Bazy danych - System zarządzania szkoleniami

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Funkcje realizowane przez system:

1. Pracownicy zarządzający wydarzeniami:

    - Zarządzanie kursami, webinarami i studiami:
        - Dodawanie nowych kursów, webinarów i studiów.
        - Edycja istniejących wydarzeń (w tym harmonogramu).
        - Usuwanie wydarzeń (zarówno bieżących, jak i archiwizowanych).
    - Zarządzanie użytkownikami:
        - Dodawanie nowych użytkowników do systemu.
        - Edycja danych użytkowników.
    - Generowanie raportów:
        - Raport ogólny z zapisanych osób na przyszłe wydarzenia.
        - Raport frekwencji na zakończonych wydarzeniach.
        - Lista obecności dla każdego szkolenia.
        - Raport bilokacji – lista osób zapisanych na kolidujące ze sobą wydarzenia.

2. Pracownicy biurowi:

    - Generowanie raportów:
        - Raport finansowy - zestawienie przychodów z poszczególnych wydarzeń.
        - Lista dłużników - sprawozdanie zalegających z płatnościami użytkowników.
        - Raport ogólny z zapisanych osób na przyszłe wydarzenia.
        - Raport frekwencji na zakończonych wydarzeniach.
        - Lista obecności dla każdego szkolenia.
        - Raport bilokacji – lista osób zapisanych na kolidujące ze sobą wydarzenia.

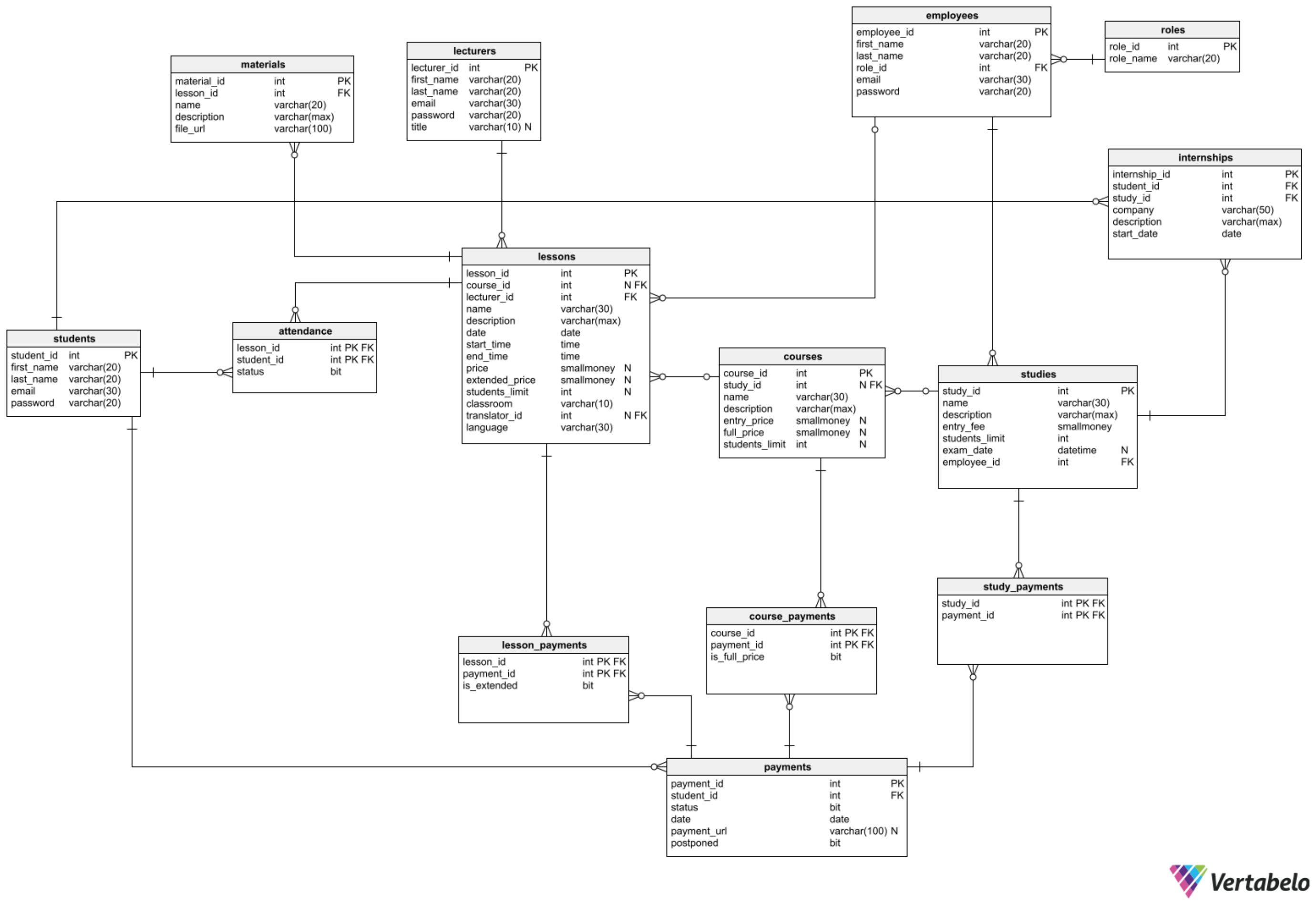
3. Wykładowca:

    - Edycja prowadzonych wydarzeń.
    - Oznaczanie obecności:
        - Oznaczanie obecności uczestników w trakcie spotkań.
        - Modyfikowanie listy obecności (oznaczenie odrobienia zajęć w przypadku studiów)
    - Dodawanie materiałów:
        - Wykładowca może dodawać materiały do kursów, takie jak prezentacje, pliki do pobrania itp.

4. Uczestnik:

    - Przeglądanie oferty:
        - Przeglądanie dostępnych kursów, webinarów i studiów.
        - Przeglądanie sylabusów studiów,
    - Rejestracja i płatności:
        - Rejestracja na wybrane wydarzenia.
        - Dodawanie wydarzeń do koszyka.
        - Generowanie linku do płatności.
        - Uiszczenie opłat za uczestnictwo w wydarzeniach.
    - Dostęp do nagrań:
        - Dostęp do nagrań z różnych wydarzeń online.
        - Przeglądanie dostępnych nagrań przez okres 30 dni.
    - Przeglądanie danych:
        - Uczestnik może przeglądać swoje płatności i historię uczestnictwa.

Diagram bazy danych:



Dodatkowe informacje do diagramu

- Wpis w tabeli `internships` oznacza, że student dostarczył zaświadczenie z firmy zewnętrznej o ukończeniu 14 dniowych praktyk ze 100% frekwencją w ramach danych studiów.

Tabele

Pracownicy

```sql
CREATE TABLE employees (
   employee_id int  NOT NULL IDENTITY(1, 1),
   first_name varchar(20)  NOT NULL,
   last_name varchar(20)  NOT NULL,
   role_id int  NOT NULL,
   email varchar(30)  NOT NULL,
   password varchar(20)  NOT NULL,
   CONSTRAINT employees_ak_1 UNIQUE (email),
   CONSTRAINT employees_pk PRIMARY KEY  (employee_id)
);
```

Role pracowników

```sql
CREATE TABLE roles (
   role_id int  NOT NULL IDENTITY(1,1),
   role_name varchar(20)  NOT NULL,
   CONSTRAINT roles_pk PRIMARY KEY  (role_id)
);
```

Studenci

```sql
CREATE TABLE students (
   student_id int  NOT NULL IDENTITY(1, 1),
   first_name varchar(20)  NOT NULL,
   last_name varchar(20)  NOT NULL,
   email varchar(30)  NOT NULL,
   password varchar(20)  NOT NULL,
   CONSTRAINT students_ak_1 UNIQUE (email),
   CONSTRAINT students_pk PRIMARY KEY  (student_id)
);
```

Lista obecności

```sql
CREATE TABLE attendance (
   lesson_id int  NOT NULL,
   student_id int  NOT NULL,
   status bit  NOT NULL DEFAULT 0,
   CONSTRAINT attendance_pk PRIMARY KEY  (lesson_id,student_id)
);
```

Materiały do lekcji online

```sql
CREATE TABLE materials (
   material_id int  NOT NULL IDENTITY(1, 1),
   lesson_id int  NOT NULL,
   name varchar(20)  NOT NULL,
   description varchar(max)  NOT NULL DEFAULT 'no description found',
   file_url varchar(100)  NOT NULL,
   CONSTRAINT materials_ak_1 UNIQUE (file_url),
   CONSTRAINT materials_pk PRIMARY KEY  (material_id)
);
```

Wykładowcy

```sql
CREATE TABLE lecturers (
   lecturer_id int  NOT NULL IDENTITY(1,1),
   first_name varchar(20)  NOT NULL,
   last_name varchar(20)  NOT NULL,
   email varchar(30)  NOT NULL,
   password varchar(20)  NOT NULL,
   title varchar(10)  NULL,
   CONSTRAINT lecturers_ak_1 UNIQUE (email),
   CONSTRAINT lecturers_pk PRIMARY KEY  (lecturer_id)
);
```

Praktyki zawodowe

```sql
CREATE TABLE internships (
   internship_id int  NOT NULL IDENTITY(1,1),
   student_id int  NOT NULL,
   study_id int  NOT NULL,
   company varchar(50)  NOT NULL,
   description varchar(max)  NOT NULL DEFAULT 'no description found',
   start_date date  NOT NULL,
   CONSTRAINT Internships_pk PRIMARY KEY  (internship_id)
);
```

Lekcje (z kursów i studiów) i webinary

```
CREATE TABLE lessons (
   lesson_id int  NOT NULL IDENTITY(1, 1),
   course_id int  NULL,
   lecturer_id int  NOT NULL,
   name varchar(30)  NOT NULL,
   description varchar(max)  NOT NULL DEFAULT 'no description found',
   date date  NOT NULL,
   start_time time  NOT NULL,
   end_time time  NOT NULL,
   price smallmoney  NOT NULL DEFAULT 0,
   extended_price smallmoney  NOT NULL DEFAULT 0,
   students_limit int  NULL,
   classroom varchar(10)  NOT NULL,
   translator_id int  NULL,
   language varchar(30)  NOT NULL,
   CONSTRAINT data CHECK (start_time < end_time),
   CONSTRAINT students_limit_lessons CHECK (students_limit > 0),
   CONSTRAINT price CHECK (price >= 0),
   CONSTRAINT extended_price CHECK (extended_price >= price),
   CONSTRAINT lessons_pk PRIMARY KEY  (lesson_id)
);
```

Kursy

```
CREATE TABLE courses (
   course_id int  NOT NULL IDENTITY(1, 1),
   study_id int  NULL,
   name varchar(30)  NOT NULL,
   description varchar(max)  NOT NULL DEFAULT 'no description found',
   entry_price smallmoney  NOT NULL DEFAULT 0,
   full_price smallmoney  NOT NULL DEFAULT 0,
   students_limit int  NULL,
   CONSTRAINT entry_price CHECK (entry_price >= 0),
   CONSTRAINT full_price CHECK (full_price >= 0),
   CONSTRAINT students_limit_courses CHECK (students_limit > 0),
   CONSTRAINT courses_pk PRIMARY KEY  (course_id)
);
```

Studia

```
CREATE TABLE studies (
   study_id int  NOT NULL IDENTITY(1, 1),
   name varchar(30)  NOT NULL,
   description varchar(max)  NOT NULL DEFAULT 'no description found',
   entry_fee smallmoney  NOT NULL,
   students_limit int  NOT NULL,
   exam_date datetime  NULL,
   employee_id int  NOT NULL,
   CONSTRAINT entry_fee CHECK (entry_fee > 0),
   CONSTRAINT students_limit_studies CHECK (students_limit > 0),
   CONSTRAINT studies_pk PRIMARY KEY  (study_id)
);
```

Płatności

```
CREATE TABLE payments (
    payment_id int  NOT NULL IDENTITY(1, 1),
    student_id int  NOT NULL,
    status bit  NOT NULL DEFAULT 0,
    date date  NOT NULL,
    payment_url varchar(100)  NULL,
    postponed bit  NOT NULL,
    CONSTRAINT payments_ak_1 UNIQUE (payment_url),
    CONSTRAINT payments_pk PRIMARY KEY  (payment_id)
);
```

Płatności za lekcje

```
CREATE TABLE lesson_payments (
    lesson_id int  NOT NULL,
    payment_id int  NOT NULL,
    is_extended bit  NOT NULL,
    CONSTRAINT lesson_payments_pk PRIMARY KEY  (lesson_id,payment_id)
);
```

Płatności za kursy

```
CREATE TABLE course_payments (
    course_id int  NOT NULL,
    payment_id int  NOT NULL,
    is_full_price bit  NOT NULL DEFAULT 0,
    CONSTRAINT course_payments_pk PRIMARY KEY  (course_id,payment_id)
);
```

Płatności za studia

```
CREATE TABLE study_payments (
    study_id int  NOT NULL,
    payment_id int  NOT NULL,
    CONSTRAINT study_payments_pk PRIMARY KEY  (study_id,payment_id)
);
```

Widoki

1. Raporty finansowe

Przychody dla studiów

```
CREATE VIEW studies_income AS
    WITH t AS (select lp.lesson_id, l.price, l.extended_price, s.study_id, lp.is_extended
            FROM lesson_payments lp
                        JOIN lessons l
                            ON lp.lesson_id = l.lesson_id
                        JOIN courses c
                            ON l.course_id = c.course_id
                        JOIN studies s
                            ON c.study_id = s.study_id
                        JOIN payments p
                            ON lp.payment_id = p.payment_id AND p.status = 1)
    SELECT s.study_id,
        ROUND((SELECT COUNT(*)
                FROM study_payments sp
                        JOIN payments p
                            ON sp.payment_id = p.payment_id AND p.status = 1
                WHERE sp.study_id = s.study_id) * s.entry_fee
                    +
                (SELECT ISNULL(SUM(t.price*t.is_extended + t.extended_price*ABS(t.is_extended - 1)), 0)
                FROM t
                WHERE t.study_id = s.study_id)
            , 2) AS income
    FROM studies s
```

Przychody dla kursów

```
CREATE VIEW courses_income AS
    WITH t AS (SELECT cp.course_id, cp.is_full_price
                FROM course_payments cp
                    JOIN payments p
                        ON cp.payment_id = p.payment_id AND p.status = 1)
    SELECT c.course_id,
        ROUND((SELECT COUNT(*)
                FROM t
                WHERE t.course_id = c.course_id AND t.is_full_price = 1) * c.full_price
                +
            (SELECT COUNT(*)
                FROM t
                WHERE t.course_id = c.course_id AND t.is_full_price = 0) * c.entry_price, 2) AS income
    FROM courses c
    WHERE c.study_id IS NULL
```

Przychody dla webinarów

```sql
CREATE VIEW webinars_income AS
    WITH t AS (SELECT l.lesson_id, COUNT(lp.lesson_id) as counter
                FROM lessons l
                    JOIN lesson_payments lp
                        ON l.lesson_id = lp.lesson_id
                    JOIN payments p
                        ON lp.payment_id = p.payment_id AND p.status = 1
                WHERE l.course_id IS NULL
                GROUP BY l.lesson_id)
    SELECT t.lesson_id, ROUND(t.counter * l.price, 2) AS income
    FROM t
        JOIN lessons l
            ON l.lesson_id = t.lesson_id
```

2. Lista „dłużników"

Dłużnicy dla studiów

```sql
CREATE VIEW studies_debtors_list AS
    SELECT DISTINCT s.student_id
    FROM students s
        JOIN attendance a
            ON s.student_id = a.student_id AND a.status = 1
        JOIN lessons l
            ON a.lesson_id = l.lesson_id
        JOIN courses c
            ON l.course_id = c.course_id
        JOIN studies st
            ON c.study_id = st.study_id
        LEFT JOIN payments p
            ON s.student_id = p.student_id
        LEFT JOIN lesson_payments lp
            ON p.payment_id = lp.payment_id AND a.lesson_id = lp.lesson_id
        LEFT JOIN study_payments sp
            ON p.payment_id = sp.payment_id AND st.study_id = sp.study_id
    WHERE p.payment_id IS NULL OR (p.postponed = 0 AND (lp.payment_id IS NULL OR sp.payment_id IS NULL OR p.status = 0))
```

Dłużnicy dla kursów

```sql
CREATE VIEW courses_debtors_list AS
    SELECT DISTINCT s.student_id
    FROM students s
        JOIN attendance a
            ON s.student_id = a.student_id AND a.status = 1
        JOIN lessons l
            ON a.lesson_id = l.lesson_id
        JOIN courses c
            ON l.course_id = c.course_id AND c.study_id IS NULL
        LEFT JOIN payments p
            ON s.student_id = p.student_id
        LEFT JOIN course_payments cp
            ON p.payment_id = cp.payment_id AND c.course_id = cp.course_id
    WHERE p.payment_id IS NULL OR (p.postponed = 0 AND (cp.payment_id IS NULL OR p.status = 0 OR cp.is_full_price = 0))
```

Dłużnicy dla webinarów

```sql
CREATE VIEW webinars_debtors_list AS
    SELECT DISTINCT s.student_id
    FROM students s
        JOIN attendance a
            ON s.student_id = a.student_id AND a.status = 1
        JOIN lessons l
            ON a.lesson_id = l.lesson_id AND l.course_id is null
        LEFT JOIN payments p
            ON s.student_id = p.student_id
        LEFT JOIN lesson_payments lp
            ON p.payment_id = lp.payment_id AND a.lesson_id = lp.lesson_id
    WHERE p.payment_id IS NULL OR (p.postponed = 0 AND (lp.payment_id IS NULL OR p.status = 0))
```

Wszyscy dłużnicy

```
CREATE VIEW debtors_list AS
    SELECT * FROM webinars_debtors_list
    UNION
    SELECT * FROM courses_debtors_list
    UNION
    SELECT * FROM studies_debtors_list
```

3. Ogólny raport dotyczący liczby zapisanych osób na wydarzenia

```
CREATE VIEW students_registered_count AS
    WITH
        studiesStudentsCount AS (
            SELECT s.study_id, count(*) as "count"
            FROM studies s
            JOIN study_payments sp ON s.study_id=sp.study_id
            JOIN payments p ON sp.payment_id=p.payment_id
            WHERE p.[status]=1 OR (p.[status]=0 AND p.postponed=1)
            GROUP BY s.study_id
        ),
        coursesStudentsCount AS (
            SELECT c.course_id, count(*) as "count"
            FROM courses c
            JOIN course_payments cp ON c.course_id=cp.course_id
            JOIN payments p ON cp.payment_id=p.payment_id
            WHERE p.[status]=1 OR (p.[status]=0 AND p.postponed=1)
            GROUP BY c.course_id
        ),
        lessonsStudentsCount AS (
            SELECT l.lesson_id, count(*) as "count"
            FROM lessons l
            JOIN lesson_payments lp ON l.lesson_id=lp.lesson_id
            JOIN payments p ON lp.payment_id=p.payment_id
            WHERE p.[status]=1 OR (p.[status]=0 AND p.postponed=1)
            GROUP BY l.lesson_id
        ),
        extraStudentsCount AS (
            SELECT l.lesson_id, count(*) as "count"
            FROM lessons l
            JOIN lesson_payments lp ON l.lesson_id=lp.lesson_id
            JOIN payments p ON lp.payment_id=p.payment_id
            WHERE lp.is_extended=1 AND (p.[status]=1 OR (p.[status]=0 AND p.postponed=1))
            GROUP BY l.lesson_id
        )
    SELECT
        l.lesson_id,
        (
            CASE
                WHEN l.course_id IS NULL THEN lsc.count
                WHEN c.study_id IS NULL THEN csc.count
                ELSE ssc.count + ISNULL(esc.count,0)
            END
        ) AS "count",
        (
            CASE
                WHEN l.classroom='online' THEN 'remote'
                ELSE 'stationary'
            END
        ) as "lesson form"
    FROM lessons l
    LEFT JOIN courses c on l.course_id=c.course_id
    LEFT JOIN studies s on c.study_id=s.study_id
    LEFT JOIN lessonsStudentsCount lsc ON l.lesson_id=lsc.lesson_id
    LEFT JOIN coursesStudentsCount csc ON c.course_id=csc.course_id
    LEFT JOIN studiesStudentsCount ssc ON s.study_id=ssc.study_id
    LEFT JOIN extraStudentsCount esc ON l.lesson_id=esc.lesson_id
```

4. Ogólny raport dotyczący liczby zapisanych osób na przyszłe wydarzenia

```
CREATE VIEW students_registered_future_count AS (
    SELECT src.lesson_id, src.[count], src.[lesson form]
    FROM students_registered_count src
    JOIN lessons l ON src.lesson_id=l.lesson_id
    WHERE l.[date] > GETDATE()
)
```

5. Ogólny raport dotyczący frekwencji na zakończonych już wydarzeniach

```
CREATE VIEW attendance_percentage_report AS
    WITH
        attendanceTotal AS (
            SELECT
                l.lesson_id,
                COUNT(*) AS count
            FROM lessons l
            JOIN attendance a on l.lesson_id=a.lesson_id
            WHERE l.date < GETDATE()
            GROUP BY l.lesson_id
        ),
        attendancePresent AS (
            SELECT
                l.lesson_id,
                COUNT(*) AS count
            FROM lessons l
            JOIN attendance a ON l.lesson_id=a.lesson_id
            WHERE l.date < GETDATE() AND a.[status]=1
            GROUP BY l.lesson_id
        )
    SELECT
        att.lesson_id,
        CAST((CAST(atp.count AS float)/CAST(att.count AS float)) AS numeric(20,2)) AS "Attendance Percentage"
    FROM attendanceTotal att
    JOIN attendancePresent atp on att.lesson_id=atp.lesson_id
```

6. Lista Obecności

```
CREATE VIEW attendance_list AS (
    SELECT
        l.lesson_id,
        l.[date],
        s.first_name,
        s.last_name,
        (
            CASE
                WHEN a.status=0 THEN 'ABSENT'
                ELSE 'PRESENT'
            END
        ) AS "status"
    FROM lessons l
    JOIN attendance a ON l.lesson_id=a.lesson_id
    JOIN students s ON a.student_id=s.student_id
)
```

7. Raport Bilokacji

```
CREATE VIEW bilocation_report AS
WITH
myData AS (
    SELECT s.student_id, l.lesson_id, l.[date], start_time, end_time
    FROM students s
    JOIN payments p ON s.student_id=p.student_id
    JOIN lesson_payments lp ON p.payment_id=lp.payment_id
    JOIN lessons l ON l.lesson_id=lp.lesson_id
    where (p.[status]=1 OR (p.[status]=0 AND p.postponed=1))
)
SELECT DISTINCT md1.student_id
FROM myData md1
JOIN myData md2 ON md1.student_id=md2.student_id
WHERE md1.[date]=md2.[date] AND
    (
        (md2.start_time > md1.start_time AND md1.end_time > md2.start_time)
    OR
        (md1.start_time > md2.start_time AND md2.end_time > md1.start_time)
    )
```

Procedury

1. Wyświetl koszyk danego użytkownika (lekcje)

```
CREATE PROCEDURE student_cart_lessons_info(@student_id INT)
AS
BEGIN
    BEGIN TRY
        IF NOT EXISTS(
            SELECT *
            FROM students
            WHERE @student_id=student_id
        )
        BEGIN
            THROW 53000, N'There is no student with given ID', 1
        END
        SELECT
            l.lesson_id,
            l.name,
            l.[description],
            l.[date],
            l.start_time,
            l.end_time,
            CASE
                WHEN lp.is_extended=1 THEN l.extended_price
                ELSE l.price
            END AS "price",
            l.classroom,
            l.[language]
        FROM payments p
        JOIN lesson_payments lp ON p.payment_id=lp.payment_id
        JOIN lessons l ON l.lesson_id=lp.lesson_id
        WHERE p.student_id=@student_id AND p.payment_url IS NULL
    END TRY
    BEGIN CATCH
        DECLARE @msg NVARCHAR(2048) = N'ERROR: ' + ERROR_MESSAGE();
        THROW 53000, @msg, 1;
    END CATCH
END
```

2. Wyświetl koszyk danego użytkownika (kursy)

```
CREATE PROCEDURE student_cart_courses_info(@student_id INT)
AS
BEGIN
    BEGIN TRY
        IF NOT EXISTS(
            SELECT *
            FROM students
            WHERE @student_id=student_id
        )
        BEGIN
            THROW 53000, N'There is no student with given ID', 1
        END
        SELECT
            c.course_id,
            c.name,
            c.[description],
            c.entry_price
        FROM payments p
        JOIN course_payments cp ON p.payment_id=cp.payment_id
        JOIN courses c ON c.course_id=cp.course_id
        WHERE p.student_id=@student_id AND p.payment_url IS NULL
    END TRY
    BEGIN CATCH
        DECLARE @msg NVARCHAR(2048) = N'ERROR: ' + ERROR_MESSAGE();
        THROW 53000, @msg, 1;
    END CATCH
END
```

3. Wyświetl koszyk danego użytkownika (studia)

```
CREATE PROCEDURE student_cart_studies_info(@student_id INT)
AS
BEGIN
    BEGIN TRY
        IF NOT EXISTS(
            SELECT *
            FROM students
            WHERE @student_id=student_id
        )
        BEGIN
            THROW 53000, N'There is no student with given ID', 1
        END
        SELECT
            s.study_id,
            s.name,
            s.[description],
            s.entry_fee,
            s.exam_date
        FROM payments p
        JOIN study_payments sp ON p.payment_id=sp.payment_id
        JOIN studies s ON s.study_id=sp.study_id
        WHERE p.student_id=@student_id AND p.payment_url IS NULL
    END TRY
    BEGIN CATCH
        DECLARE @msg NVARCHAR(2048) = N'ERROR: ' + ERROR_MESSAGE();
        THROW 53000, @msg, 1;
    END CATCH
END
```

4. Przeglądaj historię uczestnictwa

```
CREATE PROCEDURE student_attendance_history(@student_id INT)
AS
BEGIN
    BEGIN TRY
        IF NOT EXISTS(
            SELECT *
            FROM students
            WHERE @student_id=student_id
        )
        BEGIN
            THROW 53000, N'There is no student with given ID', 1
        END
        SELECT
            l.lesson_id,
            l.name,
            l.[date]
        FROM attendance a
        JOIN lessons l ON a.lesson_id=l.lesson_id
        WHERE a.student_id=@student_id AND a.[status]=1
        ORDER BY l.[date] ASC
    END TRY
    BEGIN CATCH
        DECLARE @msg NVARCHAR(2048) = N'ERROR: ' + ERROR_MESSAGE();
        THROW 53000, @msg, 1;
    END CATCH
END
```

5. Aktualizuj obecność

```sql
CREATE PROCEDURE update_attendance(@lesson_id INT, @student_id INT)
AS
BEGIN
    BEGIN TRY
        IF NOT EXISTS(
            SELECT *
            FROM attendance
            WHERE lesson_id=@lesson_id
        )
        BEGIN
            THROW 53000, N'There is no lesson with given ID', 1
        END
        IF NOT EXISTS(
            SELECT *
            FROM students
            WHERE student_id=@student_id
        )
        BEGIN
            THROW 53000, N'There is no student with given ID', 1
        END
        IF NOT EXISTS(
            SELECT *
            FROM attendance
            WHERE student_id=@student_id
        )
        BEGIN
            THROW 53000, N'There is no attendance for student with given ID', 1
        END
        UPDATE attendance
        SET [status]=1
        WHERE lesson_id=@lesson_id AND student_id=@student_id
    END TRY
    BEGIN CATCH
        DECLARE @msg NVARCHAR(2048) = N'ERROR: ' + ERROR_MESSAGE();
        THROW 53000, @msg, 1
    END CATCH
END
```

6. Dodaj lekcję ze studiów

```
CREATE PROCEDURE add_study_lesson(
    @lecturer_id INT,
    @course_id INT,
    @name VARCHAR(30),
    @date DATE,
    @start_time TIME,
    @end_time TIME,
    @classroom VARCHAR(10),
    @language VARCHAR(30),
    @description VARCHAR(max) = 'No description',
    @price SMALLMONEY = 0,
    @extended_price SMALLMONEY = 0,
    @students_limit INT = null,
    @translator_id INT = null
)
AS
BEGIN
    BEGIN TRY
        IF NOT exists(select * from lecturers where lecturer_id = @lecturer_id)
            BEGIN
                THROW 53000, N'Uknown lecturer!', 1;
            END

        IF NOT exists(select * from courses where course_id = @course_id and study_id is not null)
            BEGIN
                THROW 53000, N'Uknown course or course is not from any studies!', 1;
            END

        IF @language <> 'Polish' and @translator_id is null
            BEGIN
               THROW 53000, N'Lack of translator', 1;
            END

        IF @classroom = 'Online' and @students_limit is not null
            BEGIN
                THROW 53000, N'Online lessons cannot be limited', 1;
            END

        DECLARE @study_students_limit INT
        SET @study_students_limit = (select s.students_limit
                                     from studies s
                                     where s.study_id = (select c.study_id
                                                         from courses c
                                                         where c.course_id = @course_id))

        IF @students_limit is not null and @students_limit < @study_students_limit
            BEGIN
                THROW 53000, N'Incorrect students limit, limit is less than study limit', 1;
            end

        INSERT INTO lessons (lecturer_id, name, description, date, start_time, end_time, price, extended_price, students_limit,
                             classroom, translator_id, language)
        VALUES (@lecturer_id, @name, @description, @date, @start_time, @end_time, @price, @extended_price, @students_limit,
@classroom,
                @translator_id, @language)
    END TRY
    BEGIN CATCH
        DECLARE @msg VARCHAR(2048) = N'ERROR: ' + ERROR_MESSAGE();
        THROW 53000, @msg, 1;
    END CATCH
END
```

7. Dodaj lekcję z kursu

```sql
CREATE PROCEDURE add_course_lesson(
    @lecturer_id INT,
    @course_id INT,
    @name VARCHAR(30),
    @date DATE,
    @start_time TIME,
    @end_time TIME,
    @classroom VARCHAR(10),
    @language VARCHAR(30),
    @description VARCHAR(max) = 'No description',
    @translator_id INT = null
)
AS
BEGIN
    BEGIN TRY
        IF NOT exists(select * from lecturers where lecturer_id = @lecturer_id)
            BEGIN
                THROW 53000, N'Uknown lecturer!', 1;
            END

        IF NOT exists(select * from courses where course_id = @course_id and study_id is null)
            BEGIN
                THROW 53000, N'Uknown course', 1;
            END

        IF @language <> 'Polish' and @translator_id is null
            BEGIN
               THROW 53000, N'Lack of translator', 1;
            END

        DECLARE @course_students_limit INT
        SET @course_students_limit = (select c.students_limit
                                    from courses c
                                    where c.course_id = @course_id)

        INSERT INTO lessons (lecturer_id, name, description, date, start_time, end_time, students_limit,
                             classroom, translator_id, language)
        VALUES (@lecturer_id, @name, @description, @date, @start_time, @end_time, @course_students_limit, @classroom,
                @translator_id, @language)
    END TRY
    BEGIN CATCH
        DECLARE @msg VARCHAR(2048) = N'ERROR: ' + ERROR_MESSAGE();
        THROW 53000, @msg, 1;
    END CATCH
END
```

8. Dodaj webinar

```sql
CREATE PROCEDURE add_webinar(
    @lecturer_id INT,
    @name VARCHAR(30),
    @date DATE,
    @start_time TIME,
    @end_time TIME,
    @classroom VARCHAR(10),
    @language VARCHAR(30),
    @description VARCHAR(max) = 'No description',
    @price SMALLMONEY = 0,
    @students_limit INT = null,
    @translator_id INT = null
)
AS
BEGIN
    BEGIN TRY
        IF NOT exists(select * from lecturers where lecturer_id = @lecturer_id)
            BEGIN
                THROW 53000, N'Uknown lecturer!', 1;
            END

        IF @language <> 'Polish' and @translator_id is null
            BEGIN
               THROW 53000, N'Lack of translator', 1;
            END

        IF @classroom = 'Online' and @students_limit is not null
            BEGIN
                THROW 5300, N'Online lessons cannot be limited', 1;
            END

        INSERT INTO lessons (lecturer_id, name, description, date, start_time, end_time, price, extended_price, students_limit,
                             classroom, translator_id, language)
        VALUES (@lecturer_id, @name, @description, @date, @start_time, @end_time, @price, @price, @students_limit, @classroom,
                @translator_id, @language)
    END TRY
    BEGIN CATCH
        DECLARE @msg VARCHAR(2048) = N'ERROR: ' + ERROR_MESSAGE();
        THROW 53000, @msg, 1;
    END CATCH
END
```

9. Dodawanie lekcji do koszyka

```sql
CREATE PROCEDURE add_lesson_to_cart(@payment_id INT, @lesson_id INT, @student_id INT)
AS
BEGIN
    BEGIN TRY
        IF NOT EXISTS(
            SELECT *
            FROM payments
            WHERE payment_id=@payment_id
        )
        BEGIN
            THROW 53000, N'There is no payment with given ID', 1
        END
        IF NOT EXISTS(
            SELECT *
            FROM students
            WHERE student_id=@student_id
        )
        BEGIN
            THROW 53000, N'There is no student with given ID', 1
        END
        IF NOT EXISTS(
            SELECT *
            FROM lessons
            WHERE lesson_id=@lesson_id
        )
        BEGIN
            THROW 53000, N'There is no lesson with given ID', 1
        END
        DECLARE @is_extended INT
        DECLARE @lesson_studies INT
        SET @is_extended = 0
        SET @lesson_studies = dbo.get_lesson_studies(@lesson_id)
        IF(@lesson_studies IS NOT NULL)
            BEGIN
                IF (
                    NOT EXISTS(
                    SELECT p.payment_id
                    FROM study_payments sp
                    JOIN payments p ON sp.payment_id=p.payment_id
                    WHERE p.student_id=@student_id
                    AND (p.[status]=1 OR p.postponed=1)
                    AND dbo.get_lesson_studies(@lesson_id)=sp.study_id
                    )
                )
                BEGIN
                    SET @is_extended=1
                END
            END
        IF (SELECT p.status FROM payments p WHERE p.payment_id=@payment_id)=0
            AND dbo.calc_lesson_vacancy_amount(@lesson_id) > 0
        BEGIN
            IF NOT(
                (SELECT l.course_id FROM lessons l WHERE l.lesson_id=@lesson_id) IS NOT NULL
                AND @lesson_studies IS NULL
                )
            BEGIN
                INSERT INTO lesson_payments(lesson_id, payment_id, is_extended)
                VALUES (@lesson_id, @payment_id, @is_extended)
            END
        END
    END TRY
    BEGIN CATCH
        DECLARE @msg NVARCHAR(2048) = N'ERROR: ' + ERROR_MESSAGE();
        THROW 53000, @msg, 1
    END CATCH
END
```

10. Dodawanie kursu do koszyka

```sql
CREATE PROCEDURE add_course_to_cart(@payment_id INT, @course_id INT, @student_id INT, @is_full_price INT)
AS
BEGIN
    BEGIN TRY
        IF NOT EXISTS(
            SELECT *
            FROM payments
            WHERE payment_id=@payment_id
        )
        BEGIN
            THROW 53000, N'There is no payment with given ID', 1
        END
        IF NOT EXISTS(
            SELECT *
            FROM students
            WHERE student_id=@student_id
        )
        BEGIN
            THROW 53000, N'There is no student with given ID', 1
        END
        IF NOT EXISTS(
            SELECT *
            FROM courses
            WHERE course_id=@course_id
        )
        BEGIN
            THROW 53000, N'There is no course with given ID', 1
        END

        DECLARE @course_studies INT
        SET @course_studies = (SELECT c.study_id FROM courses c WHERE c.course_id=@course_id)

        IF (SELECT p.status FROM payments p WHERE p.payment_id=@payment_id)=0
            AND dbo.calc_course_vacancy_amount(@course_id) > 0
            AND @course_studies IS NULL
        BEGIN
            INSERT INTO course_payments(course_id, payment_id, is_full_price)
            VALUES (@course_id, @payment_id, @is_full_price)
        END

    END TRY
    BEGIN CATCH
        DECLARE @msg NVARCHAR(2048) = N'ERROR: ' + ERROR_MESSAGE();
        THROW 53000, @msg, 1
    END CATCH
END
```

11. Dodawanie studiów do koszyka

```
CREATE PROCEDURE add_study_to_cart(@payment_id INT, @study_id INT, @student_id INT)
AS
BEGIN
    BEGIN TRY
        IF NOT EXISTS(
            SELECT *
            FROM payments
            WHERE payment_id=@payment_id
        )
        BEGIN
            THROW 53000, N'There is no payment with given ID', 1
        END
        IF NOT EXISTS(
            SELECT *
            FROM students
            WHERE student_id=@student_id
        )
        BEGIN
            THROW 53000, N'There is no student with given ID', 1
        END
        IF NOT EXISTS(
            SELECT *
            FROM studies
            WHERE study_id=@study_id
        )
        BEGIN
            THROW 53000, N'There is no study with given ID', 1
        END

        IF (SELECT p.status FROM payments p WHERE p.payment_id=@payment_id)=0
            AND dbo.calc_study_vacancy_amount(@study_id) > 0
        BEGIN
            INSERT INTO study_payments(study_id, payment_id)
            VALUES (@study_id, @payment_id)
        END

    END TRY
    BEGIN CATCH
        DECLARE @msg NVARCHAR(2048) = N'ERROR: ' + ERROR_MESSAGE();
        THROW 53000, @msg, 1
    END CATCH
END
```

Funkcje

1. Obliczanie wolnych miejsc na danych studiach

```
CREATE FUNCTION calc_study_vacancy_amount(@study_id INT)
    RETURNS INT
        AS
        BEGIN
            RETURN
            (
                SELECT s.students_limit - COUNT(*)
                FROM studies s
                JOIN study_payments sp ON s.study_id=sp.study_id
                JOIN payments p ON p.payment_id=sp.payment_id
                WHERE s.study_id=@study_id AND (p.[status]=1 OR p.postponed=1)
                GROUP BY s.students_limit
            )
        END
```

2. Obliczanie wolnych miejsc na danym kursie

```
CREATE FUNCTION calc_course_vacancy_amount(@course_id INT)
    RETURNS INT
        AS
        BEGIN
            DECLARE @result INT
            DECLARE @course_study_id INT
            SET @course_study_id = (SELECT c.study_id FROM courses c WHERE c.course_id=@course_id)
            IF @course_study_id IS NOT NULL
                BEGIN
                    SET @result = dbo.calc_study_vacancy_amount(@course_study_id)
                END
            ELSE
                SET @result = (
                    SELECT
                        c.students_limit - COUNT(*)
                    FROM courses c
                    LEFT JOIN course_payments cp ON c.course_id=cp.course_id
                    LEFT JOIN payments p ON p.payment_id=cp.payment_id
                    WHERE c.course_id=@course_id AND (p.[status]=1 OR p.postponed=1)
                    GROUP BY c.students_limit
                )
            RETURN @result
        END
```

3. Obliczanie wolnych miejsc na danej lekcji

```
CREATE FUNCTION calc_lesson_vacancy_amount(@lesson_id INT)
    RETURNS INT
        AS
        BEGIN
            DECLARE @result INT
            DECLARE @MAXINT INT
            SET @MAXINT = 2147483647
            SET @result = (
                    SELECT l.students_limit - COUNT(*)
                    FROM lessons l
                    LEFT JOIN lesson_payments lp ON l.lesson_id=lp.lesson_id
                    LEFT JOIN payments p ON p.payment_id=lp.payment_id
                    WHERE l.lesson_id=@lesson_id AND (p.[status]=1 OR p.postponed=1)
                    GROUP BY l.students_limit
                )
            IF @result IS NULL
                BEGIN
                    SET @result = (SELECT students_limit FROM lessons WHERE lesson_id=@lesson_id)
                END
            IF @result IS NULL
                SET @result=@MAXINT
            RETURN @result
        END
```

4. Szukanie id studiów do których należy lekcja

```
CREATE FUNCTION get_lesson_studies(@lesson_id INT)
    RETURNS INT
        AS
        BEGIN
            DECLARE @lesson_course_id INT
            SET @lesson_course_id = (SELECT l.course_id FROM lessons l WHERE l.lesson_id=@lesson_id)
            IF @lesson_course_id IS NULL
                BEGIN
                    RETURN NULL
                END
            RETURN ( SELECT c.study_id FROM courses c WHERE c.course_id=@lesson_course_id)
        END
```