Spis treści

Wprowadzenie

Cel

Tworzona baza danych wspomagania firmy organizującej konferencji. Firma organizuje konferencje, które mogą być jedno- lub kilkudniowe. Klienci powinni móc rejestrować się na konferencje za pomocą systemu www. Klientami mogą być zarówno indywidualne osoby jak i firmy, natomiast uczestnikami konferencji są osoby (firma nie musi podawać od razu przy rejestracji listy uczestników - może zarezerwować odpowiednią ilość miejsc na określone dni oraz na warsztaty, natomiast na 2 tygodnie przed rozpoczęciem musi te dane uzupełnić - a jeśli sama nie uzupełni do tego czasu, to pracownicy dzwonią do firmy i ustalają takie informacje). Każdy uczestnik konferencji otrzymuje identyfikator imienny (+ ew. informacja o firmie na nim). Dla konferencji kilkudniowych, uczestnicy mogą rejestrować się na dowolne z tych dni.

Aktorzy

Administrator

Osoba znająca się na bazach danych, potrafiąca obsłużyć błędy oraz w miarę możliwości poprawiająca i rozszerzająca działanie bazy. Ma dostęp do wszystkich procedur i widoków.

Pracownik firmy

Osoba odpowiadająca za przyjmowanie zamówień od klientów biznesowych, egzekwowanie opłat za zamówione konferencje oraz pomagająca w przypadku problemów z rejestracją.

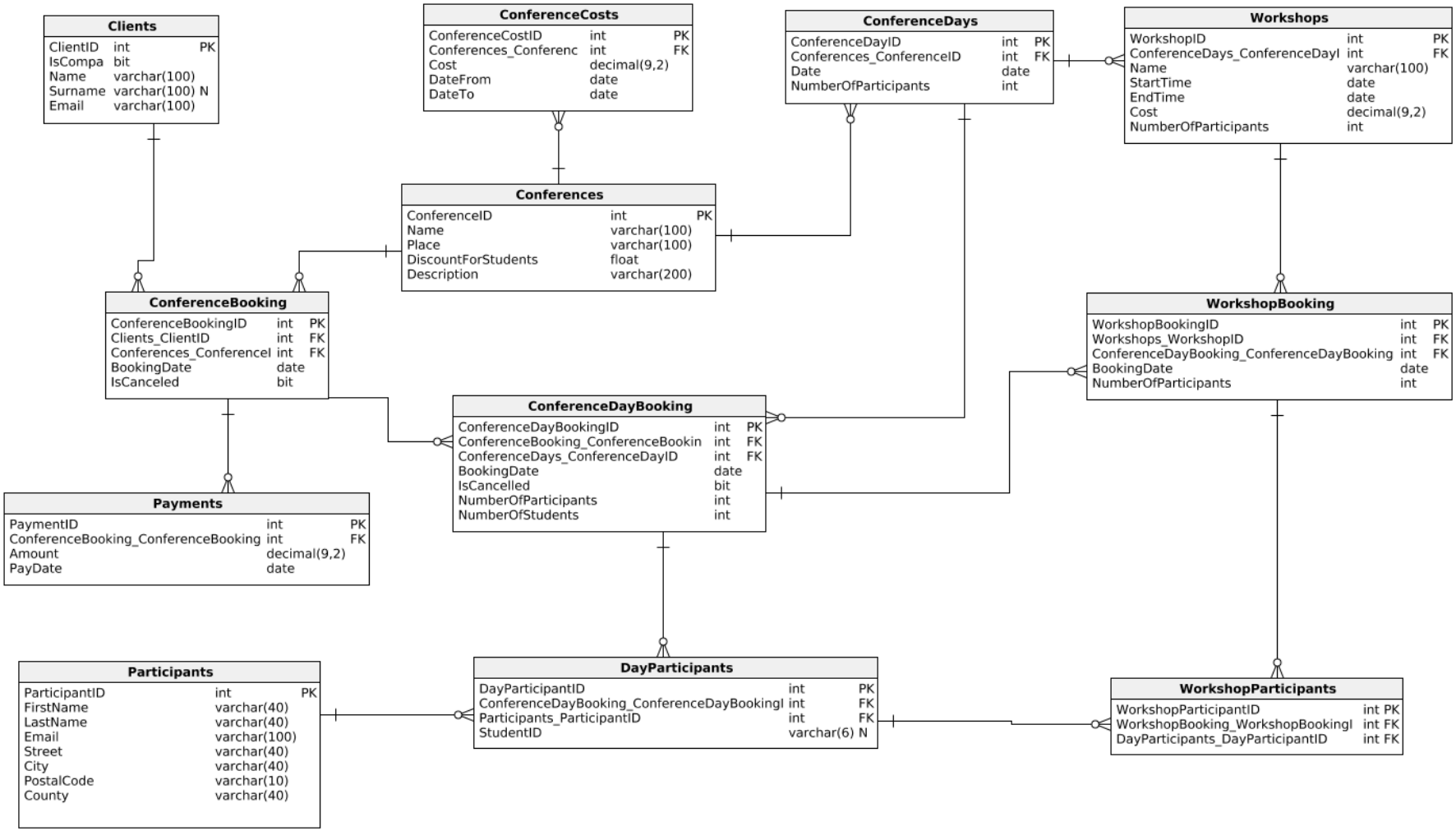
Klient biznesowy

Osoba składająca zamówienie oraz dodająca uczestników do poszczególnych konferencji i warsztatów za pomocą zewnętrznego serwisu.

Uczestnik

Osoba uczestnicząca w konferencji oraz wybranych warsztatach. Zostaje ona wprowadzona do bazy za pośrednictwem Klienta Biznesowego. Nie posiada dostępu do żadnych funkcji w systemie.

Schemat bazy



Tabele

Conferences

```
CREATE TABLE Conferences (
        ConferenceID INT NOT NULL IDENTITY,
        Name VARCHAR(100) NOT NULL,
        Place VARCHAR(100) NOT NULL,
        DiscountForStudents FLOAT NOT NULL DEFAULT 0,
        Description VARCHAR(200) NOT NULL,
        CONSTRAINT ProperDiscountForStudents CHECK (
                DiscountForStudents >= 0
                AND DiscountForStudents <= 100
                ),
        CONSTRAINT ProperDescription CHECK (LEN(Description) > 5),
        CONSTRAINT Conferences_pk PRIMARY KEY (ConferenceID)
        );
```

Nazwa kolumny	Typ danych	Inne informacje
ConferenceID	INT	PK
Name	VARCHAR(100)	
Place	VARCHAR(100)	
DiscountForStudents	FLOAT	
Description	VARCHAR(100)	

ConferenceDays

```
CREATE TABLE ConferenceDays (
        ConferenceDayID INT NOT NULL IDENTITY,
        Conferences_ConferenceID INT NOT NULL,
        DATE DATE NOT NULL,
        NumberOfParticipants INT NOT NULL,
        CONSTRAINT PositiveNumberOfConferenceParticipants CHECK (NumberOfParticipants > 0),
        CONSTRAINT ConferenceDays_pk PRIMARY KEY (ConferenceDayID)
        );


-- Reference: Conferences_ConferenceDays (table: ConferenceDays)
ALTER TABLE ConferenceDays ADD CONSTRAINT Conferences_ConferenceDays
FOREIGN KEY (Conferences_ConferenceID) REFERENCES Conferences
(ConferenceID)
```

Nazwa kolumny	Typ danych	Inne informacje
ConferenceDayID	INT	PK
Conferences_ConferenceID	INT	FK
DATE	DATE	
NumberOfParticipants	INT	MUST BE POSITIVE

ConferenceCosts

```
CREATE TABLE ConferenceCosts (
        ConferenceCostID INT NOT NULL IDENTITY,
        Conferences_ConferenceID INT NOT NULL,
        Cost DECIMAL(9, 2) NOT NULL,
        DateFrom DATE NOT NULL,
        DateTo DATE NOT NULL,
        CONSTRAINT ProperDayDifferance CHECK (DateFrom <= DateTo),
        CONSTRAINT NonnegativeCostConf CHECK (Cost >= 0),
        CONSTRAINT ConferenceCosts_pk PRIMARY KEY (ConferenceCostID)
        );


-- Reference: Conferences_ConferenceDay (table: ConferenceCosts)
ALTER TABLE ConferenceCosts ADD CONSTRAINT Conferences_ConferenceDay
FOREIGN KEY (Conferences_ConferenceID) REFERENCES Conferences
(ConferenceID)
```

Nazwa kolumny	Typ danych	Inne informacje
ConferenceCostID	INT	PK
Conferences_ConferenceID	INT	FK
Cost	DECIMAL(9,2)	Cost >= 0
DateFrom	DATE	DateFrom <= DateTo
DateTo	DATE	DateFrom <= DateTo

Workshops

```
CREATE TABLE Workshops (
        WorkshopID INT NOT NULL IDENTITY,
        ConferenceDays_ConferenceDayID INT NOT NULL,
        Name VARCHAR(100) NOT NULL,
        StartTime DATE NOT NULL,
        EndTime DATE NOT NULL,
        Cost DECIMAL(9, 2) NOT NULL DEFAULT 0,
        NumberOfParticipants INT NOT NULL DEFAULT 10,
        CONSTRAINT NonnegativeCostWorkshop CHECK (Cost >= 0),
        CONSTRAINT ProperTimeDifferance CHECK (StartTime <= EndTime),
        CONSTRAINT PosiviteWorkshopParticipants CHECK (NumberOfParticipants > 0),
        CONSTRAINT Workshops_pk PRIMARY KEY (WorkshopID)
        );


-- Reference: Workshops_ConferenceDays (table: Workshops)
ALTER TABLE Workshops ADD CONSTRAINT Workshops_ConferenceDays FOREIGN KEY
(ConferenceDays_ConferenceDayID) REFERENCES ConferenceDays
(ConferenceDayID)
```

Nazwa kolumny	Typ danych	Inne informacje
WorkshopID	INT	PK
ConferenceDays_ConferenceID	INT	FK
Name	VARCHAR(100)	
StartTime	DATE	StartTime <= EndTime
EndTime	DATE	StartTime <= EndTime
Cost	DECIMAL(9,2)	Cost >= 0
NumberOfParticipants	INT	MUST BE POSITIVE

ConferenceBooking

```
CREATE TABLE ConferenceBooking (
        ConferenceBookingID INT NOT NULL IDENTITY,
        Clients_ClientID INT NOT NULL,
        Conferences_ConferenceID INT NOT NULL,
        BookingDate DATE NOT NULL DEFAULT getdate(),
        IsCanceled BIT NOT NULL DEFAULT 0,
        CONSTRAINT ConferenceBooking_pk PRIMARY KEY (ConferenceBookingID)
        );


-- Reference: BookingConference_Clients (table: ConferenceBooking)
ALTER TABLE ConferenceBooking ADD CONSTRAINT BookingConference_Clients
FOREIGN KEY (Clients_ClientID) REFERENCES Clients (ClientID)

-- Reference: BookingConference_Conferences (table: ConferenceBooking)
ALTER TABLE ConferenceBooking ADD CONSTRAINT BookingConference_Conferences
FOREIGN KEY (Conferences_ConferenceID) REFERENCES Conferences
(ConferenceID)
```

Nazwa kolumny	Typ danych	Inne informacje
ConferenceBookingID	INT	PK
Clients_ClientID	INT	FK
Conferences_ConferenceID	INT	FK
BookingDate	DATE	
IsCanceled	BIT	

ConferenceDayBooking

```
CREATE TABLE ConferenceDayBooking (
 ConferenceDayBookingID INT NOT NULL IDENTITY,
 ConferenceBooking_ConferenceBookingID INT NOT NULL,
 ConferenceDays_ConferenceDayID INT NOT NULL,
 BookingDate DATE NOT NULL DEFAULT getdate(),
 IsCancelled BIT NOT NULL DEFAULT 0,
 NumberOfParticipants INT NOT NULL,
 NumberOfStudents INT NOT NULL DEFAULT 0,
 CONSTRAINT PositiveNumberOfParticipants CHECK (NumberOfParticipants > 0),
 CONSTRAINT NonnegativeNumberOfStudents CHECK (NumberOfStudents >= 0),
 CONSTRAINT ProperNumberOfStudents CHECK (NumberOfParticipants >= NumberOfStudents),
 CONSTRAINT ConferenceDayBooking_pk PRIMARY KEY (ConferenceDayBookingID)
 );


-- Reference: ConferenceDayBooking_ConferenceBooking (table:
ConferenceDayBooking)
ALTER TABLE ConferenceDayBooking ADD CONSTRAINT
ConferenceDayBooking_ConferenceBooking FOREIGN KEY
(ConferenceBooking_ConferenceBookingID) REFERENCES ConferenceBooking
(ConferenceBookingID)

-- Reference: ConferenceDayBooking_ConferenceDays (table:
ConferenceDayBooking)
ALTER TABLE ConferenceDayBooking ADD CONSTRAINT
ConferenceDayBooking_ConferenceDays FOREIGN KEY
(ConferenceDays_ConferenceDayID) REFERENCES ConferenceDays
(ConferenceDayID)
```

Nazwa kolumny	Typ danych	Inne informacje
ConferenceDayBookingID	INT	PK
ConferenceBooking_ConferenceBookingID	INT	FK
ConferenceDays_ConferenceDayID	INT	FK
BookingDate	DATE	
IsCanceled	BIT	
NumberOfParticipants	INT	POSITIVE AND NO SMALLER THAN NUMBEROFSTUDENTS
NumberOfStudents	INT	POSITIVE

WorkshopBooking

```
CREATE TABLE WorkshopBooking (
 WorkshopBookingID INT NOT NULL IDENTITY,
 Workshops_WorkshopID INT NOT NULL,
 ConferenceDayBooking_ConferenceDayBookingID INT NOT NULL,
 BookingDate DATE NOT NULL DEFAULT getdate(),
 NumberOfParticipants INT NOT NULL,
 CONSTRAINT PositiveWorkshopNumberOfParticipants CHECK (NumberOfParticipants > 0),
 CONSTRAINT WorkshopBooking_pk PRIMARY KEY (WorkshopBookingID)
 );


-- Reference: WorkshopBooking_ConferenceDayBooking (table: WorkshopBooking)
ALTER TABLE WorkshopBooking ADD CONSTRAINT
WorkshopBooking_ConferenceDayBooking FOREIGN KEY
(ConferenceDayBooking_ConferenceDayBookingID) REFERENCES
ConferenceDayBooking (ConferenceDayBookingID)

-- Reference: WorkshopBooking_Workshops (table: WorkshopBooking)
ALTER TABLE WorkshopBooking ADD CONSTRAINT WorkshopBooking_Workshops
FOREIGN KEY (Workshops_WorkshopID) REFERENCES Workshops (WorkshopID)
```

Nazwa kolumny	Typ danych	Inne informacje
WorkshopBookingID	INT	PK
Workshops_WorkshopID	INT	FK
ConferenceDayBooking_ConferenceDayBookingID	INT	FK
BookingDate	DATE	
NumberOfParticipants	BIT	POSITIVE

Payments

```
CREATE TABLE Payments (
        PaymentID INT NOT NULL IDENTITY,
        ConferenceBooking_ConferenceBookingID INT NOT NULL,
        Amount DECIMAL(9, 2) NOT NULL,
        PayDate DATE NOT NULL DEFAULT getdate(),
        CONSTRAINT PositiveValue CHECK (Amount > 0),
        CONSTRAINT Payments_pk PRIMARY KEY (PaymentID)
        );


-- Reference: Payments_ConferenceBooking (table: Payments)
ALTER TABLE Payments ADD CONSTRAINT Payments_ConferenceBooking FOREIGN KEY
(ConferenceBooking_ConferenceBookingID) REFERENCES ConferenceBooking
(ConferenceBookingID)
```

Nazwa kolumny	Typ danych	Inne informacje
PaymentID	INT	PK
ConferenceBooking_ConferenceBookingID	INT	FK
Amount	DECIMAL(9,2)	POSITIVE
PayDate	DATE	

Participants

```
CREATE TABLE Participants (
        ParticipantID INT NOT NULL IDENTITY,
        FirstName VARCHAR(40) NOT NULL,
        LastName VARCHAR(40) NOT NULL,
        Email VARCHAR(100) NOT NULL,
        Street VARCHAR(40) NOT NULL,
        City VARCHAR(40) NOT NULL,
        PostalCode VARCHAR(10) NOT NULL,
        Country VARCHAR(40) NOT NULL,
        CONSTRAINT Participants_pk PRIMARY KEY (ParticipantID)
        );
```

Nazwa kolumny	Typ danych	Inne informacje
ParticipantID	INT	PK
FirstName	VARCHAR(40)	
LastName	VARCHAR(40)	
Email	VARCHAR(100)	
Street	VARCHAR(40)	
City	VARCHAR(40)	
PostalCode	VARCHAR(10)	
Country	VARCHAR(40)	

DayParticipants

```
CREATE TABLE DayParticipants (
 DayParticipantID INT NOT NULL IDENTITY,
 ConferenceDayBooking_ConferenceDayBookingID INT NOT NULL,
 Participants_ParticipantID INT NOT NULL,
 StudentID VARCHAR(6) NULL DEFAULT NULL,
CONSTRAINT DayParticipants_pk PRIMARY KEY (DayParticipantID)
 );


-- Reference: DayParticipants_ConferenceDayBooking (table: DayParticipants)
ALTER TABLE DayParticipants ADD CONSTRAINT
DayParticipants_ConferenceDayBooking FOREIGN KEY
(ConferenceDayBooking_ConferenceDayBookingID) REFERENCES
ConferenceDayBooking (ConferenceDayBookingID)

-- Reference: Participants_DayParticipants (table: DayParticipants)
ALTER TABLE DayParticipants ADD CONSTRAINT Participants_DayParticipants
FOREIGN KEY (Participants_ParticipantID) REFERENCES Participants
(ParticipantID)
```

Nazwa kolumny	Typ danych	Inne informacje
DayParticipantID	INT	PK
ConferenceDayBooking_ConferenceDayBookingID	INT	FK
Participants_ParticipantID	INT	FK
StudentID	VARCHAR(6)	

WorkshopParticipants

```
CREATE TABLE WorkshopParticipants (
        WorkshopParticipantID INT NOT NULL IDENTITY,
        WorkshopBooking_WorkshopBookingID INT NOT NULL,
        DayParticipants_DayParticipantID INT NOT NULL,
        CONSTRAINT WorkshopParticipants_pk PRIMARY KEY (WorkshopParticipantID)
        );


-- Reference: DayParticipants_WorkshopParticipants (table:
WorkshopParticipants)
ALTER TABLE WorkshopParticipants ADD CONSTRAINT
DayParticipants_WorkshopParticipants FOREIGN KEY
(DayParticipants_DayParticipantID) REFERENCES DayParticipants
(DayParticipantID)

-- Reference: WorkshopParticipants_WorkshopBooking (table:
WorkshopParticipants)
ALTER TABLE WorkshopParticipants ADD CONSTRAINT
WorkshopParticipants_WorkshopBooking FOREIGN KEY
(WorkshopBooking_WorkshopBookingID) REFERENCES WorkshopBooking
(WorkshopBookingID)
```

Nazwa kolumny	Typ danych	Inne informacje
WorkshopParticipantID	INT	PK
WorkshopBooking_WorkshopBookingID	INT	FK
DayParticipants_DayParticipantID	INT	FK

Clients

```
CREATE TABLE Clients (
        ClientID INT NOT NULL IDENTITY,
        IsCompany BIT NOT NULL,
        Name VARCHAR(100) NOT NULL,
        Surname VARCHAR(100) NULL,
        Email VARCHAR(100) NOT NULL,
        CONSTRAINT Clients_pk PRIMARY KEY (ClientID)
        );
```

Nazwa kolumny	Typ danych	Inne informacje
ClientID	INT	PK
IsCompany	BIT	
Name	VARCHAR(100)	
Surname	VARCHAR(100)	
Email	VARCHAR(100)	

Indeksy

```
CREATE INDEX Client ON Clients (ClientID ASC)

CREATE INDEX Client_ConferenceBooking ON ConferenceBooking (Clients_ClientID ASC)

CREATE INDEX ConferenceBook ON ConferenceDayBooking (ConferenceDayBookingID ASC)

CREATE INDEX ConferenceDay ON ConferenceDayBooking (ConferenceDays_ConferenceDayID ASC)

CREATE INDEX NumberOfParticipantsInConferenceDay ON ConferenceDays (NumberOfParticipants ASC)

CREATE INDEX Conference ON ConferenceDays (Conferences_ConferenceID ASC)

CREATE INDEX Participant ON DayParticipants (DayParticipantID ASC)

CREATE INDEX ConferenceDayBook ON WorkshopBooking (ConferenceDayBooking_ConferenceDayBookingID ASC)

CREATE INDEX DayParticipant ON WorkshopParticipants (DayParticipants_DayParticipantID ASC)

CREATE INDEX NumberOfParticipantsInWorkshop ON Workshops (NumberOfParticipants ASC)

CREATE INDEX ConferenceDayID ON Workshops (ConferenceDays_ConferenceDayID ASC)
```

Widoki

View_MostPopularWorkshops

Wyświetla najpopularniejsze warsztaty

```
CREATE VIEW view_MostPopularWorkshops
AS
SELECT TOP 10 conf.name AS ConferenceName
 ,w.workshopid
 ,w.name
 ,isnull(sum(wb.NumberOfParticipants), 0) AS Popularnosc
FROM Workshops AS w
INNER JOIN conferencedays AS cd ON cd.conferencedayid = w.ConferenceDays_ConferenceDayID
INNER JOIN conferences AS conf ON conf.conferenceid = cd.Conferences_ConferenceID
INNER JOIN WorkshopBooking AS wb ON wb.Workshops_WorkshopID = w.WorkshopID
INNER JOIN WorkshopParticipants AS wp ON wp.WorkshopBooking_WorkshopBookingID = wb.workshopbookingid
GROUP BY w.workshopid
 ,w.name
 ,conf.name
ORDER BY Popularnosc DESC
GO
```

View_MostPopularConferences

Wyświetla najpopularniejsze konferencje

```
CREATE VIEW view_MostPopularConferences
AS
SELECT TOP 10 c.ConferenceID
  ,c.Name
  ,isnull(sum(cdb.NumberOfParticipants), 0) AS popularity
FROM Conferences AS c
INNER JOIN ConferenceDays AS cd ON cd.Conferences_ConferenceID = c.ConferenceID
INNER JOIN ConferenceDayBooking AS cdb ON cdb.ConferenceDays_ConferenceDayID = cd.ConferenceDayID
GROUP BY c.ConferenceID
  ,c.Name
ORDER BY popularity DESC
GO
```

View_MostPopularConferencesByStudents

Wyświetla najpopularniejsze konferencje wśród studentów

```
CREATE VIEW view_MostPopularConferencesByStudents
AS
SELECT TOP 10 c.ConferenceID
  ,c.Name
  ,isnull(sum(cdb.NumberOfStudents), 0) AS popularity
FROM Conferences AS c
INNER JOIN ConferenceDays AS cd ON cd.Conferences_ConferenceID = c.ConferenceID
INNER JOIN ConferenceDayBooking AS cdb ON cdb.ConferenceDays_ConferenceDayID = cd.ConferenceDayID
GROUP BY c.ConferenceID
  ,c.Name
ORDER BY popularity DESC
GO
```

View_MostProfitableConference

Wyświetla najbardziej zyskowne konferencje

```
CREATE VIEW view_MostProfitableConference
AS
SELECT TOP 10 c.ConferenceID
 ,c.Name
 ,isnull(sum(p.Amount), 0) AS Profit
FROM Conferences AS c
INNER JOIN ConferenceBooking AS cb ON cb.Conferences_ConferenceID = c.ConferenceID
INNER JOIN Payments AS p ON p.ConferenceBooking_ConferenceBookingID = cb.ConferenceBookingID
GROUP BY c.ConferenceID
 ,c.Name
ORDER BY Profit DESC
GO
```

View_MostProfitableWorkshops

Wyświetla najbardziej zyskowne warsztaty

```
CREATE VIEW view_MostProfitableWorkshops
AS
SELECT TOP 10 c.name AS NazwaKonferencji,
         w.name,
         w.cost
FROM Workshops AS w
INNER JOIN ConferenceDays AS cd ON cd.ConferenceDayID = w.ConferenceDays_ConferenceDayID
INNER JOIN Conferences AS c ON c.ConferenceID = cd.Conferences_ConferenceID
ORDER BY w.cost DESC
```

View_WorkshopsFreePlaces

Wyświetla informacje o miejscach na poszczególne warsztaty

```
CREATE VIEW view_WorkshopsFreePlaces
AS
SELECT c.name AS ConferenceName
  ,w.workshopid
  ,w.name
  ,w.numberofparticipants AS Miejsca
  ,isnull(SUM(wb.NumberOfParticipants), 0) AS Zajete
  ,w.numberofparticipants - isnull(SUM(wb.NumberOfParticipants), 0) AS WolneMiejsca
FROM workshops AS w
INNER JOIN WorkshopBooking AS wb ON wb.workshops_workshopid = w.workshopid
INNER JOIN conferencedays AS cd ON cd.conferencedayid = w.conferencedays_conferencedayid
INNER JOIN conferences AS c ON c.conferenceid = cd.conferences_conferenceid
GROUP BY w.workshopid
  ,w.name
  ,w.numberofparticipants
  ,c.name
GO
```

View_ConferenceFreePlaces

Wyświetla informacje o miejscach na poszczególne konferencje

```
CREATE VIEW view_ConferenceFreePlaces
AS
SELECT c.ConferenceID
  ,c.name
  ,cd.DATE
  ,isnull(sum(cdb.NumberOfParticipants), 0) AS Zajete
  ,cd.NumberOfParticipants AS Miejsca
  ,cd.NumberOfParticipants - isnull(sum(cdb.NumberOfParticipants), 0) AS WolneMiejsca
FROM Conferences AS c
INNER JOIN ConferenceDays AS cd ON cd.Conferences_ConferenceID = c.ConferenceID
INNER JOIN ConferenceDayBooking AS cdb ON cdb.ConferenceDays_ConferenceDayID = cd.ConferenceDayID
GROUP BY c.conferenceid
  ,c.Name
  ,cd.DATE
  ,cd.NumberOfParticipants
GO
```

View_AvailableConferenceDays

Wyświetla informacje o miejscach na konferencje mające wolne miejsca

```
CREATE VIEW view_AvailableConferenceDays
AS
SELECT cdp.*
FROM VIEW_ConferenceFreePlaces cdp
WHERE WolneMiejsca > 0
```

View_AvailableWorkshops

Wyświetla informacje o miejscach na warsztaty mające wolne miejsca

```
CREATE VIEW view_AvailableWorkshops
AS
SELECT w.*
FROM view_WorkshopsFreePlaces w
WHERE WolneMiejsca > 0
```

View_ClientsActivity

Wyświetla informacje o aktywności klientów, ich zamówieniach oraz ich wartości

```
CREATE VIEW view_ClientsActivity
AS
SELECT c.*
 ,isnull((
   SELECT COUNT(*)
   FROM conferencebooking AS cb
   WHERE cb.clients_clientid = c.ClientID AND cb.IsCanceled = 0
   ), 0) AS Bookings
 ,isnull((
   SELECT SUM(p.amount)
   FROM conferencebooking AS cb
   INNER JOIN payments AS p ON cb.ConferenceBookingID = p.ConferenceBooking_ConferenceBookingID
   WHERE cb.clients_clientid = c.ClientID AND cb.IsCanceled = 0
   ), 0) AS Payments
FROM Clients AS c
GO
```

View_MostProfitableClients

Wyświetla informacje o klientach od których firma zarobiła najwiecej

```
CREATE VIEW view_MostProfitableClients
AS
SELECT TOP 10 c.*
FROM view_ClientsActivity c
ORDER BY Payments
```

Procedury

Dodające

Procedure_AddConferenceDay

Procedura dodaje dzień do konferencji.

```
CREATE PROCEDURE PROCEDURE_AddConferenceDay (
        @ConferenceID INT,
        @Date DATE,
        @NumberOfParticipants INT
        )
AS
BEGIN
        INSERT INTO ConferenceDays (
                Conferences_ConferenceID,
                DATE,
                NumberOfParticipants
                )
        VALUES (
                @ConferenceID,
                @Date,
                @NumberOfParticipants
                );
END
```

Procedure_AddWorkshop

Procedura dodaje warsztat do konferencji.

```
CREATE PROCEDURE PROCEDURE_AddWorkshop (
        @ConferenceDayID INT,
        @Name VARCHAR(100),
        @StartTime DATE,
        @EndTime DATE,
        @Cost DECIMAL(9, 2),
        @NumberOfParticipants INT
        )
AS
BEGIN
        INSERT INTO Workshops (
                ConferenceDays_ConferenceDayID,
                Name,
                StartTime,
                EndTime,
                Cost,
                NumberOfParticipants
                )
        VALUES (
                @ConferenceDayID,
                @Name,
                @StartTime,
                @EndTime,
                @Cost,
                @NumberOfParticipants
                );
END
```

Procedure_AddConferenceCost

Procedura dodaje koszt konferencji na ustalone dni.

```
CREATE PROCEDURE PROCEDURE_AddConferenceCost (
        @ConferenceID INT,
        @Cost DECIMAL(9, 2),
        @DateFrom DATE,
        @DateTo DATE
        )
AS
BEGIN
        INSERT INTO ConferenceCosts (
                Conferences_ConferenceID,
                Cost,
                DateFrom,
                DateTo
                )
        VALUES (
                @ConferenceID,
                @Cost,
                @DateFrom,
                @DateTo
                );
END
```

Procedure_AddConferenceBooking

Procedura dodaje rezerwację klienta na konferencję.

```
CREATE PROCEDURE PROCEDURE_AddConferenceBooking (
 @ConferenceID INT,
 @ClientID INT,
 @BookingDate DATE
 )
AS
BEGIN
 IF NOT EXISTS (
   SELECT *
   FROM Conferences
   WHERE @ConferenceID = ConferenceID
   )
 BEGIN
  THROW 50000, 'Nie znaleziono konferencji', 1
 END
 ELSE
 BEGIN
  IF @BookingDate IS NULL
  BEGIN
   INSERT INTO ConferenceBooking (
    Conferences_ConferenceID,
    Clients_ClientID
    )
   VALUES (
    @ConferenceID,
    @ClientID
    );
  END
  ELSE
  BEGIN
   INSERT INTO ConferenceBooking (
    Conferences_ConferenceID,
    BookingDate,
    Clients_ClientID
    )
   VALUES (
    @ConferenceID,
    @BookingDate,
    @ClientID
    );
  END
 END
END
```

Procedure_AddConferenceDayBooking

Procedura dodaje rezerwację klienta na określony dzień konferencji.

```
CREATE PROCEDURE PROCEDURE_AddConferenceDayBooking (
 @ConferenceDayID INT,
 @ConferenceBookingID INT,
 @NumberOfParticipants INT,
 @NumberOfStudents INT
 )
AS
BEGIN
 IF NOT EXISTS (
   SELECT *
   FROM ConferenceDays
   WHERE @ConferenceDayID = ConferenceDayID
   )
  OR NOT EXISTS (
   SELECT *
   FROM ConferenceBooking
   WHERE @ConferenceBookingID = ConferenceBookingID
   )
 BEGIN
  THROW 50000, 'Nie znaleziono ConferenceDayID lub ConferenceBookingID', 1
 END
 ELSE
 BEGIN
  IF @NumberOfStudents IS NULL
  BEGIN
   INSERT INTO ConferenceDayBooking (
    ConferenceDays_ConferenceDayID,
    ConferenceBooking_ConferenceBookingID,
    NumberOfParticipants
    )
   VALUES (
    @ConferenceDayID,
    @ConferenceBookingID,
    @NumberOfParticipants
    );
  END
  ELSE
  BEGIN
   INSERT INTO ConferenceDayBooking (
    ConferenceDays_ConferenceDayID,
    ConferenceBooking_ConferenceBookingID,
    NumberOfParticipants,
    NumberOfStudents
    )
   VALUES (
    @ConferenceDayID,
    @ConferenceBookingID,
    @NumberOfParticipants,
    @NumberOfStudents
    );
  END
 END
END
```

Procedure_AddWorkshopBooking

Procedura dodaje rezerwację klienta na warsztat.

```
CREATE PROCEDURE PROCEDURE_AddWorkshopBooking (
 @WorkshopID INT,
 @ConferenceDayBookingID INT,
 @BookingDate DATE,
 @NumberOfParticipants INT
 )
AS
BEGIN
 IF NOT EXISTS (
   SELECT *
   FROM Workshops
   WHERE @WorkshopID = WorkshopID
   )
  OR NOT EXISTS (
   SELECT *
   FROM ConferenceDayBooking
   WHERE @ConferenceDayBookingID = ConferenceDayBookingID
   )
 BEGIN
  THROW 50000, 'Nie znaleziono WorkshopID lub ConferenceDayBookingID', 1
 END
 ELSE
 BEGIN
  IF @BookingDate IS NULL
  BEGIN
   INSERT INTO WorkshopBooking (
    Workshops_WorkshopID,
    ConferenceDayBooking_ConferenceDayBookingID,
    NumberOfParticipants
    )
   VALUES (
    @WorkshopID,
    @ConferenceDayBookingID,
    @NumberOfParticipants
    );
  END
  ELSE
  BEGIN
   INSERT INTO WorkshopBooking (
    Workshops_WorkshopID,
    ConferenceDayBooking_ConferenceDayBookingID,
    BookingDate,
    NumberOfParticipants
    )
   VALUES (
    @WorkshopID,
    @ConferenceDayBookingID,
    @BookingDate,
    @NumberOfParticipants
    );
  END
 END
END
```

Procedure_AddDayParticipant

Procedura dodaje osobę do rezerwacji dnia konferencji.

```
CREATE PROCEDURE PROCEDURE_AddDayParticipant (
 @ConferenceDayBookingID INT,
 @ParticipantID INT,
 @StudentID VARCHAR(6)
 )
AS
BEGIN
 IF NOT EXISTS (
   SELECT *
   FROM ConferenceDayBooking
   WHERE @ConferenceDayBookingID = ConferenceDayBookingID
   )
 BEGIN
  THROW 50000, 'Nie znaleziono ConferenceDayBookingID', 1
 END
 ELSE
 BEGIN
  IF NOT EXISTS (
    SELECT *
    FROM Participants
    WHERE @ParticipantID = ParticipantID
    )
  BEGIN
   THROW 50000, 'Nie znaleziono ParticipantID', 1
  END
  ELSE
  BEGIN
   INSERT INTO DayParticipants (
    ConferenceDayBooking_ConferenceDayBookingID,
    Participants_ParticipantID,
    StudentID
    )
   VALUES (
    @ConferenceDayBookingID,
    @ParticipantID,
    @StudentID
    );
  END
 END
END
```

Procedure_AddWorkshopParticipant

Procedura dodaje osobę do rezerwacji warsztatu.

```
CREATE PROCEDURE PROCEDURE_AddWorkshopParticipant (
 @WorkshopBookingID INT,
 @DayParticipantID INT
 )
AS
BEGIN
 IF NOT EXISTS (
   SELECT *
   FROM WorkshopBooking
   WHERE @WorkshopBookingID = WorkshopBookingID
   )
 BEGIN
  THROW 50000, 'Nie znaleziono WorkshopBookingID', 1
 END
 ELSE
 BEGIN
  IF NOT EXISTS (
    SELECT *
    FROM Participants
    WHERE @DayParticipantID = ParticipantID
    )
  BEGIN
   THROW 50000, 'Nie znaleziono ParticipantID', 1
  END
  ELSE
  BEGIN
   INSERT INTO WorkshopParticipants (
    WorkshopBooking_WorkshopBookingID,
    DayParticipants_DayParticipantID
    )
   VALUES (
    @WorkshopBookingID,
    @DayParticipantID
    );
  END
 END
END
```

Procedure_AddParticipant

Procedura dodaje uczestnika.

```
CREATE PROCEDURE PROCEDURE_AddParticipant (
 @FirstName VARCHAR(40),
 @LastName VARCHAR(40),
 @Email VARCHAR(100),
 @Street VARCHAR(40),
 @City VARCHAR(40),
 @PostalCode VARCHAR(10),
 @Country VARCHAR(40)
 )
AS
BEGIN
 INSERT INTO Participants (
  FirstName,
  LastName,
  Email,
  Street,
  City,
  PostalCode,
  County
  )
 VALUES (
  @FirstName,
  @LastName,
  @Email,
  @Street,
  @City,
  @PostalCode,
  @Country
  );
END
```

Procedure_AddClient

Procedura dodaje klienta.

```
CREATE PROCEDURE PROCEDURE_AddClient (
 @IsCompany BIT,
 @Name VARCHAR(100),
 @Surname VARCHAR(100),
 @Email VARCHAR(100)
 )
AS
BEGIN
 INSERT INTO Clients (
  IsCompany,
  Name,
  Surname,
  Email
  )
 VALUES (
  @IsCompany,
  @Name,
  @Surname,
  @Email
  );
END
```

Aktualizujące

Procedure_RemoveConference

Procedura usuwa konferencję.

```
CREATE PROCEDURE PROCEDURE_RemoveConference (@ConferenceID INT)
AS
IF NOT EXISTS (
  SELECT *
  FROM Conferences
  WHERE @ConferenceID = ConferenceID
  )
BEGIN
 THROW 50000, 'Nie znaleziono konferencji', 1
END
ELSE
BEGIN
 DELETE
 FROM Conferences
 WHERE Conferences.ConferenceID = @ConferenceID;
END
```

Procedure_UpdateConferenceDetails

Procedura aktualizuje dane konferencji.

```
CREATE PROCEDURE PROCEDURE_UpdateConferenceDetails (
 @ConferenceID INT,
 @Name VARCHAR(100),
 @Place VARCHAR(100),
 @DiscountForStudents FLOAT,
 @Description VARCHAR(200)
 )
AS
BEGIN
 IF NOT EXISTS (
   SELECT *
   FROM Conferences
   WHERE @ConferenceID = ConferenceID
   )
 BEGIN
  THROW 50000, 'Nie znaleziono konferencji', 1
 END
 ELSE
 BEGIN
  IF @Name IS NOT NULL
  BEGIN
   UPDATE Conferences
   SET Name = @Name
   WHERE ConferenceID = @ConferenceID;
  END
  ELSE
  BEGIN
   THROW 50000, 'ConferenceID is null', 1
  END

  IF @DiscountForStudents IS NOT NULL
  BEGIN
   UPDATE Conferences
   SET DiscountForStudents = @DiscountForStudents
   WHERE ConferenceID = @ConferenceID;
  END
  ELSE
  BEGIN
   THROW 50000, 'DiscountForStudents is null', 1
  END

  IF @Place IS NOT NULL
  BEGIN
   UPDATE Conferences
   SET Place = @Place
   WHERE ConferenceID = @ConferenceID;
  END
  ELSE
  BEGIN
   THROW 50000, 'Place is null', 1
  END

  IF @Description IS NOT NULL
  BEGIN
   UPDATE Conferences
   SET Description = @Description
   WHERE ConferenceID = @ConferenceID;
  END
```

```
  ELSE
  BEGIN
   THROW 50000, 'Description is null', 1
  END
 END
END
```

Procedure_UpdateWorkshopDetails

Procedura aktualizuje dane warsztatu.

```
CREATE PROCEDURE PROCEDURE_UpdateWorkshopDetails (
 @WorkshopID INT,
 @Name VARCHAR(100),
 @StartTime DATE,
 @EndTime DATE,
 @Cost DECIMAL(9, 2),
 @NumberOfParticipants INT
 )
AS
BEGIN
 IF NOT EXISTS (
   SELECT *
   FROM Workshops
   WHERE @WorkshopID = WorkshopID
   )
 BEGIN
  THROW 50000, 'Nie znaleziono warsztatu', 1
 END
 ELSE
 BEGIN
  IF @Name IS NOT NULL
  BEGIN
   UPDATE Workshops
   SET Name = @Name
   WHERE WorkshopID = @WorkshopID;
  END
  ELSE
  BEGIN
   THROW 50000, 'WorkshopID is null', 1
  END

  IF @StartTime IS NOT NULL
  BEGIN
   UPDATE Workshops
   SET StartTime = @StartTime
   WHERE WorkshopID = @WorkshopID;
  END
  ELSE
  BEGIN
   THROW 50000, 'StartTime is null', 1
  END

  IF @EndTime IS NOT NULL
  BEGIN
   UPDATE Workshops
   SET EndTime = @EndTime
   WHERE WorkshopID = @WorkshopID;
  END
  ELSE
  BEGIN
   THROW 50000, 'EndTime is null', 1
  END

  IF @Cost IS NOT NULL
  BEGIN
   UPDATE Workshops
   SET Cost = @Cost
   WHERE WorkshopID = @WorkshopID;
```

```
  END
  ELSE
  BEGIN
   THROW 50000, 'Cost is null', 1
  END

  IF @NumberOfParticipants IS NOT NULL
  BEGIN
   UPDATE Workshops
   SET NumberOfParticipants = @NumberOfParticipants
   WHERE WorkshopID = @WorkshopID;
  END
  ELSE
  BEGIN
   THROW 50000, 'NumberOfParticipants is null', 1
  END
 END
END
```

Procedure_CancelConferenceBooking

Procedura anuluje rezerwację klienta na konferencję.

```
CREATE PROCEDURE PROCEDURE_CancelConferenceBooking (@ConferenceBookingID INT)
AS
BEGIN
 IF NOT EXISTS (
   SELECT *
   FROM ConferenceBooking
   WHERE @ConferenceBookingID = ConferenceBookingID
   )
  OR NOT (
   SELECT IsCanceled
   FROM ConferenceBooking
   WHERE @ConferenceBookingID = ConferenceBookingID
   ) = 0
 BEGIN
  THROW 50000, 'Nie znaleziono ConferenceBookingID lub rezerwacja została już wcześniej anulowana', 1
 END
 ELSE
 BEGIN
  UPDATE ConferenceBooking
  SET IsCanceled = 1
  WHERE @ConferenceBookingID = ConferenceBookingID;
 END
 BEGIN
  UPDATE ConferenceDayBooking
  SET IsCancelled = 1
  WHERE @ConferenceBookingID = ConferenceBooking_ConferenceBookingID;
 END
END
```

Procedure_CancelConferenceDayBooking

Procedura anuluje rezerwację klienta na dzień konferencji.

```
CREATE PROCEDURE PROCEDURE_CancelConferenceDayBooking (@ConferenceDayBookingID INT)
AS
BEGIN
 IF NOT EXISTS (
   SELECT *
   FROM ConferenceDayBooking
   WHERE @ConferenceDayBookingID = ConferenceDayBookingID
   )
  OR NOT (
   SELECT IsCancelled
   FROM ConferenceDayBooking
   WHERE @ConferenceDayBookingID = ConferenceDayBookingID
   ) = 0
 BEGIN
  THROW 50000, 'Nie znaleziono ConferenceDayBookingID lub rezerwacja została już wcześniej anulowana', 1
 END
 ELSE
 BEGIN
  UPDATE ConferenceDayBooking
  SET IsCancelled = 1
  WHERE @ConferenceDayBookingID = ConferenceDayBookingID;
 END
END
```

Procedure_UpdateWorkshopNumberOfParticipants

Procedura aktualizuje ilość miejsc na warsztacie.

```
CREATE PROCEDURE PROCEDURE_UpdateWorkshopNumberOfParticipants (
 @WorkshopID INT,
 @NumberOfParticipants INT
 )
AS
BEGIN
 IF NOT EXISTS (
   SELECT *
   FROM Workshops
   WHERE @WorkshopID = WorkshopID
   )
 BEGIN
  THROW 50000, 'Nie znaleziono WorkshopID', 1
 END
 ELSE
 BEGIN
  UPDATE Workshops
  SET NumberOfParticipants = @NumberOfParticipants
  WHERE @WorkshopID = WorkshopID;
 END
END
```

Procedure_UpdateConferenceDayNumberOfParticipants

Procedura aktualizuje ilość miejsc w dniu konferencji.

```
CREATE PROCEDURE PROCEDURE_UpdateConferenceDayNumberOfParticipants (
 @ConferenceDayID INT,
 @NumberOfParticipants INT
 )
AS
BEGIN
 IF NOT EXISTS (
   SELECT *
   FROM ConferenceDays
   WHERE @ConferenceDayID = ConferenceDayID
   )
 BEGIN
  THROW 50000, 'Nie znaleziono ConferenceDayID', 1
 END
 ELSE
 BEGIN
  UPDATE ConferenceDays
  SET NumberOfParticipants = @NumberOfParticipants
  WHERE @ConferenceDayID = ConferenceDayID;
 END
END
```

Procedure_CancelConferenceBookingWithoutPayingAfterSevenDays

Procedura anuluje niedokonane płatności w przeciągu 7 dni.

```
CREATE PROCEDURE PROCEDURE_CancelConferenceBookingWithoutPayingAfterSevenDays
AS
BEGIN
 UPDATE ConferenceBooking
 SET IsCanceled = 1
 FROM (
  SELECT *
  FROM ConferenceBooking
  LEFT JOIN Payments ON ConferenceBookingID = ConferenceBooking_ConferenceBookingID
  WHERE IsCanceled = 0
   AND PaymentID IS NULL
   AND DATEDIFF(DAY, BookingDate, getdate()) > 7
  ) AS a
 WHERE ConferenceBooking.ConferenceBookingID = a.ConferenceBookingID
END

BEGIN
 UPDATE ConferenceDayBooking
 SET IsCancelled = 1
 FROM (
  SELECT ConferenceDayBookingID AS ID
  FROM ConferenceBooking
  INNER JOIN ConferenceDayBooking ON ConferenceBookingID = ConferenceBooking_ConferenceBookingID
  WHERE ConferenceBooking.IsCanceled = 1
   AND ConferenceDayBooking.IsCancelled = 0
  ) AS b
 WHERE ConferenceDayBookingID = b.ID
END
```

Wyświetlające

Procedure_ShowConferenceDaysAmountOfParticipants

Procedura wyświetli ilość uczestników określonego dnia konferencji.

```
CREATE PROCEDURE PROCEDURE_ShowConferenceDaysAmountOfParticipants (@ConferenceID INT)
AS
BEGIN
 IF NOT EXISTS (
   SELECT *
   FROM Conferences
   WHERE @ConferenceID = ConferenceID
   )
 BEGIN
  THROW 50000, 'Nie znaleziono ConferenceID', 1
 END
 ELSE
 BEGIN
  SELECT ConferenceDayID,
   DATE,
   SUM(ConferenceDayBooking.NumberOfParticipants) AS Participants,
   SUM(NumberOfStudents) AS Students
  FROM ConferenceDays
  INNER JOIN ConferenceDayBooking ON Conferences_ConferenceID = ConferenceDays_ConferenceDayID
  WHERE Conferences_ConferenceID = @ConferenceID
   AND IsCancelled = 0
  GROUP BY ConferenceDayID,
   DATE
 END
END
```

Procedure_ShowListOfEventsOfConference

Procedura wyświetli ilość wydarzeń określonego dnia konferencji

```
CREATE PROCEDURE PROCEDURE_ShowListOfEventsOfConference (@ConferenceDayID
INT)
AS
BEGIN
 IF NOT EXISTS (
   SELECT *
   FROM ConferenceDays
   WHERE @ConferenceDayID = ConferenceDayID
   )
 BEGIN
  THROW 50000, 'Nie znaleziono ConferenceDayID', 1
 END
 ELSE
 BEGIN
  SELECT WorkshopID,
   Name,
   StartTime,
   EndTime,
   Cost,
   NumberOfParticipants
  FROM Workshops
  WHERE ConferenceDays_ConferenceDayID = @ConferenceDayID
 END
END
```

Funkcje

Function_FreeDayPlaces

Zwraca ilość wolnych miejsc na podany dzień konferencji

```
CREATE FUNCTION FUNCTION_FreeDayPlaces (@ConferenceDayID INT)
RETURNS INT
AS
BEGIN
 RETURN (
   SELECT cd.numberofparticipants - isnull(SUM(cdb.NumberOfParticipants), 0)
   FROM conferencedays AS cd
   LEFT JOIN ConferenceDayBooking AS cdb ON cd.conferencedayid = cdb.conferencedays_conferencedayid
   WHERE cd.conferencedayid = @ConferenceDayID
   GROUP BY cd.conferencedayid
    ,cd.numberofparticipants
   );
END;
GO
```

Function_FreeWorkshopPlaces

Zwraca ilość wolnych miejsc na podany warsztat

```
CREATE FUNCTION FUNCTION_FreeWorkshopPlaces (@WorkShopID INT)
RETURNS INT
AS
BEGIN
 RETURN (
   SELECT w.numberofparticipants - isnull(SUM(wb.NumberOfParticipants), 0)
   FROM Workshops AS w
   LEFT JOIN WorkshopBooking AS wb ON wb.Workshops_WorkshopID = w.WorkshopID
   WHERE w.WorkshopID = @WorkShopID
   GROUP BY w.WorkshopID
    ,w.numberofparticipants
   );
END;
GO
```

Function_BookingFreeStudentPlaces

Zwraca ilość wolnych miejsc dla studentów

```
CREATE FUNCTION FUNCTION_BookingFreeStudentPlaces (@ConferenceDayBookingID INT)
RETURNS INT
AS
BEGIN
 RETURN (
   SELECT cdb.NumberOfStudents - COUNT(dp.conferencedaybooking_conferencedaybookingid)
   FROM ConferenceDayBooking cdb
   LEFT JOIN dayparticipants dp ON cdb.conferencedaybookingid = dp.ConferenceDayBooking_ConferenceDayBookingID
    AND dp.studentid IS NOT NULL
   WHERE cdb.ConferenceDayBookingID = @ConferenceDayBookingID
   GROUP BY cdb.ConferenceDayBookingID
    ,cdb.NumberOfStudents
   );
END;
GO
```

Function_DaysOfConference

Dla podanej konferencji zwraca dni, w których dana konferencja się odbywa

```
CREATE FUNCTION FUNCTION_DaysOfConference (@ConferenceID INT)
RETURNS @days TABLE (ConferenceDayID INT)
AS
BEGIN
 INSERT INTO @days
 SELECT cd.ConferenceDayID
 FROM ConferenceDays AS cd
 WHERE cd.Conferences_ConferenceID = @ConferenceID

 RETURN;
END
```

Function_ConferenceDayParticipants

Dla danego dnia konferencji zwraca tabelę z danymi uczestników określonego dnia tej konferencji

```
CREATE FUNCTION FUNCTION_ConferenceDayParticipants (@ConferenceDayID INT)
RETURNS @Participants TABLE (
 firstname VARCHAR(40)
 ,lastname VARCHAR(40)
 ,email VARCHAR(100)
 ,county VARCHAR(40)
 ,city VARCHAR(40)
 ,street VARCHAR(40)
 ,postalcode VARCHAR(10)
 )
AS
BEGIN
 INSERT INTO @Participants
 SELECT p.firstname
  ,p.lastname
  ,p.email
  ,p.county
  ,p.city
  ,p.Street
  ,p.PostalCode
 FROM Participants AS p
 INNER JOIN DayParticipants AS dp ON dp.Participants_ParticipantID = p.ParticipantID
 INNER JOIN ConferenceDayBooking AS cdb ON cdb.ConferenceDayBookingID = dp.ConferenceDayBooking_ConferenceDayBookingID
 WHERE cdb.ConferenceDays_ConferenceDayID = @ConferenceDayID
  AND cdb.IsCancelled = 0

 RETURN
END
GO
```

Function_WorkshopsPerConference

Dla danej konferencji zwraca tabelę z informacją o warsztatach odbywających się w ramach tej konferencji

```
CREATE FUNCTION FUNCTION_WorkshopsPerConference (@ConferenceID INT)
RETURNS @Workshop TABLE (
 workshopID INT
 ,name VARCHAR(100)
 ,starttime DATE
 ,endtime DATE
 ,cost DECIMAL(9, 2)
 ,numberofparticipants INT
 )
AS
BEGIN
 INSERT INTO @Workshop
 SELECT w.workshopid
  ,w.name
  ,w.StartTime
  ,w.EndTime
  ,w.cost
  ,w.NumberOfParticipants
 FROM Workshops AS w
 INNER JOIN ConferenceDays AS cd ON cd.ConferenceDayID = w.ConferenceDays_ConferenceDayID
 WHERE cd.Conferences_ConferenceID = @ConferenceID

 RETURN
END
GO
```

Function_WorkshopDate

Dla ID warsztatu zwraca tabelę z informacjami o danym warsztacie

```
CREATE FUNCTION FUNCTION_WorkshopDate (@WorkshopID INT)
RETURNS @WShop TABLE (
 workshopID INT
 ,name VARCHAR(100)
 ,startime DATE
 ,endtime DATE
 )
AS
BEGIN
 INSERT INTO @WShop
 SELECT workshopid
  ,name
  ,StartTime
  ,EndTime
 FROM Workshops
 WHERE WorkshopID = @WorkshopID

 RETURN
END
GO
```

Function_BookingDaysCost

Zwraca wartość sprzedanych miejsc dla konferencji bez warsztatów

```
CREATE FUNCTION FUNCTION_BookingDaysCost (@ConferenceBookID INT)
RETURNS MONEY
AS
BEGIN
 RETURN (
   SELECT isnull(SUM((cdb.NumberOfParticipants) * cc.cost + cdb.NumberOfStudents * cc.cost * (1 -
c.discountforstudents)), 0)
   FROM ConferenceDayBooking cdb
   INNER JOIN ConferenceBooking cb ON cdb.ConferenceBooking_ConferenceBookingID = cb.ConferenceBookingID
   INNER JOIN conferences AS c ON cb.conferences_conferenceid = c.conferenceid
   INNER JOIN conferencecosts cc ON c.conferenceid = cc.conferences_conferenceid
   WHERE cb.ConferenceBookingID = @ConferenceBookID
   GROUP BY cb.ConferenceBookingID
   );
END;
```

Function_BookingWorkshopCost

Zwraca wartość sprzedanych miejsc dla warsztatów danej konferencji

```
CREATE FUNCTION FUNCTION_BookingWorkshopCost (@ConferenceBookID INT)
RETURNS DECIMAL(9, 2)
AS
BEGIN
 RETURN (
   SELECT isnull(SUM(wb.numberofparticipants * w.cost), 0)
   FROM ConferenceBooking cb
   LEFT JOIN conferencedaybooking cdb ON cb.conferencebookingid = cdb.ConferenceBooking_ConferenceBookingID
   LEFT JOIN workshopbooking wb ON cdb.conferencedaybookingid = wb.conferencedaybooking_conferencedaybookingid
   LEFT JOIN workshops w ON wb.workshops_workshopid = w.workshopid
   WHERE cb.conferencebookingid = @ConferenceBookID
   GROUP BY cb.conferencebookingid
   );
END;
GO
```

Function_TotalBookingCost

Zwraca wartość sprzedanych miejsc dla danej konferencji włącznie z warsztatami

```
CREATE FUNCTION FUNCTION_TotalBookingCost (@ConferenceBookID INT)
RETURNS DECIMAL(9, 2)
AS
BEGIN
 RETURN (
   SELECT dbo.FUNCTION_BookingDaysCost(bs.conferencebookingid) + dbo.FUNCTION_BookingWorkshopCost(bs.conferencebookingid)
   FROM conferencebooking bs
   WHERE bs.conferencebookingid = @ConferenceBookID
   );
END
```

Function_WorkshopListForParticipant

Zwraca tabelę z informacją o warsztatach w jakich uczestniczyła podana osoba

```
CREATE FUNCTION FUNCTION_WorkshopListForParticipant (@Participant INT)
RETURNS @table TABLE (
 workshopid INT
 ,Name VARCHAR(100)
 )
AS
BEGIN
 INSERT INTO @table
 SELECT w.workshopid
  ,w.name
 FROM participants AS p
 INNER JOIN dayparticipants AS dp ON p.participantid = dp.participants_participantid
 INNER JOIN workshopparticipants AS wp ON dp.dayparticipantid = wp.dayparticipants_dayparticipantid
 INNER JOIN WorkshopBooking AS wb ON wp.WorkshopBooking_WorkshopBookingID = wb.workshopbookingid
 INNER JOIN workshops AS w ON wb.workshops_workshopid = w.workshopid
 WHERE p.participantid = @Participant

 RETURN
END
GO
```

Function_ConferencesDaysListForParticipant

Zwraca tabelę z informacją o konferencjach w jakich uczestniczyła podana osoba

```
CREATE FUNCTION FUNCTION_ConferencesDaysListForParticipant (@Participant INT)
RETURNS @table TABLE (
 name VARCHAR(100)
 ,place VARCHAR(100)
 ,DATE DATE
 )
AS
BEGIN
 INSERT INTO @table
 SELECT c.name
  ,c.place
  ,cd.DATE
 FROM participants AS p
 INNER JOIN dayparticipants AS dp ON p.participantid = dp.participants_participantid
 INNER JOIN ConferenceDayBooking AS cdb ON cdb.ConferenceDayBookingID = dp.ConferenceDayBooking_ConferenceDayBookingID
 INNER JOIN ConferenceDays AS cd ON cd.ConferenceDayID = cdb.ConferenceDays_ConferenceDayID
 INNER JOIN Conferences AS c ON c.ConferenceID = cd.Conferences_ConferenceID
 WHERE p.participantid = @Participant

 RETURN
END
GO
```

Function_ClientsOrdersList

Zwraca listę zamówień klientów

```
CREATE FUNCTION FUNCTION_ClientsOrdersList (@ClientID INT)
RETURNS @table TABLE (
 conferenceid INT
 ,name VARCHAR(100)
 ,place VARCHAR(100)
 )
AS
BEGIN
 INSERT INTO @table
 SELECT c.ConferenceID
  ,c.name
  ,c.place
 FROM Conferences AS c
 INNER JOIN ConferenceBooking AS cb ON cb.Conferences_ConferenceID = c.ConferenceID
 INNER JOIN Clients AS cl ON cl.ClientID = cb.Clients_ClientID
 WHERE cl.ClientID = @ClientID

 RETURN
END
GO
```

Triggery

Trigger_TooFewFreePlacesForDayBooking

Sprawdza, czy jest wystarczająca liczba miejsc w dniu konferencji.

```
CREATE TRIGGER TRIGGER_TooFewFreePlacesForDayBooking ON
ConferenceDayBooking
AFTER INSERT
AS
BEGIN
 SET NOCOUNT ON

 IF EXISTS (
   SELECT *
   FROM inserted AS a
   WHERE dbo.FUNCTION_FreeDayPlaces(a.ConferenceDays_ConferenceDayID) < 0
   )
 BEGIN
  THROW 50000, 'Brak wystarczajacej liczby miejsc w dniu konferencji', 1;
 END
END
```

Trigger_TooFewFreePlacesForWorkshopBooking

Sprawdza, czy jest wystarczająca liczba miejsc na warsztacie.

```
CREATE TRIGGER TRIGGER_TooFewFreePlacesForWorkshopBooking ON
WorkshopBooking
AFTER INSERT
AS
BEGIN
 SET NOCOUNT ON

 IF EXISTS (
   SELECT *
   FROM inserted AS a
   WHERE dbo.FUNCTION_FreeWorkshopPlaces(a.Workshops_WorkshopID) < 0
   )
 BEGIN
  THROW 50000, 'Brak wystarczajacej liczby miejsc w warsztacie', 1;
 END
END
```

Trigger_LessPlacesForDayThanForWorkshop

Blokuje rezerwację na warsztat, jeżeli klient zarezerwował mniej miejsc na dzień niż warsztat.

```
CREATE TRIGGER TRIGGER_LessPlacesForDayThanForWorkshop ON ConferenceDayBooking
AFTER INSERT
AS
BEGIN
 SET NOCOUNT ON;

 IF EXISTS (
   SELECT *
   FROM inserted AS a
   INNER JOIN WorkshopBooking AS b ON b.ConferenceDayBooking_ConferenceDayBookingID = a.ConferenceDayBookingID
   WHERE a.NumberOfParticipants < b.NumberOfParticipants
   )
 BEGIN
  THROW 50000,
   'Klient zarezerwował mniej miejsc na dzień niż na warsztat',
   1
 END
END
```

Trigger_NotEnoughBookedPlacesForDay

Blokuje zapis uczestnika na dzień konferencji, jeżeli wszystkie miejsca od klienta są już zajęte.

```
CREATE TRIGGER TRIGGER_NotEnoughBookedPlacesForDay ON DayParticipants
AFTER INSERT
AS
BEGIN
 SET NOCOUNT ON;

 IF EXISTS (
   SELECT *
   FROM inserted AS a
   WHERE (
     a.StudentID IS NULL
     AND dbo.FUNCTION_FreeDayPlacesForStudents(a.ConferenceDayBooking_ConferenceDayBookingID) < 0
     )
    OR (
     a.StudentID IS NULL
     AND dbo.FUNCTION_FreeDayPlacesForParticipants(a.ConferenceDayBooking_ConferenceDayBookingID) < 0
     )
   )
 BEGIN
  THROW 50000, 'Wszystkie miejsca klienta zostały już zarezerwowane', 1;
 END
END
```

Trigger_NotEnoughBookedPlacesForWorkshop

Blokuje zapis uczestnika na warsztat, jeżeli wszystkie zarezerwowane miejsca są już zajęte.

```
CREATE TRIGGER TRIGGER_NotEnoughBookedPlacesForWorkshop ON WorkshopParticipants
AFTER INSERT
AS
BEGIN
 SET NOCOUNT ON;

 IF EXISTS (
   SELECT *
   FROM inserted AS a
   WHERE dbo.FUNCTION_FreeWorkshopPlaces(a.WorkshopBooking_WorkshopBookingID) < 0
   )
 BEGIN
  THROW 50000, 'Wszystkie zarezerwowane miejsca są już zajęte', 1;
 END
END
```

Trigger_TooFewPlacesAfterDecreasingDayCapacity

Sprawdza, czy po zmniejszeniu liczby miejsc na dzień konferencji zarezerwowane miejsca mieszczą się w nowym limicie.

```
CREATE TRIGGER TRIGGER_TooFewPlacesAfterDecreasingDayCapacity ON ConferenceDays
AFTER UPDATE
AS
BEGIN
 SET NOCOUNT ON;

 IF EXISTS (
   SELECT *
   FROM inserted AS a
   LEFT JOIN ConferenceDayBooking AS cdb ON cdb.ConferenceDays_ConferenceDayID = a.ConferenceDayID
   GROUP BY a.ConferenceDayID,
    a.NumberOfParticipants
   HAVING a.NumberOfParticipants < SUM(cdb.NumberOfParticipants) + SUM(cdb.NumberOfStudents)
   )
 BEGIN
  THROW 50000, 'Po zmniejszeniu liczby miejsc na dzień konferencji zarezerwowane miejsca nie mieszczą się w nowym limicie', 1;
 END
END
```

Trigger_TooFewPlacesAfterDecreasingWorkshopCapacity

Sprawdza, czy po zmniejszeniu liczby miejsc na warsztat zarezerwowane miejsca mieszczą się w nowym limicie.

```
CREATE TRIGGER TRIGGER_TooFewPlacesAfterDecreasingWorkshopCapacity ON Workshops
AFTER UPDATE
AS
BEGIN
 SET NOCOUNT ON;

 IF EXISTS (
   SELECT *
   FROM inserted AS a
   LEFT JOIN WorkshopBooking AS wb ON wb.Workshops_WorkshopID = a.WorkshopID
   GROUP BY a.WorkshopID,
    a.NumberOfParticipants
   HAVING a.NumberOfParticipants < SUM(wb.NumberOfParticipants)
   )
 BEGIN
  THROW 50000, 'Po zmniejszeniu liczby miejsc na warsztat zarezerwowane miejsca nie mieszczą się w nowym limicie', 1;
 END
END
```

Trigger_BookingDayInDifferentConference

Sprawdza, czy rezerwowany jest dzień z konferencji odpowiadającej rezerwacji na konferencję.

```
CREATE TRIGGER TRIGGER_BookingDayInDifferentConference ON ConferenceDayBooking
AFTER INSERT
AS
BEGIN
 SET NOCOUNT ON;

 IF EXISTS (
   SELECT *
   FROM inserted AS a
   INNER JOIN ConferenceDays AS cd ON cd.ConferenceDayID = a.ConferenceDays_ConferenceDayID
   INNER JOIN Conferences AS c1 ON c1.ConferenceID = cd.Conferences_ConferenceID
   INNER JOIN ConferenceBooking AS cb ON cb.ConferenceBookingID = a.ConferenceBooking_ConferenceBookingID
   INNER JOIN Conferences AS c2 ON c2.ConferenceID = cb.Conferences_ConferenceID
   WHERE c1.ConferenceID != c2.ConferenceID
   )
 BEGIN
  THROW 50000, 'Klient próbuje przepisać do konferencji rezerwację dnia z innej konferencji', 1;
 END
END
```

Trigger_BookingDayAlreadyExists

Sprawdza, czy rezerwacja danego dnia konferencji już istnieje.

```
CREATE TRIGGER TRIGGER_BookingDayAlreadyExists ON ConferenceDayBooking
AFTER INSERT
AS
BEGIN
 SET NOCOUNT ON;

 IF EXISTS (
   SELECT *
   FROM inserted AS a
   LEFT JOIN ConferenceDayBooking AS cbd ON a.ConferenceBooking_ConferenceBookingID =
cbd.ConferenceBooking_ConferenceBookingID
    AND a.ConferenceDays_ConferenceDayID = cbd.ConferenceDays_ConferenceDayID
   WHERE a.ConferenceBooking_ConferenceBookingID != cbd.ConferenceBooking_ConferenceBookingID
   )
 BEGIN
  THROW 50000, 'Rezerwacja danego dnia konferencji już istnieje', 1;
 END
END
```

Trigger_BookingWorkshopInDifferentDay

Sprawdza, czy rezerwowany jest warsztat z dnia odpowiadającemu rezerwacji.

```
CREATE TRIGGER TRIGGER_BookingWorkshopInDifferentDay ON WorkshopBooking
AFTER INSERT
AS
BEGIN
 SET NOCOUNT ON;

 IF EXISTS (
   SELECT *
   FROM inserted AS a
   INNER JOIN Workshops AS w ON w.WorkshopID = a.Workshops_WorkshopID
   INNER JOIN ConferenceDays AS cd1 ON cd1.ConferenceDayID = w.ConferenceDays_ConferenceDayID
   INNER JOIN ConferenceDayBooking AS cdb ON cdb.ConferenceDayBookingID = a.ConferenceDayBooking_ConferenceDayBookingID
   INNER JOIN ConferenceDays AS cd2 ON cd2.ConferenceDayID = cdb.ConferenceDays_ConferenceDayID
   WHERE cd1.Conferences_ConferenceID != cd2.Conferences_ConferenceID
   )
 BEGIN
  THROW 50000, 'Klient próbuje zapisać się do warsztatu z innego dnia niż jego rezerwacja', 1;
 END
END
```

Trigger_ArePriceThresholdsMonotonous

Sprawdza, czy progi cenowe konferencji są ułożone w porządku rosnącym w stosunku do czasu pozostałego do konferencji.

```
CREATE TRIGGER TRIGGER_ArePriceThresholdsMonotonous ON ConferenceCosts
AFTER INSERT
AS
BEGIN
 SET NOCOUNT ON;

 DECLARE @Cost DECIMAL(9, 2) = (
   SELECT a.Cost
   FROM inserted AS a
   );

 IF EXISTS (
   SELECT *
   FROM inserted AS a
   LEFT JOIN ConferenceCosts AS cc ON a.Conferences_ConferenceID = cc.Conferences_ConferenceID
   WHERE (
     (
      cc.DateFrom < a.DateFrom
      AND a.DateFrom < cc.dateto
      )
     OR (
      a.DateFrom < cc.DateFrom
      AND cc.DateTo < a.DateTo
      )
     OR (
      cc.DateFrom >= a.DateFrom
      AND a.DateTo >= cc.DateTo
      )
     OR (
      a.DateFrom >= cc.DateFrom
      AND cc.DateTo >= a.DateTo
      )
     )
    AND cc.ConferenceCostID != a.ConferenceCostID
   )
 BEGIN
  THROW 50000,
   'Koszt pokrywa się z istniejącymi kosztami',
   1
 END
 ELSE
 BEGIN
  DECLARE @PreviousCost DECIMAL(9, 2) = (
    SELECT TOP 1 a.Cost
    FROM inserted AS a
    INNER JOIN ConferenceCosts AS cc ON cc.ConferenceCostID = a.ConferenceCostID
    WHERE cc.Conferences_ConferenceID = a.Conferences_ConferenceID
     AND cc.DateTo < a.DateFrom
    ORDER BY cc.DateFrom DESC
    )
  DECLARE @NextCost DECIMAL(9, 2) = (
    SELECT TOP 1 a.Cost
    FROM inserted AS a
    INNER JOIN ConferenceCosts AS cc ON cc.ConferenceCostID = a.ConferenceCostID
    WHERE cc.Conferences_ConferenceID = a.Conferences_ConferenceID
     AND cc.DateFrom > a.DateTo
    ORDER BY cc.DateFrom
    )

  IF (
    (
     @PreviousCost IS NOT NULL
     AND @PreviousCost >= @Cost
     )
    OR (
     @NextCost IS NOT NULL
     AND @NextCost <= @Cost
     )
    )
  BEGIN
   THROW 50000, 'Cena nie jest w poprawnej kolejności z poprzednimi (PreviousCost = %, NextCost = %.,
                 @PreviousCost,
                 @NextCost', 1;
  END
 END
END
```

Generator danych

Dane zostały wygenerowane w programie Redgate SQL Data Generator. Podczas generowania napotkaliśmy jednak duże trudności w związku z działaniem triggerów. Program po napotkaniu jakiegokolwiek błędu przestaje generować dane w obecnie generowanej tabeli i czyści ją. Na czas generowania danych zdecydowaliśmy się wyłączyć wszystkie triggery.

Dumb z bazy: