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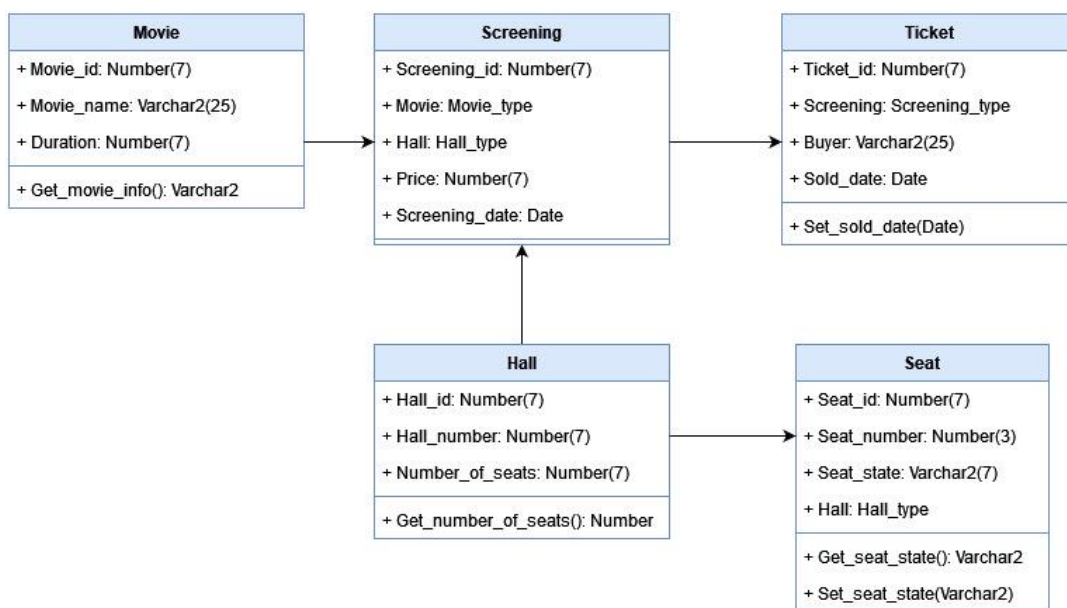
Proszę podać dwa interesujące schematy baz danych (inne od tych w wykładach): jeden na bazę obiektową, drugi na bazę XML - z użyciem typu danych XMLType (wykłady 3 i 4).

## 1. Baza obiektowa

Przygotowana przeze mnie baza obiektowa jest przeznaczona do obsługi kina. Składa się z następujących tabel:

- Seans (Screening)
- Sala (Hall)
- Miejsce (Seat)
- Film (Movie)
- Bilet (Ticket)

Poniżej przedstawiam diagram bazy danych zawierający tabele, wraz z ich składowymi – atrybutami i metodami.



Poniżej znajduje się kod potrzebny do ich utworzenia. Najpierw tworzona jest specyfikacja typu (CREATE TYPE), a następnie implementacja jego metod (CREATE TYPE BODY). Na koniec zostały utworzone tabele na podstawie typów.

```
CREATE TYPE Hall_type
AS OBJECT(
    Hall_id NUMBER(7),
    Hall_number NUMBER(7),
    Number_of_seats NUMBER(7),
    MEMBER FUNCTION Get_number_of_seats RETURN NUMBER);
/
```

```

CREATE TYPE BODY Hall_type AS
  MEMBER FUNCTION Get_number_of_seats RETURN NUMBER IS
  BEGIN
    RETURN (Number_of_seats);
  END;
END;
/

CREATE TYPE Seat_type
AS OBJECT(
  Seat_id NUMBER(7),
  Seat_number NUMBER(3),
  Seat_state VARCHAR2(7),
  Hall Hall_type,
  MEMBER FUNCTION Get_seat_state RETURN VARCHAR2,
  MEMBER PROCEDURE Set_seat_state (new_state VARCHAR2));
/

CREATE TYPE BODY Seat_type AS
  MEMBER FUNCTION Get_seat_state RETURN VARCHAR2 IS
  BEGIN
    RETURN (Seat_state);
  END;
  MEMBER PROCEDURE Set_seat_state(new_state VARCHAR2) IS
  BEGIN
    Seat_state := new_state;
  END;
END;
/

CREATE TYPE Movie_type
AS OBJECT(
  Movie_id NUMBER(7),
  Movie_name VARCHAR2(25),
  Duration NUMBER(7),
  MEMBER FUNCTION Get_movie_info RETURN VARCHAR2);
/

CREATE TYPE BODY Movie_type AS
  MEMBER FUNCTION Get_movie_info RETURN NUMBER IS
  BEGIN
    RETURN (Movie_name || ' - ' || Duration || ' minutes');
  END;
END;
/

CREATE TYPE Screening_type
AS OBJECT(

```

```

        Id_seansu NUMBER(7),
        Movie Movie_type,
        Hall Hall_type,
        Price NUMBER(7),
        Screening_Date DATE);
/

CREATE TYPE Ticket_type
AS OBJECT(
    Id_seansu NUMBER(7),
    Screening Screening_type,
    Buyer VARCHAR2(25),
    Sold_date DATE,
    MEMBER PROCEDURE Set_sold_date (new_sold_date DATE));
/

CREATE TYPE BODY Ticket_type AS
    MEMBER PROCEDURE Set_sold_date(new_sold_date VARCHAR2) IS
    BEGIN
        Sold_date := new_sold_date;
    END;
END;
/

CREATE TABLE Hall_table OF Hall_type;
CREATE TABLE Seat_table OF Seat_type;
CREATE TABLE Movie_table OF Movie_type;
CREATE TABLE Screening_table OF Screening_type;
CREATE TABLE Ticket_table OF Ticket_type;

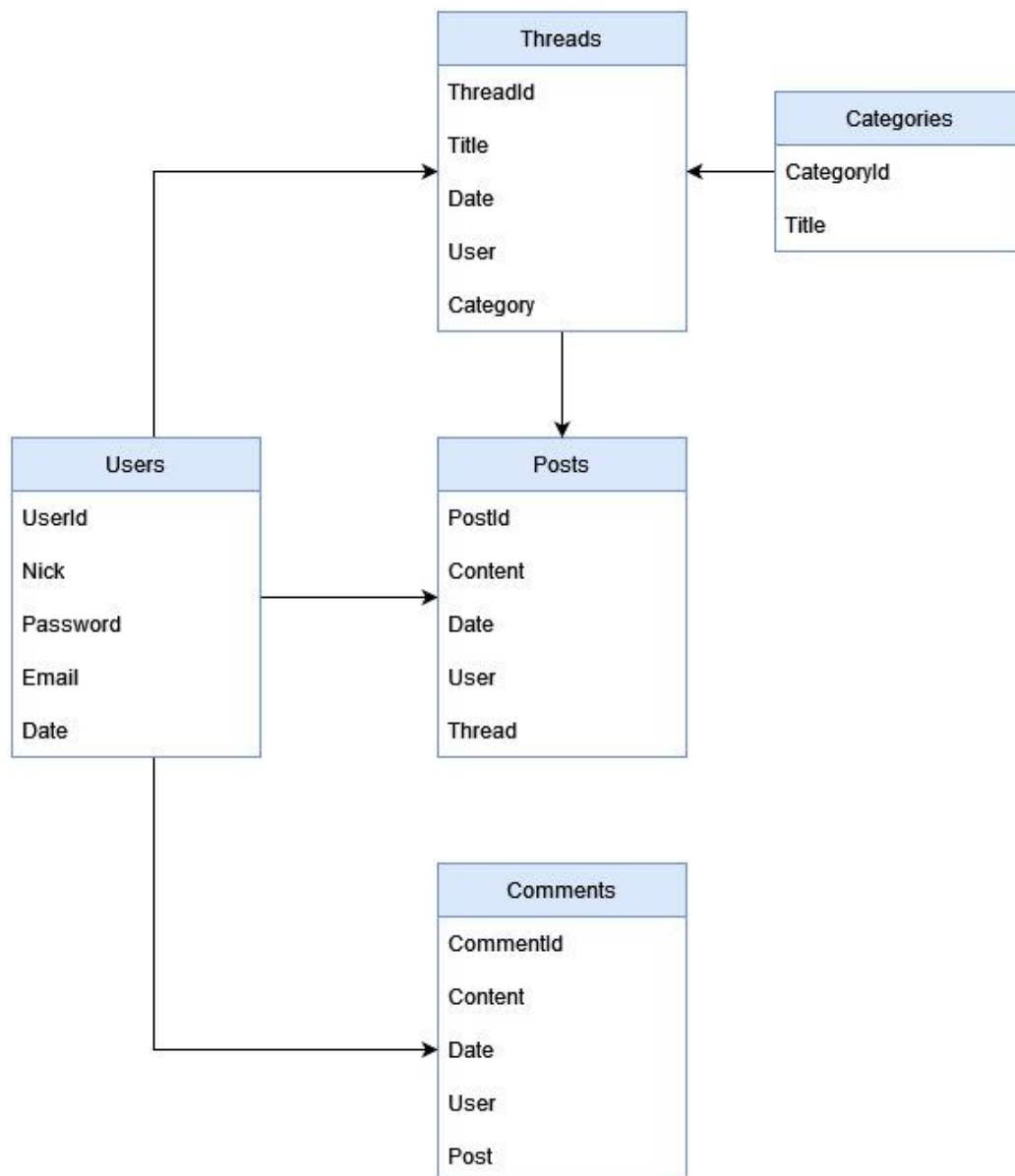
```

## 2. Baza XML

Przygotowana przeze mnie baza XML ma za zadanie przechowywać dane forum internetowego. Składa się z tabel:

- Użytkownicy (Users)
- Tematy (Threads)
- Posty (Posts)
- Komentarze (Comments)
- Kategorie (Categories)

Poniżej znajduje się diagram przedstawiający bazę danych.



Kod tworzący tabele oraz wstawiający dane w formacie XML do tabel.

```

CREATE TABLE Users OF XMLType;

INSERT INTO
  Users
VALUES
(
  XMLType(
    '<USER>
    <USER_ID>1</USER_ID>
    <NICK>Nick22</NICK>
  
```

```

        <PASSWORD>password123</PASSWORD>
        <EMAIL>test@gmail.com</EMAIL>
        <DATE>2022-10-09 15:45:21</DATE>
    </USER>'
)
);

```

```
CREATE TABLE Threads OF XMLType;
```

```

INSERT INTO
    Threads
VALUES
    (
        XMLType(
            '<THREAD>
<THREAD_ID>1</THREAD_ID>
<TITLE>Example title</TITLE>
<DATE>2022-10-22 12:11:54</DATE>
<USER>
    <USER_ID>1</USER_ID>
    <NICK>Nick22</NICK>
    <PASSWORD>password123</PASSWORD>
    <EMAIL>test@gmail.com</EMAIL>
    <DATE>2022-08-09 15:45:21</DATE>
</USER>
<CATEGORY>
    <CATEGORY_ID>1</CATEGORY_ID>
    <TITLE>Example category</TITLE>
</CATEGORY>
</THREAD>'
        )
    );

```

```
CREATE TABLE Posts OF XMLType;
```

```

INSERT INTO
    Posts
VALUES
    (
        XMLType(
            '<POST>
<POST_ID>1</POST_ID>
<CONTENT>Example post</CONTENT>
<DATE>2022-10-09 15:45:21</DATE>
<USER>
    <USER_ID>1</USER_ID>
    <NICK>Nick22</NICK>
    <PASSWORD>password123</PASSWORD>
    <EMAIL>test@gmail.com</EMAIL>

```

```

        <DATE>2022-08-09 15:45:21</DATE>
    </USER>
    <THREAD>
        <THREAD_ID>1</THREAD_ID>
        <TITLE>Example title</TITLE>
        <DATE>2022-10-22 12:11:54</DATE>
        <USER>
            <USER_ID>1</USER_ID>
            <NICK>Nick22</NICK>
            <PASSWORD>password123</PASSWORD>
            <EMAIL>test@gmail.com</EMAIL>
            <DATE>2022-08-09 15:45:21</DATE>
        </USER>
        <CATEGORY>
            <CATEGORY_ID>1</CATEGORY_ID>
            <TITLE>Example category</TITLE>
        </CATEGORY>
    </THREAD>
</POST>'
)
);

```

CREATE TABLE Comments OF XMLType;

INSERT INTO

Comments

VALUES

```

(
    XMLType(
        '<COMMENT>
        <COMMENT_ID>1</COMMENT_ID>
        <CONTENT>Example comment</CONTENT>
        <DATE>2022-10-09 15:45:21</DATE>
        <USER>
            <USER_ID>1</USER_ID>
            <NICK>Nick22</NICK>
            <PASSWORD>password123</PASSWORD>
            <EMAIL>test@gmail.com</EMAIL>
            <DATE>2022-08-09 15:45:21</DATE>
        </USER>
        <POST>
            <POST_ID>1</POST_ID>
            <CONTENT>Example post</CONTENT>
            <DATE>2022-10-09 15:45:21</DATE>
            <USER>
                <USER_ID>1</USER_ID>
                <NICK>Nick22</NICK>
                <PASSWORD>password123</PASSWORD>
                <EMAIL>test@gmail.com</EMAIL>
            </USER>
        </POST>
        </COMMENT>'
    )
);

```

```

        <DATE>2022-08-09 15:45:21</DATE>
    </USER>
    <THREAD>
        <THREAD_ID>1</THREAD_ID>
        <TITLE>Example title</TITLE>
        <DATE>2022-10-22 12:11:54</DATE>
        <USER>
            <USER_ID>1</USER_ID>
            <NICK>Nick22</NICK>
            <PASSWORD>password123</PASSWORD>
            <EMAIL>test@gmail.com</EMAIL>
            <DATE>2022-08-09 15:45:21</DATE>
        </USER>
        <CATEGORY>
            <CATEGORY_ID>1</CATEGORY_ID>
            <TITLE>Example category</TITLE>
        </CATEGORY>
    </THREAD>
</POST>
</COMMENT>'
    )
);

```

```
CREATE TABLE Categories OF XMLType;
```

```
INSERT INTO
    Categories
```

```
VALUES
```

```

    (
        XMLType(
            '<CATEGORY>
            <CATEGORY_ID>1</CATEGORY_ID>
            <TITLE>Example category</TITLE>
            </CATEGORY>'
        )
    );

```