>
    <div class="form-group">
        <div class="input-group">
            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
            <input type="number" min="0"
name="idmovie" placeholder="Enter Movie ID" class="form-control" id="idmovie"
required></br></br>
            <input type="number" min="0"
name="idcat" placeholder="Enter Category ID" class="form-control" id="idcat"
required></br></br>
        <div class="input-group">
            <input type="text" name="cinema"
placeholder="Enter Cinema Name" class="form-control" id="cinema"
required></br></br>
        </div>
        <div class="input-group">
            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
            <input type="number" min="0"
step="0.01" name="ticket_price" placeholder="Enter Ticket Price" class="form-
control" id="ticket_price" required></br></br>
        </div>
    </div>
    <div class="input-group">
        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
        <input type="text" name="date"
placeholder="Enter Screening Date" class="form-control" id="date"
required></br></br>
    </div>
    <div class="input-group">
        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
        <input type="text" name="time"
placeholder="Enter Screening Hour" class="form-control" id="time"
required></br></br>
    </div>
    </div>
    <div class="input-group">
        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
        <input type="text"
name="location" placeholder="Enter Cinema Location" class="form-control"
id="location" required></br></br>
    </div>
    <div class="input-group">
        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
        <input type="text"
name="seats_left" placeholder="Enter Number of Seats left" class="form-
control" id="seats_left" required></br></br>

```

```

        </div>
        <div class="form-group">
            <input name="btnForget" class="btn
btn-lg btn-primary btn-block btnForget" value="Submit Data" type="submit">
        </div>

    </form>
</div>
</div>
</div>
</div>
</div>
</div>

<!-- Required meta tags -->
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<!-- Bootstrap CSS -->
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css
" rel="stylesheet" integrity="sha384-
1BmE4kWbQ78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

    <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"
integrity="sha384-
KJ3o2DKtIkvYIK3UENzmM7KCkRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN"
crossorigin="anonymous"></script>
<script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.j
s" integrity="sha384-
ApNbgh9B+Y1QKtv3Rn7W3mgPxhU9K/ScQsAP7hUibX39j7fakFPskvXusvfa0b4Q"
crossorigin="anonymous"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"
integrity="sha384-
JZR6Spejh4U02d8jOt6vLEHfe/JQGiRRSQQxSfFWpi1MquVdAyjUar5+76PVCmYl"
crossorigin="anonymous"></script>

```

- **Update la date**

Codurile pentru a da update la unele date este in mod foarte similar, lucru schimbat fiind faptul ca se schimba comanda query, care va fi de tip UPDATE. Se adauga in form si ID-ul ce vrea sa fie schimbat.

Update Filme

```
@app.route('/movieupdate', methods = ['GET', 'POST'])
def movieupdate():
    msg = ''
    if request.method == 'POST' and 'idmovie' in request.form and 'title' in
request.form and 'pg_rating' in request.form and 'budget' in request.form and
'director' in request.form and 'language' in request.form and 'release_date'
in request.form and 'avg_reviews' in request.form and 'length' in
request.form:
        idmovie=request.form['idmovie']
        title = request.form['title']
        pg_rating = request.form['pg_rating']
        budget = request.form['budget']
        director = request.form['director']
        language = request.form['language']
        release_date = request.form['release_date']
        avg_reviews = request.form['avg_reviews']
        length = request.form['length']
        cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)
        cursor.execute("UPDATE `categories_movies`.`movie` SET `Title` = %s,
`pg_rating` = %s, `budget` = %s, `Director` = %s, `Language` = %s,
`release_date` = %s, `average_reviews` = %s, `length` = %s WHERE (`idMovie` =
%s);", (title, pg_rating, budget, director, language, release_date,
avg_reviews, length, idmovie))
        mysql.connection.commit()
        msg = 'You have successfully updated !'
    elif request.method == 'POST':
        msg = 'Please fill out the form !'
    return render_template('movieupdate.html', msg = msg)
```

Cod HTML:

```
<link href="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/css/bootstrap.min.css"
rel="stylesheet" id="bootstrap-css">
<script
src="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/js/bootstrap.min.js"></script>
<script
src="//cdnjs.cloudflare.com/ajax/libs/jquery/3.2.1/jquery.min.js"></script>
<!------- Include the above in your HEAD tag ----->

<div class="container forget-password">
    <div class="row">
        <div class="col-md-12 col-md-offset-4">
            <div class="panel panel-default">
                <div class="panel-body">
                    <div class="text-center">
                        
                        <h2 class="text-center">Update Movie</h2>
                        <p>You can update data for a movie here.</p>
                        <form id="register-form" role="form"
autocomplete="off" class="form" method="post">
```

```

        <div class="form-group">
            <div class="input-group">

                </div>
            </div>
            <div class="form-group">
                <div class="input-group">
                    <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                    <input type="number" min="0"
name="idmovie" placeholder="Enter Movie ID" class="form-control" id="idmovie"
required></br></br>

                    <div class="input-group">
                        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                        <input type="text" name="title"
placeholder="Enter Movie Title" class="form-control" id="title"
required></br></br>

                    </div>
                    <div class="input-group">
                        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                        <input type="text"
name="pg_rating" placeholder="Enter PG Rating" class="form-control"
id="pg_rating" required></br></br>

                    </div>

                    </div>
                    <div class="input-group">
                        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                        <input type="text" name="budget"
placeholder="Enter Movie Budget" class="form-control" id="budget"
required></br></br>

                    <div class="input-group">
                        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                        <input type="text"
name="director" placeholder="Enter Movie Director" class="form-control"
id="director" required></br></br>

                    <div class="input-group">
                        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                        <input type="text"
name="language" placeholder="Enter Language" class="form-control"
id="language" required></br></br>

                    </div>

                    </div>
                    <div class="input-group">
                        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                        <input type="text"
name="release_date" placeholder="Enter Release Date (YY-DD-MM format)"

```

```

class="form-control" id="release_date" required></br></br>
    </div>

    <div class="input-group">
        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
        <input type="text"
name="avg_reviews" placeholder="Enter Average Reviews" class="form-control"
id="avg_reviews" required></br></br>
    </div>

    <div class="input-group">
        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
        <input type="text" name="length"
placeholder="Enter Movie Length" class="form-control" id="length"
required></br></br>
    </div>
</div>
<div class="form-group">
    <input name="btnForget" class="btn
btn-lg btn-primary btn-block btnForget" value="Submit Data" type="submit">
</div>

</form>
</div>
</div>
</div>
</div>
</div>
</div>

<!-- Required meta tags -->
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<!-- Bootstrap CSS -->
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css
" rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

    <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"
integrity="sha384-
KJ3o2DKtIkvYIK3UENzmM7KCkRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN"
crossorigin="anonymous"></script>
<script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.j
s" integrity="sha384-
ApNbgh9B+Y1QKt3Rn7W3mgPxhU9K/ScQsAP7hUibX39j7fakFPskvXusvfa0b4Q"
crossorigin="anonymous"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"
integrity="sha384-

```

```
JZR6Spejh4U02d8jOt6vLEHfe/JQGiRRSQQxSfFWpi1MquVdAyjUar5+76PVCmYl"
crossorigin="anonymous"></script>
```

Update Categorii

```
@app.route('/categoryupdate', methods=['GET', 'POST'])
def categoryupdate():
    msg=''
    if request.method == 'POST' and 'idcat' in request.form and 'name' in
request.form and 'target_audience' in request.form and 'setting' in
request.form and 'theme' in request.form and 'production' in request.form:
        idcat=request.form['idcat']
        name = request.form['name']
        target_audience = request.form['target_audience']
        setting = request.form['setting']
        theme = request.form['theme']
        production = request.form['production']
        cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)
        cursor.execute("UPDATE categories_movies.category SET
name=%s,target_audience=%s,setting=%s,theme=%s,production=%s WHERE
idCategory=%s;", (name, target_audience, setting, theme, production,idcat))
        mysql.connection.commit()
        msg = 'You have successfully updated !'
    elif request.method == 'POST':
        msg = 'Please fill out the form !'
    return render_template('categoryupdate.html', msg = msg)
```

Cod HTML:

```
<link href="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/css/bootstrap.min.css"
rel="stylesheet" id="bootstrap-css">
<script
src="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/js/bootstrap.min.js"></script>
<script
src="//cdnjs.cloudflare.com/ajax/libs/jquery/3.2.1/jquery.min.js"></script>
<!------- Include the above in your HEAD tag ----->

<div class="container forget-password">
    <div class="row">
        <div class="col-md-12 col-md-offset-4">
            <div class="panel panel-default">
                <div class="panel-body">
                    <div class="text-center">
                        
                        <h2 class="text-center">Update Category</h2>
                        <p>You can update data for a category
```

here.</p>

```
<form id="register-form" role="form"
autocomplete="off" class="form" method="post">
  <div class="form-group">
    <div class="input-group">

      </div>
    </div>
    <div class="form-group">
      <div class="input-group">
        <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
        <input type="number" min="0"
name="idcat" placeholder="Enter Category ID" class="form-control" id="idcat"
required></br></br>

        <div class="input-group">
          <input type="text" name="name"
placeholder="Enter Category Name" class="form-control" id="name"
required></br></br>

        </div>
        <div class="input-group">
          <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
          <input type="text"
name="target_audience" placeholder="Enter Target Audience" class="form-
control" id="target_audience" required></br></br>
          </div>

        </div>
        <div class="input-group">
          <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
          <input type="text" name="setting"
placeholder="Enter Setting" class="form-control" id="setting"
required></br></br>

          <div class="input-group">
            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
            <input type="text" name="theme"
placeholder="Enter Theme" class="form-control" id="theme" required></br></br>

            <div class="input-group">
              <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
              <input type="text"
name="production" placeholder="Enter Type of Production" class="form-control"
id="production" required></br></br>

              </div>

            </div>
          </div>
          <div class="form-group">
            <input name="btnForget" class="btn
btn-lg btn-primary btn-block btnForget" value="Submit Data" type="submit">
```

```

        </div>

        </form>
    </div>
</div>
</div>
</div>
</div>
</div>

<!-- Required meta tags -->
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<!-- Bootstrap CSS -->
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

<script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"
integrity="sha384-
KJ3o2DkTlIkVYIK3UENzmM7KCKRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN"
crossorigin="anonymous"></script>
<script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.js"
integrity="sha384-
ApNbgh9B+Y1QKtv3Rn7W3mgPxhU9K/ScQsAP7hUibX39j7fakFPskvXusvfa0b4Q"
crossorigin="anonymous"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"
integrity="sha384-
JZR6Spejh4U02d8jOt6vLEHfe/JQGiRRSQQxSfFWpi1MquVdAyjUar5+76PVCmYl"
crossorigin="anonymous"></script>

```

Update Afisari

```

@app.route('/screeningupdate', methods = ['GET', 'POST'])
def screeningupdate():
    msg = ''
    if request.method == 'POST' and 'idScreening' in request.form and
'idmovie' in request.form and 'idcat' in request.form and 'cinema' in
request.form and 'ticket_price' in request.form and 'date' in request.form
and 'time' in request.form and 'location' in request.form and 'seats_left' in
request.form:
        idscreening=request.form['idScreening']
        idMovie = request.form['idmovie']
        idCat = request.form['idcat']
        cinema = request.form['cinema']
        ticket_price = request.form['ticket_price']
        date = request.form['date']
        time = request.form['time']
        location = request.form['location']
        seats_left = request.form['seats left']

```



```

name="idcat" placeholder="Enter Category ID" class="form-control" id="idcat"
required></br></br>

        <div class="input-group">
            <input type="text" name="cinema"
placeholder="Enter Cinema Name" class="form-control" id="cinema"
required></br></br>

        </div>
        <div class="input-group">
            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
            <input type="number" min="0"
step="0.01" name="ticket_price" placeholder="Enter Ticket Price" class="form-
control" id="ticket_price" required></br></br>
        </div>

        </div>
        <div class="input-group">
            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
            <input type="text" name="date"
placeholder="Enter Screening Date" class="form-control" id="date"
required></br></br>

        </div>
        <div class="input-group">
            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
            <input type="text" name="time"
placeholder="Enter Screening Hour" class="form-control" id="time"
required></br></br>

        </div>

        </div>
        <div class="input-group">
            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
            <input type="text"
name="location" placeholder="Enter Cinema Location" class="form-control"
id="location" required></br></br>

        </div>
        <div class="input-group">
            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
            <input type="text"
name="seats_left" placeholder="Enter Number of Seats left" class="form-
control" id="seats_left" required></br></br>

        </div>
        <div class="form-group">
            <input name="btnForget" class="btn
btn-lg btn-primary btn-block btnForget" value="Submit Data" type="submit">
        </div>

    </form>
</div>
</div>

```



```

        </div>
    </div>
</div>
</div>

<!-- Required meta tags -->
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<!-- Bootstrap CSS -->
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css
" rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

<script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"
integrity="sha384-
KJ3o2DKtIkvYIK3UENzmM7KCkRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN"
crossorigin="anonymous"></script>
<script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.js"
integrity="sha384-
ApNbgh9B+Y1QKtV3Rn7W3mgPxhU9K/ScQsAP7hUibX39j7fakFPskvXusvfa0b4Q"
crossorigin="anonymous"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"
integrity="sha384-
JZR6Spejh4U02d8jOt6vLEHfe/JQGiRRSQQxSfFWpi1MquVdAyjUar5+76PVCmYl"
crossorigin="anonymous"></script>

```

- **Afisarea Datelor**

Afisare Categorii

```

@app.route('/categoriesdisplay')
def categoriesdisplay():
    cursor = mysql.connection.cursor()
    users=cursor.execute("SELECT * FROM categories_movies.category")
    if users>0:
        displayVector=cursor.fetchall()
        return
    render_template('categoriesdisplay.html',displayVector=displayVector)

```

Afisarea se face prin executarea unei comenzi query ce da select la toate datele din tabela respectiva. Acestea se stocheaza intr-un vector alocat dinamic care este dupa “pasat” catre pagina HTML, care printr-un “for” creeaza un tabel de afisare ce trece prin tot vectorul.

Cod HTML:

```

<table class="table">
  <thead class="thead-dark">

```

```

        <tr>
            <th scope="col">Category ID</th>
            <th scope="col">Name</th>
            <th scope="col">Target audience</th>
            <th scope="col">Setting</th>
            <th scope="col">Theme</th>
            <th scope="col">Production</th>
        </tr>

    </thead>
    <tbody>
    {% for user in displayVector %}
        <tr>
            <td> {{user[0]}} </td>
            <td> {{user[1]}} </td>
            <td> {{user[2]}} </td>
            <td> {{user[3]}} </td>
            <td> {{user[4]}} </td>
            <td> {{user[5]}} </td>
        </tr>
    {% endfor %}
    </tbody>
</table>

<!-- Required meta tags -->
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<!-- Bootstrap CSS -->
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css
" rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

```

Afisare Filme

```

@app.route('/moviesdisplay')
def moviesdisplay():
    cursor = mysql.connection.cursor()
    users=cursor.execute("SELECT * FROM categories_movies.movie")
    if users>0:
        displayVector=cursor.fetchall()
        return
    render_template('moviesdisplay.html',displayVector=displayVector)

```

Cod HTML:

```

<table class="table">
    <thead class="thead-dark">
        <tr>
            <th scope="col">Movie ID</th>

```

```

        <th scope="col">Title</th>
        <th scope="col">PG rating</th>
        <th scope="col">Buget</th>
        <th scope="col">Director</th>
        <th scope="col">Language</th>
        <th scope="col">Release Date</th>
        <th scope="col">Average Reviews</th>
        <th scope="col">Length</th>

    </tr>

</thead>
<tbody>
{% for user in displayVector %}
    <tr>
        <td> {{user[0]}} </td>
        <td> {{user[1]}} </td>
        <td> {{user[2]}} </td>
        <td> {{user[3]}} </td>
        <td> {{user[4]}} </td>
        <td> {{user[5]}} </td>
        <td> {{user[6]}} </td>
        <td> {{user[7]}} </td>
        <td> {{user[8]}} </td>
    </tr>
{% endfor%}
</tbody>
</table>

<!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">

    <!-- Bootstrap CSS -->
    <link
href="https://cdn.jsdelivrivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css
" rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

```

Afisare Screening-uri

```

@app.route('/screeningdisplay')
def screeningdisplay():

```

```

        cursor = mysql.connection.cursor()
        users=cursor.execute("SELECT * FROM categories_movies.screening")
        if users>0:
            displayVector=cursor.fetchall()
            return
render_template('screeningdisplay.html',displayVector=displayVector)

```

Cod HTML:

```

<table class="table">
  <thead class="thead-dark">
    <tr>
      <th scope="col">Screening ID</th>
      <th scope="col">Movie ID</th>
      <th scope="col">Category ID</th>
      <th scope="col">Cinema</th>
      <th scope="col">Ticket Price</th>
      <th scope="col">Date of Screening</th>
      <th scope="col">Time of day</th>
      <th scope="col">Location</th>
      <th scope="col">Seats left</th>
    </tr>
  </thead>
  <tbody>
    {% for user in displayVector %}
      <tr>
        <td> {{user[0]}} </td>
        <td> {{user[1]}} </td>
        <td> {{user[2]}} </td>
        <td> {{user[3]}} </td>
        <td> {{user[4]}} </td>
        <td> {{user[5]}} </td>
        <td> {{user[6]}} </td>
        <td> {{user[7]}} </td>
        <td> {{user[8]}} </td>
      </tr>
    {% endfor %}
  </tbody>
</table>

<!-- Required meta tags -->
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<!-- Bootstrap CSS -->
<link
href="https://cdn.jsdelivrivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css
" rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

```

Afisare Programari Cinema

```
@app.route('/moviesANDscreeningdisplay')
def moviesANDscreeningdisplay():
    cursor = mysql.connection.cursor()
    users=cursor.execute("SELECT m.Title, m.pg_rating,
m.Language,m.length,s.cinema,s.location,s.date,s.time,s.ticket_price,
s.seats_left FROM categories_movies.movie m inner join
categories_movies.screening s using (idMovie);")
    if users>0:
        displayVector=cursor.fetchall()
        return
    render_template('moviesANDscreeningdisplay.html',displayVector=displayVector)
```

Afisarea de programari va folosi comanda query de SELECT folosind metoda inner-join, pentru a combina informatiile din mai multe tabele.

Cod HTML:

```
<table class="table">
  <thead class="thead-dark">
    <tr>
      <th scope="col">Title</th>
      <th scope="col">PG rating</th>
      <th scope="col">Language</th>
      <th scope="col">Length</th>
      <th scope="col">Cinema</th>
      <th scope="col">Location </th>
      <th scope="col">Date</th>
      <th scope="col">Time</th>
      <th scope="col">Ticket Price</th>
      <th scope="col">Seats left</th>

    </tr>
  </thead>
  <tbody>
    {% for user in displayVector %}
      <tr>
        <td> {{user[0]}} </td>
        <td> {{user[1]}} </td>
        <td> {{user[2]}} </td>
        <td> {{user[3]}} </td>
        <td> {{user[4]}} </td>
        <td> {{user[5]}} </td>
        <td> {{user[6]}} </td>
        <td> {{user[7]}} </td>
        <td> {{user[8]}} </td>
        <td> {{user[9]}} </td>

      </tr>
    {% endfor%}
  </tbody>
```

```

</table>

<!-- Required meta tags -->
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<!-- Bootstrap CSS -->
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css
" rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

```

- Stergere de Date

Stergerea de date se construiește folosind un form ce preia ID-ul introdus de utilizator pentru a se șterge data respectiva. Astfel, se execută o comandă query “DELETE ... WHERE ID= [string introdus]” Pentru a se șterge aceste date.

Codul HTML este foarte asemănător cu introducerea și actualizarea de date, doar că form-ul de introducere de date este foarte mic, având doar un singur câmp de introducere text.

Stergere Categori

```

@app.route('/categorydelete', methods=['GET', 'POST'])
def categorydelete():
    msg = ''
    if request.method == 'POST' and 'idcat' in request.form:
        idcat=request.form['idcat']
        cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)
        cursor.execute("delete from categories_movies.category where
idCategory=%s;", (idcat,))
        mysql.connection.commit()
        msg = 'You have successfully deleted'
    elif request.method == 'POST':
        msg = 'Please fill out the form !'
    return render_template("categorydelete.html",msg=msg)

```

HTML:

```

<link href="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/css/bootstrap.min.css"
rel="stylesheet" id="bootstrap-css">
<script
src="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/js/bootstrap.min.js"></script>
<script
src="//cdnjs.cloudflare.com/ajax/libs/jquery/3.2.1/jquery.min.js"></script>
<!------- Include the above in your HEAD tag ----->

<div class="container forget-password">
    <div class="row">
        <div class="col-md-12 col-md-offset-4">

```

```

        <div class="panel panel-default">
          <div class="panel-body">
            <div class="text-center">
              
              <h2 class="text-center">Delete Category</h2>
              <p>You can delete category data here.</p>
              <form id="register-form" role="form"
autocomplete="off" class="form" method="post">
                <div class="form-group">
                  <div class="input-group">

                    </div>
                  </div>
                  <div class="form-group">
                    <div class="input-group">
                      <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                      <input type="number" min="0"
name="idcat" placeholder="Enter Category ID" class="form-control" id="idcat"
required></br></br>
                        <div class="input-group">
                          <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>

                        </div>
                      </div>
                    <div class="form-group">
                      <input name="btnForget" class="btn
btn-lg btn-danger btn-block btnForget" value="Confirm Deletion"
type="submit">
                    </div>

                  </form>
                </div>
              </div>
            </div>
          </div>
        </div>

        <!-- Required meta tags -->
        <meta charset="utf-8">
        <meta name="viewport" content="width=device-width, initial-scale=1">

        <!-- Bootstrap CSS -->
        <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css"
" rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

        <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"
integrity="sha384-

```

```
KU3o2DKtIkVYIK3UENzmM7KCKrR/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN"
crossorigin="anonymous"></script>
<script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.js" integrity="sha384-
ApNbgh9B+YlQKtv3Rn7W3mgPxhU9K/ScQsAP7hUibX39j7fakFPskvXusvfa0b4Q"
crossorigin="anonymous"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"
integrity="sha384-
JZR6Sspejh4U02d8jOt6vLEHfe/JQGiRRSQQxSfFWp1MquVdAyjUar5+76PVCmY1"
crossorigin="anonymous"></script>
```

Stergere Filme

```
@app.route('/moviedelete', methods=['GET', 'POST'])
def moviedelete():
    msg = ''
    if request.method == 'POST' and 'idmovie' in request.form:
        idmovie=request.form['idmovie']
        cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)
        cursor.execute("delete from categories_movies.movie where idMovie=%s;",
(idmovie,))
        mysql.connection.commit()
        msg = 'You have successfully deleted'
    elif request.method == 'POST':
        msg = 'Please fill out the form !'
    return render template("moviedelete.html",msg=msg)
```

HTML:

```
<link href="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/css/bootstrap.min.css"
rel="stylesheet" id="bootstrap-css">
<script
src="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/js/bootstrap.min.js"></script>
<script
src="//cdnjs.cloudflare.com/ajax/libs/jquery/3.2.1/jquery.min.js"></script>
<!-- Include the above in your HEAD tag -->

<div class="container forget-password">
  <div class="row">
    <div class="col-md-12 col-md-offset-4">
      <div class="panel panel-default">
        <div class="panel-body">
          <div class="text-center">
            
            <h2 class="text-center">Delete Movie</h2>
            <p>You can delete movie data here.</p>
            <form id="register-form" role="form"
autocomplete="off" class="form" method="post">
              <div class="form-group">
```



```

        <div class="input-group">

        </div>
    </div>
    <div class="form-group">
        <div class="input-group">
            <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
            <input type="number" min="0"
name="idmovie" placeholder="Enter Movie ID" class="form-control" id="idmovie"
required></br></br>

            <div class="input-group">
                <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>

                </div>
            </div>
            <div class="form-group">
                <input name="btnForget" class="btn
btn-lg btn-danger btn-block btnForget" value="Confirm Deletion"
type="submit">

            </div>

        </form>
    </div>
</div>
</div>
</div>
</div>
</div>
</div>

<!-- Required meta tags -->
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<!-- Bootstrap CSS -->
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css
" rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

    <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"
integrity="sha384-
KJ3o2DKtIkvYIK3UENzmM7KCkRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN"
crossorigin="anonymous"></script>
<script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.j
s" integrity="sha384-
ApNbgh9B+Y1QKtV3Rn7W3mgPxhU9K/ScQsAP7hUibX39j7fakFPskvXusvfa0b4Q"
crossorigin="anonymous"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"
integrity="sha384-
JZR6Spejh4U02d8jOt6vLEHfe/JQGiRRSQQxSfFWpi1MquVdAyjUar5+76PVCmYl"
crossorigin="anonymous"></script>

```

Stergere Afisari

```
@app.route('/screeningdelete', methods=['GET', 'POST'])
def screeningdelete():
    msg = ''
    if request.method == 'POST' and 'idscreening' in request.form:
        idscreening=request.form['idscreening']
        cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)
        cursor.execute("delete from categories_movies.screening where
idscreening=%s;", (idscreening,))
        mysql.connection.commit()
        msg = 'You have successfully deleted'
    elif request.method == 'POST':
        msg = 'Please fill out the form !'
    return render template("screeningdelete.html",msg=msg)
```

HTML:

```
<link href="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/css/bootstrap.min.css"
rel="stylesheet" id="bootstrap-css">
<script
src="//maxcdn.bootstrapcdn.com/bootstrap/4.1.1/js/bootstrap.min.js"></script>
<script
src="//cdnjs.cloudflare.com/ajax/libs/jquery/3.2.1/jquery.min.js"></script>
<!------- Include the above in your HEAD tag ----->

<div class="container forget-password">
  <div class="row">
    <div class="col-md-12 col-md-offset-4">
      <div class="panel panel-default">
        <div class="panel-body">
          <div class="text-center">
            
            <h2 class="text-center">Delete Screening</h2>
            <p>You can delete screening data here.</p>
            <form id="register-form" role="form"
autocomplete="off" class="form" method="post">
              <div class="form-group">
                <div class="input-group">

                  </div>
                </div>
                <div class="form-group">
                <div class="input-group">
                  <span class="input-group-
addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>
                  <input type="number" min="0"
name="idscreening" placeholder="Enter Screening ID" class="form-control"
id="idscreening" required></br></br>

                  <div class="input-group">
                    <span class="input-group-
```

```

addon"><i class="glyphicon glyphicon-envelope color-blue"></i></span>

        </div>
    </div>
    <div class="form-group">
        <input name="btnForget" class="btn
btn-lg btn-danger btn-block btnForget" value="Confirm Deletion"
type="submit">
    </div>

</form>
</div>
</div>
</div>
</div>
</div>
</div>
</div>

<!-- Required meta tags -->
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">

<!-- Bootstrap CSS -->
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css
" rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">

    <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"
integrity="sha384-
KJ3o2DKtIkvYIK3UENzmM7KCkRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN"
crossorigin="anonymous"></script>
<script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.j
s" integrity="sha384-
ApNbgh9B+Y1QKtv3Rn7W3mgPxhU9K/ScQsAP7hUibX39j7fakFPskvXusvfa0b4Q"
crossorigin="anonymous"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"
integrity="sha384-
JZR6Spejh4U02d8jOt6vLEHfe/JQGiRRSQQxSfFWpi1MquVdAyjUar5+76PVCmY1"
crossorigin="anonymous"></script>

```

References

- [1] ["What is MySQL?"](#). *MySQL 8.0 Reference Manual*. Oracle Corporation. Retrieved 3 April 2020. The official way to pronounce "MySQL" is "My Ess Que Ell" (not "my sequel"), but we do not mind if you pronounce it as "my sequel" or in some other localized way.
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- [3] [Flask Foreword](#)". Archived from [the original](#) on 2017-11-17.
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- [5] [What challenges has Pinterest encountered with Flask?](#)
- [6] [Rachel Sanders: Developing Flask Extensions - PyCon 2014](#)