

Introduction to Databases

Homework n. 4 - PHP Project

1 Creation of the database

A well-known multimedia content platform wants to implement a database for the management of its users and contents, as well as the ratings assigned by each user to each content. The logical schema obtained through the design phase is as follows:

```
USER(SSN, Name, Surname, YearOfBirth)
CONTENT (CodC, Category, Duration, Title, Description*)
RATING (SSN, CodC, Date, Evaluation)
```

Notes:

- The underlined fields identify the primary key for each relationship, while the asterisk identifies an optional field.
- *CodC* is an incremental positive integer identifier (1, 2, etc.).
- *Duration* is in minutes.
- *Evaluation* contains the level of satisfaction expressed on a scale from 1 to 10.

The following activities are required:

- Create an SQL script named *create_and_populate_database.sql* containing:
 - the instructions for the creation of the database corresponding to the given logical schema and the specification of the appropriate integrity constraints;
 - the instructions for populating the database created in the previous point (at least 10 tuples for each table).
- Write in a file named *interrogation_and_transaction.sql* the SQL statements to perform the following operations:
 - *Interrogation of the implemented database*: given the social security number (SSN) of a user and a multimedia content (of your choice), show the list of all the ratings made for that content by that user. For each rating, display the date and the evaluation. Sort the ratings in ascending order of date.
 - *Data entry transaction*: insert in the database data about a new user and a rating.

2 Design and development of the web application

Design a web application in PHP for online consultation of the previously created database. The application should allow the user to perform the two activities corresponding to the SQL statements written for Section 1.

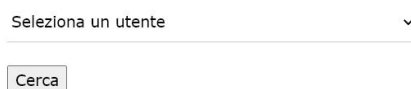
The application must provide a home page used to redirect the user to the functionality required in Sections 2.1 and 2.2.

2.1 Querying of the database created

After selecting the user's SSN (from a drop-down menu populated with values recovered from the database), show the list of all contents rated by the selected user. For each content display the date, the evaluation assigned, and the category of the content. Sort the ratings in ascending order of date. Figures 1 and 2 show an example.

The search form must generate a specific error message in case of missing data (e.g. empty SSN field) or incorrectly typed data.

Ricerca valutazioni effettuate da un utente



A search form with a dropdown menu labeled 'Seleziona un utente' and a 'Cerca' button.

Figure 1: Search form example.

Elenco valutazioni effettuate dall'utente:

AAAGGG83E30C445A

CodContenuto	Data	Valutazione	Genere
1	2021-05-10	10	Azione
2	2021-02-25	6	Fantasy

Figure 2: Search result page example.

2.2 Data entry transaction

Two forms must be created:

1. insertion of a new user
2. insertion of a rating made by a user regarding a content present in the database.

Both forms must provide for and require the entry of all necessary fields based on the type of insert.

In the second form, the selection of the user's SSN and the content code (CodC) must be done through a dynamically generated drop-down menu populated with the content of the relevant database tables. Figures 3 and 4 show an example.

The insertion forms must satisfy the following requirements:

- A specific error message must be generated in case of missing data (empty fields) or incorrectly typed data (incorrect data format).
- A specific error message must be generated if the insertion violate integrity constraints (the user is already present or has already rated a certain content in the same date).
- A specific error message should be generated if the evaluation entered is incorrect (e.g. not between 1 and 10).
- If the insertion ends successfully, the page should display a message of successful insert, otherwise it should notify the error.

Inserisci un nuovo utente

Codice Fiscale:

Nome Utente:

Cognome utente:

Anno di nascita:

Figure 3: New user insertion form example

2.2.1 Adding style with CSS

It is required to style the outcome of a new user insertion. Use CSS classes to create a green/red colored banner in the page returned from the server. The classes must be defined internally in the HTML file (tag *style*). Figure 5 shows an example.

Inserisci valutazione

Codice fiscale utente:
Seleziona utente

Codice Contenuto:
Seleziona Contenuto

Data:

Valutazione:

Figure 4: New rating insertion form example



Figure 5: Successful insert example