DATABASES

Homework 4: Design of a database
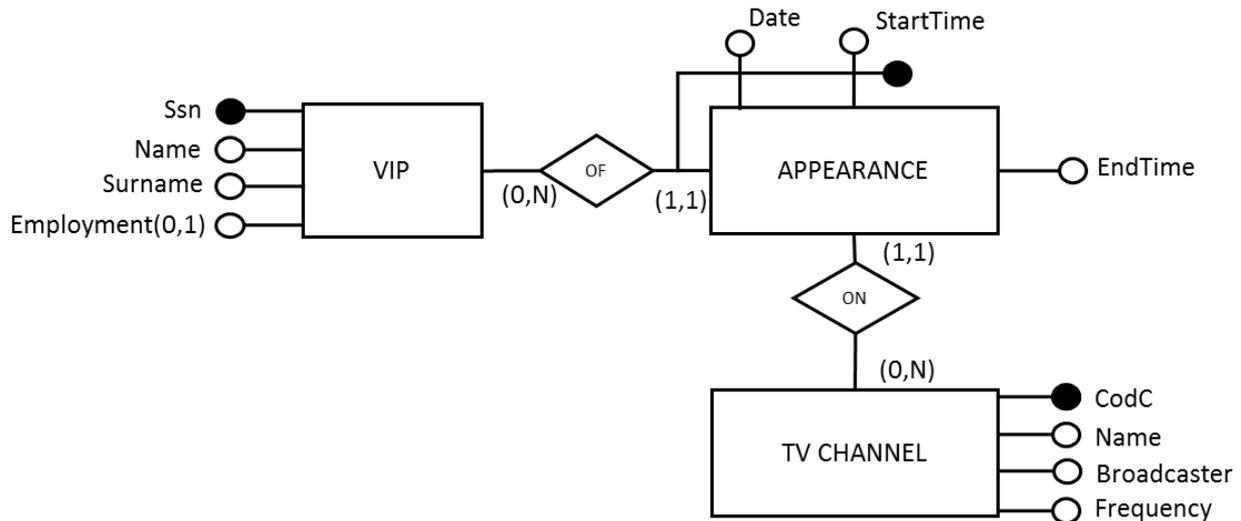# and development of a web application

Part 1

Figure 1 - ER model

Implement the database to register the TV appearances of VIPs (e.g., actors, singers, politicians, etc.) considering the following logical schema related to the ER schema in Figure 1.

VIP(Ssn, Name, Surname, Employment*)
TV_CHANNEL(CodC, Name, Broadcaster, Frequency)
APPEARANCE(Ssn, Date, StartTime, EndTime, CodC)

N.B.: underlined attributes identify primary keys of relations, while asterisk identifies an optional field.

The following tasks are requested:

- Create a SQL script for MySQL with:
  - the instructions to create the database corresponding to the given logical schema and the specification of the appropriate integrity constraints
  - the instructions to populate the database (at least 2 records for each table)

Part 2

Develop a web application in PHP for the online access to the database implemented in the previous part. The application should allow to perform the three activities described later.

N.B.: All the parameters of GET requests must match with the attributes names of the logical schema, as in the following example (pay attention to uppercase characters).

```
http://localhost/form1.php?Initials=Lig&Broadcaster=Mediaset
```
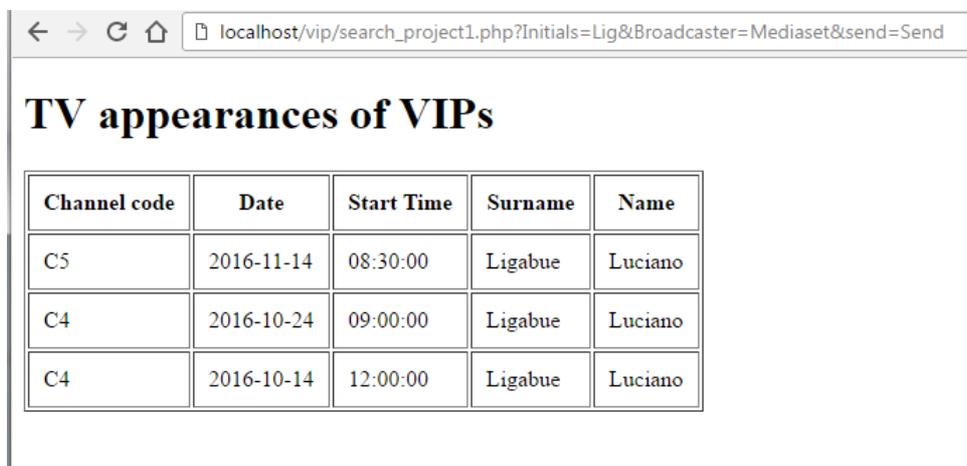
1. *Query the database*

   Create a web page with a form to query the database. The user should be able to indicate the first three letters of the surname of a VIP (through a textbox) and a broadcaster (through a select box filled with values obtained by querying the database). The application should show all the TV appearances of the VIPs whose surname starts with the specified letters and on the channels of the specified broadcaster. For each appearance, the results should show the code of the channel, the start date and time, the surname and the name of the VIP. Results should be ordered by channel code and by start date and time (increasing order). Figure 2 and Figure 3 show an example.

Figure 2 - example of query form for task 1

Figure 3 - example of result table for task 1

2. *Insert a new VIP in the database*

   Create a web page with a form containing all the input elements needed to insert a new VIP in the database (insert a record into the VIP table), then insert a new VIP in the database. Figure 4 and Figure 5 show an example.

   The application must satisfy the following requirements:

   - Raise a specific error message in case of missing data (empty fields).

- Show a confirmation message in case of successful insertion in the database (see Figure 5), show an error message otherwise.

Figure 4 - example of insertion form for task 2

Figure 5 - Example of execution feedback for task 2

3. *Insert a new appearance of a VIP*

The application should include an insert form with all the fields needed to insert a VIP appearance on a TV channel, updating the content of table APPEARANCE. The name and surname of the VIP and the channel should be selected through two select boxes, properly filled with data from the database. The remaining fields are acquired through textboxes. show two examples of execution of the application (correct insert and request to insert an appearance that overlaps with another of the same VIP already existing in the database).

The application must satisfy the following requirements:

- The application must check that the new appearance that is being inserted is not temporally overlapped with another of the same VIP already existing in the database. In case of overlapping, the system should deny the insertion and generate an error message.
- Raise a specific error message in case of missing data (empty fields).
- Show a confirmation message in case of successful insertion in the database (see Figure 7), show an error message otherwise.

Figure 6 - example of insertion form for task 3

Figure 7 - example of execution feedback for task 3

Figure 8 - - example of new insertion for task 3

Figure 9 - example of denied insertion for task 3 with error generated due to overlapping with a previous insertion

4. *Add CSS style*

It is required that the outcome of the inclusion of a new appearance of a VIP to be stylized. Use CSS classes to create a green / red colored banner on the page returned by the server.

<div style="background-color:green; color:white; text-align:center;">Successful insertion</div>

Data correctly inserted in the database.

<div style="background-color:darkred; color:white; text-align:center;">Failed insertion</div>

It is not allowed to insert two overlapped appearances for the same VIP.