Bazy danych

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1. Wymagania i funkcje systemu

Opis ogólny

System służy do zarządzania rezerwacjami w biurze podróży. Pozwala klientom na rezerwowanie wycieczek oraz powiązanych dodatków (np. atrakcje, sprzęt, usługi), a pracownikom biura na kompleksowe zarządzanie ofertą, klientami oraz obsługę rezerwacji i płatności.

Funkcjonalności dla klientów:

- Przeglądanie dostępnych wycieczek i dodatków (np. atrakcje, sprzęt).
- Składanie rezerwacji na wybraną wycieczkę (wskazanie liczby miejsc).
- Dodawanie dodatków do rezerwacji (np. wynajem sprzętu, udział w dodatkowych atrakcjach).
- Anulowanie rezerwacji i zwrot pieniędz.
- Przypisywanie uczestników do rezerwacji i do wybranych dodatków.
- Podgląd statusu własnych rezerwacji, płatności i historii wyjazdów.

Funkcjonalności dla pracowników biura podróży:

- Dodawanie i edycja oferty wycieczek (nazwa, data, cena, limit miejsc).
- Zarządzanie dodatkami do wycieczek (np. nowe atrakcje, limity, ceny).
- Podgląd oraz szczegółowa obsługa wszystkich rezerwacji — możliwość modyfikacji, anulowania, przypisywania uczestników.
- Rejestracja i obsługa płatności, generowanie raportów rozliczeniowych.
- Kontrola dostępności miejsc (synchronizacja liczby uczestników z limitem).
- Raporty sprzedaży (np. miesięczne, roczne), analiza popularności wycieczek i dodatków.
- Obsługa zwrotów i anulacji (z uwzględnieniem terminów i polityki zwrotów).

Wymagania niefunkcjonalne:

- Spójność danych (np. nie można dodać uczestnika ponad liczbę zarezerwowanych miejsc).
- Automatyczne anulowanie nieopłaconych lub niekompletnych rezerwacji przed wyjazdem.
- Przejrzysty, zgodny z RODO podgląd danych klientów (np. osobne widoki bez wrażliwych danych).
- Rozszerzalność rozwiązania (możliwość dodania nowych typów atrakcji, raportów, kanałów płatności).
- Bezpieczna rejestracja płatności i zwrotów (np. historia transakcji, saldo rezerwacji).
- Przejrzysty podział ról użytkowników (klient/pracownik biura).

Procesy biznesowe:

1. Klient przegląda ofertę i wybiera wycieczkę.
2. Składa rezerwację, określając liczbę uczestników.
3. Dodaje wybrane dodatki do rezerwacji.
4. Przypisuje uczestników do rezerwacji oraz do konkretnych dodatków.
5. Opłaca rezerwację.
6. System monitoruje kompletność uczestników i płatności — w razie braków automatycznie anuluje rezerwację.
7. Pracownik ma pełny wgląd i możliwość interwencji na każdym etapie (np. ręczna edycja, zwroty, generowanie raportów).

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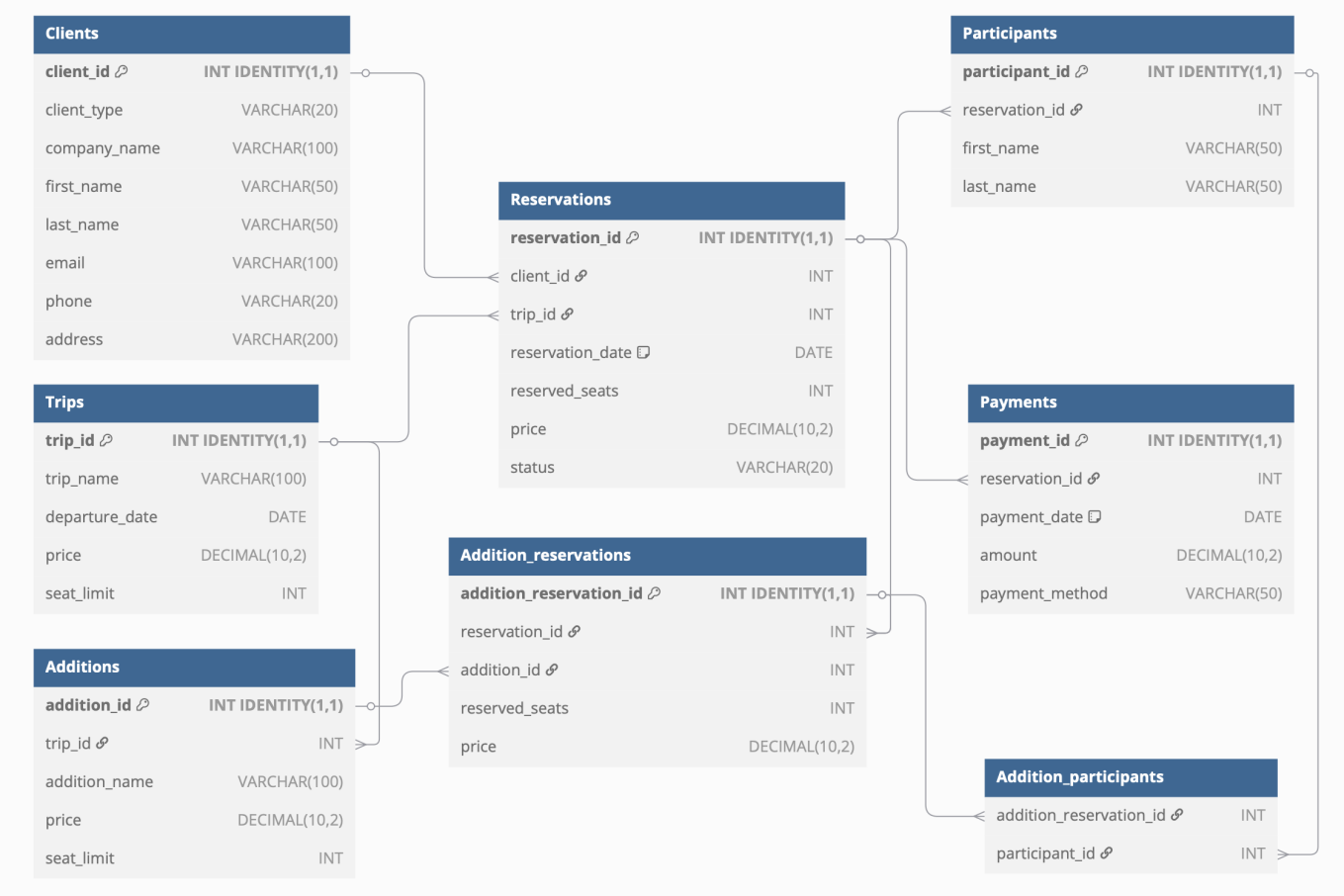
2. Baza danych

Schemat bazy danych



Opis poszczególnych tabel

Tabela: Clients

- Opis: Przechowuje dane klientów (osoby indywidualne lub firmy).

Nazwa atrybutu	Typ	Opis/Uwagi

Nazwa atrybutu	Typ	Opis/Uwagi
client_id	INT	Klucz główny, autoinkrementacja
client_type	VARCHAR(20)	Typ klienta: 'individual' lub 'company'
company_name	VARCHAR(100)	Nazwa firmy (dla firm)
first_name	VARCHAR(50)	Imię (dla osób indywidualnych)
last_name	VARCHAR(50)	Nazwisko (dla osób indywidualnych)
email	VARCHAR(100)	E-mail
phone	VARCHAR(20)	Telefon
address	VARCHAR(200)	Adres

```
CREATE TABLE "Clients" (
    "client_id" INT IDENTITY(1,1) PRIMARY KEY,
    "client_type" VARCHAR(20) CHECK (client_type IN ('individual',
'company')),
    "company_name" VARCHAR(100),
    "first_name" VARCHAR(50),
    "last_name" VARCHAR(50),
    "email" VARCHAR(100),
    "phone" VARCHAR(20),
    "address" VARCHAR(200)
);
```

Tabela: Trips

- Opis: Przechowuje informacje o dostępnych wycieczkach.

Nazwa atrybutu	Typ	Opis/Uwagi
trip_id	INT	Klucz główny
trip_name	VARCHAR(100)	Nazwa wycieczki
departure_date	DATE	Data wyjazdu
price	DECIMAL(10,2)	Cena
seat_limit	INT	Limit miejsc

```
CREATE TABLE "Trips" (
    "trip_id" INT IDENTITY(1,1) PRIMARY KEY,
    "trip_name" VARCHAR(100),
    "departure_date" DATE,
    "price" DECIMAL(10, 2),
```

```
    "seat_limit" INT
);
```

Tabela: Reservations

- Opis: Przechowuje rezerwacje wycieczek klientów.

Nazwa atrybutu	Typ	Opis/Uwagi
reservation_id	INT	Klucz główny
client_id	INT	Klucz obcy do Clients
trip_id	INT	Klucz obcy do Trips
reservation_date	DATE	Data rezerwacji (domyślnie dziś)
reserved_seats	INT	Liczba zarezerwowanych miejsc
price	DECIMAL(10,2)	Cena
status	VARCHAR(20)	Status: 'pending', 'cancelled'

```
CREATE TABLE "Reservations" (
    "reservation_id" INT IDENTITY(1,1) PRIMARY KEY,
    "client_id" INT,
    "trip_id" INT,
    "reservation_date" DATE DEFAULT CAST(GETDATE() AS DATE),
    "reserved_seats" INT,
    "price" DECIMAL(10,2),
    "status" VARCHAR(20) DEFAULT 'pending' CHECK (status IN ('pending',
'cancelled')),
    FOREIGN KEY ("client_id") REFERENCES Clients("client_id"),
    FOREIGN KEY ("trip_id") REFERENCES Trips("trip_id")
);
```

Tabela: Participants

- Opis: Przechowuje uczestników przypisanych do rezerwacji.

Nazwa atrybutu	Typ	Opis/Uwagi
participant_id	INT	Klucz główny
reservation_id	INT	Klucz obcy do Reservations
first_name	VARCHAR(50)	Imię uczestnika
last_name	VARCHAR(50)	Nazwisko uczestnika

```
CREATE TABLE "Participants" (
    "participant_id" INT IDENTITY(1,1) PRIMARY KEY,
    "reservation_id" INT,
    "first_name" VARCHAR(50),
    "last_name" VARCHAR(50),
    FOREIGN KEY ("reservation_id") REFERENCES
Reservations("reservation_id")
);
```

Tabela: Additions

- Opis: Dodatkowe atrakcje lub usługi powiązane z wycieczkami.

Nazwa atrybutu	Typ	Opis/Uwagi
addition_id	INT	Klucz główny
trip_id	INT	Klucz obcy do Trips
addition_name	VARCHAR(100)	Nazwa dodatku
price	DECIMAL(10,2)	Cena dodatku
seat_limit	INT	Limit miejsc

```
CREATE TABLE "Additions" (
    "addition_id" INT IDENTITY(1,1) PRIMARY KEY,
    "trip_id" INT,
    "addition_name" VARCHAR(100),
    "price" DECIMAL(10,2),
    "seat_limit" INT,
    FOREIGN KEY ("trip_id") REFERENCES Trips("trip_id")
);
```

Tabela: Addition_reservations

- Opis: Rezerwacje dodatków do rezerwacji głównych.

Nazwa atrybutu	Typ	Opis/Uwagi
addition_reservation_id	INT	Klucz główny
reservation_id	INT	Klucz obcy do Reservations
addition_id	INT	Klucz obcy do Additions
reserved_seats	INT	Ilość zarezerwowanych miejsc
price	DECIMAL(10,2)	Cena

```
CREATE TABLE "Addition_reservations" (
    "addition_reservation_id" INT IDENTITY(1,1) PRIMARY KEY,
    "reservation_id" INT,
    "addition_id" INT,
    "reserved_seats" INT,
    "price" DECIMAL(10,2),
    FOREIGN KEY ("reservation_id") REFERENCES
Reservations("reservation_id"),
    FOREIGN KEY ("addition_id") REFERENCES Additions("addition_id")
);
```

Tabela: Addition_participants

- Opis: Mapowanie uczestników na dodatki.

Nazwa atrybutu	Typ	Opis/Uwagi
addition_reservation_id	INT	Klucz obcy do Addition_reservations
participant_id	INT	Klucz obcy do Participants

```
CREATE TABLE "Addition_participants" (
    "addition_reservation_id" INT,
    "participant_id" INT,
    FOREIGN KEY ("addition_reservation_id") REFERENCES
Addition_reservations("addition_reservation_id"),
    FOREIGN KEY ("participant_id") REFERENCES
Participants("participant_id")
);
```

Tabela: Payments

- Opis: Płatności powiązane z rezerwacjami.

Nazwa atrybutu	Typ	Opis/Uwagi
payment_id	INT	Klucz główny
reservation_id	INT	Klucz obcy do Reservations
payment_date	DATE	Data płatności (domyślnie dziś)
amount	DECIMAL(10,2)	Kwota
payment_method	VARCHAR(50)	Metoda płatności

```

```

```
CREATE TABLE "Payments" (
    "payment_id" INT IDENTITY(1,1) PRIMARY KEY,
    "reservation_id" INT,
    "payment_date" DATE DEFAULT CAST(GETDATE() AS DATE),
    "amount" DECIMAL(10, 2),
    "payment_method" VARCHAR(50),
    FOREIGN KEY ("reservation_id") REFERENCES
Reservations("reservation_id")
);
```

3. Widoki, procedury/funkcje, triggery

Widoki

- `additions_performance_report` - Analizuje popularność i rentowność dodatkowych atrakcji.

```
CREATE VIEW additions_performance_report AS
SELECT
    a.addition_id,
    a.addition_name,
    a.price,
    a.seat_limit,
    t.trip_name,
    COUNT(ar.addition_reservation_id) AS total_reservations,
    SUM(ar.reserved_seats) AS total_seats_sold,
    a.seat_limit - SUM(ar.reserved_seats) AS remaining_seats,
    CAST(SUM(ar.reserved_seats) AS FLOAT) / a.seat_limit * 100 AS
utilization_percentage,
    SUM(ar.reserved_seats * ar.price) AS total_revenue,
    AVG(CAST(ar.reserved_seats AS FLOAT)) AS
avg_seats_per_reservation,
    CAST(COUNT(ar.addition_reservation_id) AS FLOAT) /
    NULLIF((SELECT COUNT(r.reservation_id)
            FROM Reservations r
            WHERE r.trip_id = t.trip_id AND r.status <> 'cancelled'),
0) * 100 AS attachment_rate,
    (SELECT COUNT(ap.participant_id)
    FROM Addition_participants ap
    WHERE ap.addition_reservation_id IN
        (SELECT ar2.addition_reservation_id
            FROM Addition_reservations ar2
            WHERE ar2.addition_id = a.addition_id)
    ) AS total_participants,
    CASE
        WHEN SUM(ar.reserved_seats) >= a.seat_limit THEN 'Wyprzedana'
        WHEN SUM(ar.reserved_seats) >= a.seat_limit * 0.8 THEN 'Prawie
pełna'
        ELSE 'Dostępna'
```

```
    END AS availability_status
    FROM Additions a
JOIN Trips t ON a.trip_id = t.trip_id
LEFT JOIN Addition_reservations ar ON a.addition_id = ar.addition_id
LEFT JOIN Reservations r ON ar.reservation_id = r.reservation_id AND
r.status <> 'cancelled'
GROUP BY a.addition_id, a.addition_name, a.price, a.seat_limit,
t.trip_name, t.trip_id;
```

- `clients_public` - Udostępnia podstawowe informacje o klientach bez wrażliwych danych jak adres email czy pełny adres.

```
CREATE VIEW clients_public AS
SELECT
    client_id,
    client_type,
    CASE
        WHEN client_type = 'individual' THEN first_name + ' ' +
last_name
        ELSE company_name
    END AS display_name,
    phone
FROM Clients;
```

- `monthly_sales_report` - Agreguje miesięczne statystyki sprzedaży dla analiz trendów i planowania.

```
CREATE VIEW monthly_sales_report AS
SELECT
    YEAR(r.reservation_date) AS year,
    MONTH(r.reservation_date) AS month,
    DATENAME(month, r.reservation_date) + ' ' +
CAST(YEAR(r.reservation_date) AS VARCHAR) AS month_year,
    COUNT(r.reservation_id) AS total_reservations,
    SUM(r.reserved_seats) AS total_seats_sold,
    COUNT(DISTINCT r.client_id) AS unique_clients,
    SUM(dbo.get_total_reservation_cost(r.reservation_id)) AS
total_revenue,
    SUM(dbo.get_total_payment(r.reservation_id)) AS
total_payments_received,
    SUM(dbo.get_total_reservation_cost(r.reservation_id) -
dbo.get_total_payment(r.reservation_id)) AS outstanding_balance,
    AVG(CAST(dbo.get_total_reservation_cost(r.reservation_id) AS
FLOAT)) AS avg_reservation_value,
    AVG(CAST(r.reserved_seats AS FLOAT)) AS avg_seats_per_reservation
FROM Reservations r
WHERE r.status <> 'cancelled'
    AND r.reservation_date >= DATEADD(year, -2, GETDATE())
```

```
GROUP BY YEAR(r.reservation_date), MONTH(r.reservation_date),
DATENAME(month, r.reservation_date);
```

- `participants_with_trip` - Upraszcza dostęp do informacji o uczestnikach wraz z kontekstem wycieczki.

```
CREATE VIEW participants_with_trip AS
SELECT
    p.participant_id,
    p.first_name,
    p.last_name,
    p.first_name + ' ' + p.last_name AS full_name,
    r.reservation_id,
    r.reservation_date,
    r.status AS reservation_status,
    CASE
        WHEN c.client_type = 'individual' THEN c.first_name + ' ' +
c.last_name
        ELSE c.company_name
    END AS client_name,
    c.phone AS client_phone,
    t.trip_id,
    t.trip_name,
    t.departure_date,
    t.price AS trip_price,
    DATEDIFF(day, GETDATE(), t.departure_date) AS days_until_departure
FROM Participants p
JOIN Reservations r ON p.reservation_id = r.reservation_id
JOIN Clients c ON r.client_id = c.client_id
JOIN Trips t ON r.trip_id = t.trip_id;
```

- `payments_report` - Analizuje przepływy finansowe według metod płatności i okresów.

```
CREATE VIEW payments_report AS
SELECT
    YEAR(p.payment_date) AS year,
    MONTH(p.payment_date) AS month,
    DATENAME(month, p.payment_date) + ' ' + CAST(YEAR(p.payment_date)
AS VARCHAR) AS month_year,
    p.payment_method,
    COUNT(p.payment_id) AS total_payments,
    SUM(p.amount) AS total_amount,
    AVG(p.amount) AS avg_payment_amount,
    SUM(CASE WHEN p.amount < 0 THEN 1 ELSE 0 END) AS refund_count,
    SUM(CASE WHEN p.amount < 0 THEN p.amount ELSE 0 END) AS
total_refunds,
    SUM(CASE WHEN p.amount > 0 THEN p.amount ELSE 0 END) AS
total_incoming,
    SUM(CASE WHEN p.amount > 0 THEN p.amount ELSE 0 END) +
```

```
    SUM(CASE WHEN p.amount < 0 THEN p.amount ELSE 0 END) AS
net_payments
FROM Payments p
WHERE p.payment_date >= DATEADD(year, -2, GETDATE())
GROUP BY YEAR(p.payment_date), MONTH(p.payment_date), DATENAME(month,
p.payment_date), p.payment_method;
```

- `reservations_full` - Kompleksowy widok łączący wszystkie kluczowe informacje o rezerwacji w jednym miejscu.

```
CREATE VIEW reservations_full AS
SELECT
    r.reservation_id,
    r.reservation_date,
    r.status,
    c.client_id,
    CASE
        WHEN c.client_type = 'individual' THEN c.first_name + ' ' +
c.last_name
        ELSE c.company_name
    END AS client_name,
    c.client_type,
    c.email,
    c.phone,
    t.trip_id,
    t.trip_name,
    t.departure_date,
    r.reserved_seats,
    r.price AS unit_price,
    r.reserved_seats * r.price AS total_trip_cost,
    dbo.get_total_reservation_cost(r.reservation_id) AS
total_cost_with_additions,
    dbo.get_total_payment(r.reservation_id) AS total_paid,
    dbo.get_total_reservation_cost(r.reservation_id) -
dbo.get_total_payment(r.reservation_id) AS balance_due,
    CASE
        WHEN dbo.get_total_payment(r.reservation_id) >=
dbo.get_total_reservation_cost(r.reservation_id)
        THEN 'Opłacone'
        WHEN dbo.get_total_payment(r.reservation_id) > 0
        THEN 'Częściowo opłacone'
        ELSE 'Nieopłacone'
    END AS payment_status
FROM Reservations r
JOIN Clients c ON r.client_id = c.client_id
JOIN Trips t ON r.trip_id = t.trip_id;
```

- `trip_popularity_report` - Analizuje popularność i rentowność poszczególnych wycieczek.

```

```

```
CREATE VIEW trip_popularity_report AS
SELECT
    t.trip_id,
    t.trip_name,
    t.departure_date,
    t.price,
    t.seat_limit,
    COUNT(r.reservation_id) AS total_reservations,
    SUM(r.reserved_seats) AS total_seats_sold,
    t.seat_limit - SUM(r.reserved_seats) AS remaining_seats,
    CAST(SUM(r.reserved_seats) AS FLOAT) / t.seat_limit * 100 AS
occupancy_percentage,
    SUM(dbo.get_total_reservation_cost(r.reservation_id)) AS
total_revenue,
    AVG(CAST(dbo.get_total_reservation_cost(r.reservation_id) AS
FLOAT)) AS avg_reservation_value,
    (SELECT COUNT(DISTINCT ar.addition_id)
    FROM Addition_reservations ar
    JOIN Reservations r2 ON ar.reservation_id = r2.reservation_id
    WHERE r2.trip_id = t.trip_id
    ) AS unique_additions_sold,
    (SELECT SUM(ar.reserved_seats * ar.price)
    FROM Addition_reservations ar
    JOIN Reservations r2 ON ar.reservation_id = r2.reservation_id
    WHERE r2.trip_id = t.trip_id
    ) AS additions_revenue,
    CASE
        WHEN t.departure_date < GETDATE() THEN 'Zakończona'
        WHEN SUM(r.reserved_seats) >= t.seat_limit THEN 'Wyprzedana'
        WHEN SUM(r.reserved_seats) >= t.seat_limit * 0.8 THEN 'Prawie
pełna'
        ELSE 'Dostępna'
    END AS trip_status
FROM Trips t
LEFT JOIN Reservations r ON t.trip_id = r.trip_id AND r.status <>
'cancelled'
GROUP BY t.trip_id, t.trip_name, t.departure_date, t.price,
t.seat_limit;
```

- `trips_basic` - Pokazuje publiczne informacje o wycieczkach bez ujawniania wrażliwych danych biznesowych.

```
CREATE VIEW trips_basic AS
SELECT
    trip_id,
    trip_name,
    departure_date,
    price,
    dbo.get_free_trip_seats(trip_id) AS available_seats,
    CASE
        WHEN departure_date > GETDATE() THEN 'Dostępna'
```

```
        ELSE 'Zakończona'
    END AS status
FROM Trips
WHERE departure_date >= DATEADD(day, -30, GETDATE());
```

- `upcoming_departures_report` - Monitoring statusu przygotowań do nadchodzących wyjazdów.

```
CREATE VIEW upcoming_departures_report AS
SELECT
    t.trip_id,
    t.trip_name,
    t.departure_date,
    DATEDIFF(day, GETDATE(), t.departure_date) AS
days_until_departure,
    t.seat_limit,
    SUM(r.reserved_seats) AS seats_sold,
    t.seat_limit - SUM(r.reserved_seats) AS seats_available,
    COUNT(r.reservation_id) AS total_reservations,
    COUNT(DISTINCT r.client_id) AS unique_clients,
    (SELECT COUNT(p.participant_id)
    FROM Participants p
    JOIN Reservations r2 ON p.reservation_id = r2.reservation_id
    WHERE r2.trip_id = t.trip_id AND r2.status <> 'cancelled'
    ) AS participants_assigned,
    SUM(r.reserved_seats) - (SELECT COUNT(p.participant_id)
                             FROM Participants p
                             JOIN Reservations r2 ON p.reservation_id =
r2.reservation_id
                             WHERE r2.trip_id = t.trip_id AND r2.status
<> 'cancelled'
                         ) AS participants_missing,

    SUM(dbo.get_total_reservation_cost(r.reservation_id)) AS
total_revenue_expected,
    SUM(dbo.get_total_payment(r.reservation_id)) AS
total_payments_received,
    SUM(dbo.get_total_reservation_cost(r.reservation_id) -
dbo.get_total_payment(r.reservation_id)) AS outstanding_balance,
    CASE
        WHEN DATEDIFF(day, GETDATE(), t.departure_date) <= 7
            AND SUM(dbo.get_total_reservation_cost(r.reservation_id) -
dbo.get_total_payment(r.reservation_id)) > 0
        THEN 'Problemy płatności'
        WHEN DATEDIFF(day, GETDATE(), t.departure_date) <= 7
            AND SUM(r.reserved_seats) - (SELECT
COUNT(p.participant_id)
                                         FROM Participants p
                                         JOIN Reservations r2 ON
p.reservation_id = r2.reservation_id
                                         WHERE r2.trip_id = t.trip_id
AND r2.status <> 'cancelled') > 0
        THEN 'Brak uczestników'
```

```
        WHEN DATEDIFF(day, GETDATE(), t.departure_date) <= 7
        THEN 'Gotowa'
        ELSE 'W przygotowaniu'
    END AS readiness_status
FROM Trips t
LEFT JOIN Reservations r ON t.trip_id = r.trip_id AND r.status <>
'cancelled'
WHERE t.departure_date >= GETDATE()
    AND t.departure_date <= DATEADD(day, 60, GETDATE())
GROUP BY t.trip_id, t.trip_name, t.departure_date, t.seat_limit;
```

Procedury/funkcje

Funkcje

- `get_free_addition_seats` - Zwraca liczbę wolnych miejsc na daną dodatkową atrakcję.

```
CREATE FUNCTION get_free_addition_seats (@addition_id INT)
RETURNS INT
AS
BEGIN
    DECLARE @seat_limit INT;
    DECLARE @reserved_seats INT;
    SELECT @seat_limit = seat_limit FROM Additions WHERE addition_id =
@addition_id;
    SELECT @reserved_seats = ISNULL(SUM(ar.reserved_seats), 0)
    FROM Addition_reservations ar
    JOIN Reservations r ON ar.reservation_id = r.reservation_id
    WHERE ar.addition_id = @addition_id AND r.status <> 'cancelled';
    RETURN @seat_limit - @reserved_seats;
END;
```

- `get_free_trip_seats` - Zwraca liczbę wolnych miejsc na daną wycieczkę.

```
CREATE FUNCTION get_free_trip_seats (@trip_id INT)
RETURNS INT
AS
BEGIN
    DECLARE @seat_limit INT;
    DECLARE @reserved_seats INT;
    SELECT @seat_limit = seat_limit FROM Trips WHERE trip_id =
@trip_id;
    SELECT @reserved_seats = ISNULL(SUM(reserved_seats), 0)
    FROM Reservations
    WHERE trip_id = @trip_id AND status <> 'cancelled';
    RETURN @seat_limit - @reserved_seats;
END;
```

- `get_total_payment` - Zwraca sumę wpłat dla danej rezerwacji.

```
CREATE FUNCTION get_total_payment (@reservation_id INT)
RETURNS DECIMAL(10,2)
AS
BEGIN
    DECLARE @total DECIMAL(10,2);
    SELECT @total = ISNULL(SUM(amount), 0)
    FROM Payments
    WHERE reservation_id = @reservation_id;
    RETURN @total;
END;
```

- `get_total_reservation_cost` - Oblicza całkowity koszt rezerwacji (wycieczka + dodatki).

```
CREATE FUNCTION get_total_reservation_cost (@reservation_id INT)
RETURNS DECIMAL(10,2)
AS
BEGIN
    DECLARE @base_price DECIMAL(10,2);
    DECLARE @reserved_seats INT;
    DECLARE @unit_price DECIMAL(10,2);
    DECLARE @additions_price DECIMAL(10,2);

    SELECT @unit_price = price, @reserved_seats = reserved_seats
    FROM Reservations
    WHERE reservation_id = @reservation_id;

    SELECT @additions_price = ISNULL(SUM(price * reserved_seats), 0)
    FROM Addition_reservations
    WHERE reservation_id = @reservation_id;

    RETURN ISNULL(@unit_price * @reserved_seats, 0) +
@additions_price;
END;
```

- `get_client_reservations` - Zwraca tabelę ze wszystkimi rezerwacjami danego klienta.

```
CREATE FUNCTION get_client_reservations (@client_id INT)
RETURNS TABLE
AS
RETURN
(
    SELECT
        R.reservation_id,
        T.trip_name,
        T.departure_date,
        R.reserved_seats,
```

```
        R.price AS reservation_price,
        R.status AS reservation_status,
        R.reservation_date
    FROM Reservations R
    JOIN Trips T ON R.trip_id = T.trip_id
    WHERE R.client_id = @client_id
);
```

- `get_client_participants` - Zwraca tabelę ze wszystkimi uczestnikami powiązanymi z rezerwacjami danego klienta.

```
CREATE FUNCTION get_client_participants (@client_id INT)
RETURNS TABLE
AS
RETURN
(
    SELECT
        P.first_name AS participant_first_name,
        P.last_name AS participant_last_name,
        T.trip_name,
        R.reservation_id
    FROM Participants P
    JOIN Reservations R ON P.reservation_id = R.reservation_id
    JOIN Trips T ON R.trip_id = T.trip_id
    WHERE R.client_id = @client_id
);
```

- `get_client_payments` - Zwraca tabelę ze wszystkimi płatnościami dokonanymi przez danego klienta.

```
CREATE FUNCTION get_client_payments (@client_id INT)
RETURNS TABLE
AS
RETURN
(
    SELECT
        P.payment_id,
        R.reservation_id,
        P.payment_date,
        P.amount,
        P.payment_method,
        T.trip_name
    FROM Payments P
    JOIN Reservations R ON P.reservation_id = R.reservation_id
    JOIN Trips T ON R.trip_id = T.trip_id
    WHERE R.client_id = @client_id
);
```

- `get_available_trips` - Zwraca tabelę wszystkich wycieczek, które mają obecnie dostępne miejsca.

```
CREATE FUNCTION get_available_trips ()
RETURNS TABLE
AS
RETURN
(
    SELECT
        T.trip_id,
        T.trip_name,
        T.departure_date,
        T.price,
        dbo.get_free_trip_seats(T.trip_id) AS remaining_seats
    FROM Trips T
    WHERE dbo.get_free_trip_seats(T.trip_id) > 0
);
```

- `get_trip_additions` - Zwraca tabelę dostępnych dodatków dla konkretnej wycieczki.

```
CREATE FUNCTION get_trip_additions (@trip_id INT)
RETURNS TABLE
AS
RETURN
(
    SELECT
        A.addition_id,
        A.addition_name,
        A.price,
        dbo.get_free_addition_seats(A.addition_id) AS remaining_seats
    FROM Additions A
    WHERE A.trip_id = @trip_id AND
dbo.get_free_addition_seats(A.addition_id) > 0
);
```

Procedury

- `add_addition_participant` - Dodaje uczestnika do zarezerwowanej dodatkowej atrakcji.

```
CREATE PROCEDURE add_addition_participant
    @addition_reservation_id INT,
    @participant_id INT
AS
BEGIN
    SET NOCOUNT ON;
    IF NOT EXISTS (SELECT 1 FROM Addition_reservations WHERE
addition_reservation_id = @addition_reservation_id)
    BEGIN
```

```
        RAISERROR('Addition reservation not found.', 16, 1);
        RETURN;
    END
    DECLARE @current_participants INT;
    SELECT @current_participants = COUNT(*)
    FROM Addition_participants
    WHERE addition_reservation_id = @addition_reservation_id;

    DECLARE @reserved_seats INT;
    SELECT @reserved_seats = reserved_seats
    FROM Addition_reservations
    WHERE addition_reservation_id = @addition_reservation_id;
    IF @current_participants >= @reserved_seats
    BEGIN
        RAISERROR('Cannot add more participants than reserved seats
for this addition.', 16, 1);
        RETURN;
    END
    IF NOT EXISTS (SELECT 1 FROM Participants WHERE participant_id =
@participant_id)
    BEGIN
        RAISERROR('Participant not found.', 16, 1);
        RETURN;
    END
    DECLARE @reservation_id_addition INT;
    DECLARE @reservation_id_participant INT;

    SELECT @reservation_id_addition = reservation_id FROM
Addition_reservations WHERE addition_reservation_id =
@addition_reservation_id;
    SELECT @reservation_id_participant = reservation_id FROM
Participants WHERE participant_id = @participant_id;

    IF @reservation_id_addition IS NULL OR @reservation_id_participant
IS NULL OR @reservation_id_addition <> @reservation_id_participant
    BEGIN
        RAISERROR('Participant must belong to the reservation
associated with the addition.', 16, 1);
        RETURN;
    END
    SET NOCOUNT ON;
    INSERT INTO Addition_participants (addition_reservation_id,
participant_id)
    VALUES (@addition_reservation_id, @participant_id);
END;
```

- `add_client` - Dodaje nowego klienta do systemu.

```
CREATE PROCEDURE add_client
    @client_type VARCHAR(20),
    @first_name VARCHAR(50) = NULL,
    @last_name VARCHAR(50) = NULL,
```

```
    @company_name VARCHAR(100) = NULL,
    @email VARCHAR(100),
    @phone VARCHAR(20),
    @address VARCHAR(200),
    @client_id INT OUTPUT
AS
BEGIN
    SET NOCOUNT ON;
    IF @client_type NOT IN ('individual', 'company')
    BEGIN
        RAISERROR('Invalid client type.', 16, 1);
        RETURN;
    END
    IF @email IS NULL OR @phone IS NULL OR @address IS NULL
    BEGIN
        RAISERROR('Email, phone, and address are required.', 16, 1);
        RETURN;
    END

    IF @client_type = 'individual' AND (@first_name IS NULL OR
@last_name IS NULL)
    BEGIN
        RAISERROR('First name and last name are required for
individual clients.', 16, 1);
        RETURN;
    END

    IF @client_type = 'company' AND @company_name IS NULL
    BEGIN
        RAISERROR('Company name is required for company clients.', 16,
1);
        RETURN;
    END
    SET NOCOUNT ON;
    INSERT INTO Clients (
        client_type,
        first_name,
        last_name,
        company_name,
        email,
        phone,
        address
    )
    VALUES (
        @client_type,
        @first_name,
        @last_name,
        @company_name,
        @email,
        @phone,
        @address
    );
    SET @client_id = SCOPE_IDENTITY();
END;
```

- `add_participant` - Dodaje uczestnika do rezerwacji.

```
CREATE PROCEDURE add_participant
    @reservation_id INT,
    @first_name VARCHAR(50),
    @last_name VARCHAR(50),
    @participant_id INT OUTPUT
AS
BEGIN
    SET NOCOUNT ON;
    IF NOT EXISTS (SELECT 1 FROM Reservations WHERE reservation_id =
@reservation_id)
    BEGIN
        RAISERROR('Reservation not found.', 16, 1);
        RETURN;
    END
    DECLARE @current_participants INT;
    SELECT @current_participants = COUNT(*)
    FROM Participants
    WHERE reservation_id = @reservation_id;

    DECLARE @reserved_seats INT;
    SELECT @reserved_seats = reserved_seats
    FROM Reservations
    WHERE reservation_id = @reservation_id;

    IF @current_participants >= @reserved_seats
    BEGIN
        RAISERROR('Cannot add more participants than reserved seats.',
16, 1);
        RETURN;
    END
    IF @first_name IS NULL OR @last_name IS NULL
    BEGIN
        RAISERROR('First name and last name are required.', 16, 1);
        RETURN;
    END
    SET NOCOUNT ON;
    INSERT INTO Participants (
        reservation_id,
        first_name,
        last_name
    )
    VALUES (
        @reservation_id,
        @first_name,
        @last_name
    );
    SET @participant_id = SCOPE_IDENTITY();
END;
```

- `add_payment` - Rejestruje płatność za rezerwację.

```
CREATE PROCEDURE add_payment
    @reservation_id INT,
    @amount DECIMAL(10,2),
    @payment_method VARCHAR(50),
    @payment_date DATE = NULL
AS
BEGIN
    SET NOCOUNT ON;
    IF NOT EXISTS (SELECT 1 FROM Reservations WHERE reservation_id =
@reservation_id)
    BEGIN
        RAISERROR('Reservation not found.', 16, 1);
        RETURN;
    END
    IF @amount <= 0
    BEGIN
        RAISERROR('Payment amount must be greater than zero.', 16, 1);
        RETURN;
    END
    IF @payment_method IS NULL OR LEN(@payment_method) = 0
    BEGIN
        RAISERROR('Payment method is required.', 16, 1);
        RETURN;
    END
    SET NOCOUNT ON;
    IF @payment_date IS NULL
        SET @payment_date = CAST(GETDATE() AS DATE);
    INSERT INTO Payments (
        reservation_id,
        payment_date,
        amount,
        payment_method
    )
    VALUES (
        @reservation_id,
        @payment_date,
        @amount,
        @payment_method
    );
END;
```

- `cancel_incomplete_reservations` - Anuluje rezerwacje, które nie mają przypisanych wszystkich uczestników po określonym czasie.(procedura uruchamiana przez SQL server Agent)

```
CREATE PROCEDURE cancel_incomplete_reservations
AS
BEGIN
```

```
    SET NOCOUNT ON;

    DECLARE @reservation_id_cursor INT;
    DECLARE @trip_departure_date DATE;
    DECLARE @reserved_trip_seats INT;
    DECLARE @current_trip_participants INT;

    DECLARE @addition_reservation_id_cursor INT;
    DECLARE @reserved_addition_seats INT;
    DECLARE @current_addition_participants INT;
    DECLARE @cancel_main_reservation BIT;

    DECLARE reservation_cursor CURSOR FOR
    SELECT r.reservation_id, t.departure_date, r.reserved_seats
    FROM Reservations r
    JOIN Trips t ON r.trip_id = t.trip_id
    WHERE r.status = 'pending' AND t.departure_date <= DATEADD(day, 7,
GETDATE());

    OPEN reservation_cursor;
    FETCH NEXT FROM reservation_cursor INTO @reservation_id_cursor,
@trip_departure_date, @reserved_trip_seats;

    WHILE @@FETCH_STATUS = 0
    BEGIN
        SET @cancel_main_reservation = 0;

        SELECT @current_trip_participants = COUNT(*)
        FROM Participants
        WHERE reservation_id = @reservation_id_cursor;

        IF @current_trip_participants < @reserved_trip_seats
        BEGIN
            SET @cancel_main_reservation = 1;
        END
        ELSE
        BEGIN

            DECLARE addition_cursor CURSOR FOR
            SELECT ar.addition_reservation_id, ar.reserved_seats
            FROM Addition_reservations ar
            WHERE ar.reservation_id = @reservation_id_cursor;

            OPEN addition_cursor;
            FETCH NEXT FROM addition_cursor INTO
@addition_reservation_id_cursor, @reserved_addition_seats;

            WHILE @@FETCH_STATUS = 0 AND @cancel_main_reservation = 0
            BEGIN
                SELECT @current_addition_participants = COUNT(*)
                FROM Addition_participants
                WHERE addition_reservation_id =
@addition_reservation_id_cursor;
```

```
                IF @current_addition_participants <
@reserved_addition_seats
                BEGIN
                    SET @cancel_main_reservation = 1;
                END

                FETCH NEXT FROM addition_cursor INTO
@addition_reservation_id_cursor, @reserved_addition_seats;
            END

            CLOSE addition_cursor;
            DEALLOCATE addition_cursor;
        END

        IF @cancel_main_reservation = 1
        BEGIN
            UPDATE Reservations
            SET status = 'cancelled'
            WHERE reservation_id = @reservation_id_cursor;
        END

        FETCH NEXT FROM reservation_cursor INTO
@reservation_id_cursor, @trip_departure_date, @reserved_trip_seats;
    END

    CLOSE reservation_cursor;
    DEALLOCATE reservation_cursor;
END;
```

- `cancel_reservation_and_refund` - Anuluje rezerwację i przetwarza zwrot środków.

```
CREATE PROCEDURE cancel_reservation_and_refund
    @reservation_id INT
AS
BEGIN
    SET NOCOUNT ON;

    DECLARE @trip_id INT;
    DECLARE @departure_date DATE;
    DECLARE @current_status VARCHAR(20);
    DECLARE @total_paid DECIMAL(10,2);
    DECLARE @current_date DATE = GETDATE();

    SELECT
        @trip_id = R.trip_id,
        @departure_date = T.departure_date,
        @current_status = R.status
    FROM
        dbo.Reservations R
    INNER JOIN
        dbo.Trips T ON R.trip_id = T.trip_id
    WHERE
```

```
        R.reservation_id = @reservation_id;

    IF @trip_id IS NULL
    BEGIN
        RAISERROR('Reservation with ID %d not found.', 16, 1,
@reservation_id);
        RETURN;
    END
    IF @current_status = 'cancelled'
    BEGIN
        RAISERROR('Reservation with ID %d is already cancelled.', 16,
1, @reservation_id);
        RETURN;
    END
    IF DATEDIFF(day, @current_date, @departure_date) < 7
    BEGIN
        RAISERROR('Cancellation deadline is 7 days before the
departure date.', 16, 1);
        RETURN;
    END

    BEGIN TRY
        BEGIN TRANSACTION;

        UPDATE Reservations
        SET status = 'cancelled'
        WHERE reservation_id = @reservation_id;
        SET @total_paid = dbo.get_total_payment(@reservation_id);
        IF @total_paid > 0
        BEGIN
            INSERT INTO Payments (reservation_id, payment_date,
amount, payment_method)
            VALUES (@reservation_id, @current_date, -@total_paid,
'REFUND');
        END
        COMMIT TRANSACTION;
    END TRY
    BEGIN CATCH
        IF @@TRANCOUNT > 0
            ROLLBACK TRANSACTION;
        THROW;
    END CATCH
END;
```

- `cancel_unpaid_reservations` - Anuluje rezerwacje, które nie zostały opłacone w terminie. (procedura uruchamiana przez SQL server Agent)

```
CREATE PROCEDURE cancel_unpaid_reservations
AS
BEGIN
    SET NOCOUNT ON;
```

```
    DECLARE @reservation_id_cursor INT;
    DECLARE @total_cost DECIMAL(10, 2);
    DECLARE @total_paid DECIMAL(10, 2);
    DECLARE @trip_departure_date DATE;

    DECLARE reservation_cursor CURSOR FOR
    SELECT r.reservation_id, t.departure_date
    FROM Reservations r
    JOIN Trips t ON r.trip_id = t.trip_id
    WHERE r.status = 'pending' AND t.departure_date <= DATEADD(day, 7,
GETDATE());

    OPEN reservation_cursor;
    FETCH NEXT FROM reservation_cursor INTO @reservation_id_cursor,
@trip_departure_date;

    WHILE @@FETCH_STATUS = 0
    BEGIN
        SET @total_cost =
dbo.get_total_reservation_cost(@reservation_id_cursor);
        SET @total_paid =
dbo.get_total_payment(@reservation_id_cursor);
        IF @total_paid < @total_cost
        BEGIN
            UPDATE Reservations
            SET status = 'cancelled'
            WHERE reservation_id = @reservation_id_cursor;
        END

        FETCH NEXT FROM reservation_cursor INTO
@reservation_id_cursor, @trip_departure_date;
    END

    CLOSE reservation_cursor;
    DEALLOCATE reservation_cursor;
END;
```

- `create_addition_reservation` - Tworzy rezerwację na dodatkową atrakcję w ramach istniejącej rezerwacji wycieczki.

```
CREATE PROCEDURE create_addition_reservation
    @reservation_id INT,
    @addition_id INT,
    @reserved_seats INT,
    @addition_reservation_id INT OUTPUT
AS
BEGIN
    SET NOCOUNT ON;
    IF NOT EXISTS (SELECT 1 FROM Reservations WHERE reservation_id =
@reservation_id)
```

```
    BEGIN
        RAISERROR('Reservation not found.', 16, 1);
        RETURN;
    END

    DECLARE @trip_id INT;
    SELECT @trip_id = trip_id FROM Reservations WHERE reservation_id =
@reservation_id;
    IF NOT EXISTS (SELECT 1 FROM Additions WHERE addition_id =
@addition_id AND trip_id = @trip_id)
    BEGIN
        RAISERROR('Addition does not exist for the trip.', 16, 1);
        RETURN;
    END
    IF @reserved_seats <= 0
    BEGIN
        RAISERROR('Reserved seats must be greater than 0.', 16, 1);
        RETURN;
    END
    IF dbo.get_free_addition_seats(@addition_id) < @reserved_seats
    BEGIN
        RAISERROR('Not enough free seats for the addition.', 16, 1);
        RETURN;
    END

    DECLARE @unit_price DECIMAL(10,2);
    SELECT @unit_price = price FROM Additions WHERE addition_id =
@addition_id;

    INSERT INTO Addition_reservations (
        reservation_id,
        addition_id,
        reserved_seats,
        price
    )
    VALUES (
        @reservation_id,
        @addition_id,
        @reserved_seats,
        @unit_price
    );
    SET @addition_reservation_id = SCOPE_IDENTITY();
END;
```

- `create_reservation` - Tworzy nową rezerwację wycieczki dla klienta.

```
CREATE PROCEDURE create_reservation
    @client_id INT,
    @trip_id INT,
    @reserved_seats INT,
    @reservation_id INT OUTPUT
AS
```

```
BEGIN
    SET NOCOUNT ON;
    IF NOT EXISTS (SELECT 1 FROM Clients WHERE client_id = @client_id)
    BEGIN
        RAISERROR('Client not found.', 16, 1);
        RETURN;
    END

    IF NOT EXISTS (SELECT 1 FROM Trips WHERE trip_id = @trip_id)
    BEGIN
        RAISERROR('Trip not found.', 16, 1);
        RETURN;
    END
    IF @reserved_seats <= 0
    BEGIN
        RAISERROR('Reserved seats must be greater than 0.', 16, 1);
        RETURN;
    END

    IF dbo.get_free_trip_seats(@trip_id) < @reserved_seats
    BEGIN
        RAISERROR('Not enough free trip seats.', 16, 1);
        RETURN;
    END
    DECLARE @unit_trip_price DECIMAL(10, 2);
    SELECT @unit_trip_price = price
    FROM Trips
    WHERE trip_id = @trip_id;
    INSERT INTO Reservations (
        client_id,
        trip_id,
        reserved_seats,
        price
    )
    VALUES (
        @client_id,
        @trip_id,
        @reserved_seats,
        @unit_trip_price
    );
    SET @reservation_id = SCOPE_IDENTITY();
END;
```

- `modify_addition_reservation` - Modyfikuje istniejącą rezerwację dodatkowej atrakcji.

```
CREATE PROCEDURE modify_addition_reservation
    @addition_reservation_id INT,
    @new_reserved_seats INT
AS
BEGIN
    SET NOCOUNT ON;
    IF NOT EXISTS (SELECT 1 FROM Addition_reservations WHERE
```

```
addition_reservation_id = @addition_reservation_id)
    BEGIN
        RAISERROR('Addition reservation not found.', 16, 1);
        RETURN;
    END

    DECLARE @addition_id INT, @reservation_id INT, @trip_id INT,
@reservation_status VARCHAR(20);

    SELECT
        @addition_id = ar.addition_id,
        @reservation_id = ar.reservation_id,
        @reservation_status = r.status
    FROM Addition_reservations ar
    JOIN Reservations r ON ar.reservation_id = r.reservation_id
    WHERE ar.addition_reservation_id = @addition_reservation_id;

    IF @reservation_status = 'cancelled'
    BEGIN
        RAISERROR('Cannot modify addition for a cancelled
reservation.', 16, 1);
        RETURN;
    END

    SELECT @trip_id = trip_id
    FROM Reservations
    WHERE reservation_id = @reservation_id;

    DECLARE @departure_date DATE;
    SELECT @departure_date = departure_date FROM Trips WHERE trip_id =
@trip_id;

    IF DATEDIFF(DAY, GETDATE(), @departure_date) < 7
    BEGIN
        RAISERROR('Cannot modify addition reservation within 7 days
before trip.', 16, 1);
        RETURN;
    END

    IF @new_reserved_seats <= 0
    BEGIN
        RAISERROR('Reserved seats must be greater than 0.', 16, 1);
        RETURN;
    END

    DECLARE @current_reserved_seats INT;
    SELECT @current_reserved_seats = reserved_seats
    FROM Addition_reservations
    WHERE addition_reservation_id = @addition_reservation_id;

    DECLARE @assigned_participants INT;
    SELECT @assigned_participants = COUNT(*)
    FROM Addition_participants
    WHERE addition_reservation_id = @addition_reservation_id;
```

```
    IF @new_reserved_seats < @assigned_participants
    BEGIN
        RAISERROR('Cannot reduce addition seats below the number of
assigned participants (%d).', 16, 1, @assigned_participants);
        RETURN;
    END

    DECLARE @available_seats INT;
    SET @available_seats = dbo.get_free_addition_seats(@addition_id) +
@current_reserved_seats;

    IF @available_seats < @new_reserved_seats
    BEGIN
        RAISERROR('Not enough available seats for the addition.', 16,
1);
        RETURN;
    END

    UPDATE Addition_reservations
    SET reserved_seats = @new_reserved_seats
    WHERE addition_reservation_id = @addition_reservation_id;

END;
```

- `modify_reservation` - Modyfikuje istniejącą rezerwację wycieczki.

```
CREATE PROCEDURE modify_reservation
    @reservation_id INT,
    @new_reserved_seats INT
AS
BEGIN
    SET NOCOUNT ON;
    IF NOT EXISTS (SELECT 1 FROM Reservations WHERE reservation_id =
@reservation_id)
    BEGIN
        RAISERROR('Reservation not found.', 16, 1);
        RETURN;
    END

    DECLARE @trip_id INT;
    DECLARE @departure_date DATE;
    DECLARE @reservation_status VARCHAR(20);

    SELECT
        @trip_id = r.trip_id,
        @departure_date = t.departure_date,
        @reservation_status = r.status
    FROM Reservations r
    JOIN Trips t ON r.trip_id = t.trip_id
    WHERE r.reservation_id = @reservation_id;
```

```
    IF @reservation_status = 'cancelled'
    BEGIN
        RAISERROR('Cannot modify a cancelled reservation.', 16, 1);
        RETURN;
    END

    IF DATEDIFF(DAY, GETDATE(), @departure_date) < 7
    BEGIN
        RAISERROR('Cannot modify reservation within 7 days before
trip.', 16, 1);
        RETURN;
    END

    IF @new_reserved_seats <= 0
    BEGIN
        RAISERROR('Reserved seats must be greater than 0.', 16, 1);
        RETURN;
    END

    DECLARE @current_reserved_seats INT;
    SELECT @current_reserved_seats = reserved_seats
    FROM Reservations
    WHERE reservation_id = @reservation_id;

    DECLARE @assigned_participants INT;
    SELECT @assigned_participants = COUNT(*)
    FROM Participants
    WHERE reservation_id = @reservation_id;

    IF @new_reserved_seats < @assigned_participants
    BEGIN
        RAISERROR('Cannot reduce seats below the number of assigned
participants (%d).', 16, 1, @assigned_participants);
        RETURN;
    END

    DECLARE @available_seats INT;
    SET @available_seats = dbo.get_free_trip_seats(@trip_id) +
@current_reserved_seats;

    IF @available_seats < @new_reserved_seats
    BEGIN
        RAISERROR('Not enough available seats for this change.', 16,
1);
        RETURN;
    END

    UPDATE Reservations
    SET reserved_seats = @new_reserved_seats
    WHERE reservation_id = @reservation_id;
END;
```

Triggery

4. Inne

Dane do testowania Widoków, Funkcji, Procedur i Triggerów

```
-- Add Trips
INSERT INTO Trips (trip_name, departure_date, price, seat_limit) VALUES
('Summer Adventure in the Mountains', '2025-07-15', 500.00, 30),
('Coastal Escape Weekend', '2025-08-01', 350.00, 20),
('Historical City Tour', '2025-09-10', 400.00, 25),
('Skiing Holiday in Alps', '2026-01-20', 1200.00, 15),
('Desert Safari Experience', '2025-11-05', 750.00, 18);

-- Add Clients using procedure
DECLARE @client_id_1 INT;
DECLARE @client_id_2 INT;
DECLARE @client_id_3 INT;
DECLARE @client_id_4 INT;
DECLARE @client_id_5 INT;

EXEC add_client
    @client_type = 'individual',
    @first_name = 'John',
    @last_name = 'Doe',
    @email = 'john.doe@example.com',
    @phone = '123-456-7890',
    @address = '123 Main St, Anytown',
    @client_id = @client_id_1 OUTPUT;

EXEC add_client
    @client_type = 'company',
    @company_name = 'Tech Solutions Inc.',
    @email = 'contact@techsolutions.com',
    @phone = '987-654-3210',
    @address = '456 Business Rd, Corp City',
    @client_id = @client_id_2 OUTPUT;

EXEC add_client
    @client_type = 'individual',
    @first_name = 'Alice',
    @last_name = 'Smith',
    @email = 'alice.smith@example.com',
    @phone = '555-123-4567',
    @address = '789 Oak Ave, Villagetown',
    @client_id = @client_id_3 OUTPUT;

EXEC add_client
    @client_type = 'individual',
    @first_name = 'Robert',
```

```
    @last_name = 'Jones',
    @email = 'robert.jones@example.com',
    @phone = '555-987-6543',
    @address = '101 Pine Ln, Hamletville',
    @client_id = @client_id_4 OUTPUT;

EXEC add_client
    @client_type = 'company',
    @company_name = 'Global Goods Ltd.',
    @email = 'info@globalgoods.com',
    @phone = '111-222-3333',
    @address = '202 Commerce St, Tradeburg',
    @client_id = @client_id_5 OUTPUT;


-- Add Reservations using procedure
DECLARE @reservation_id_1 INT;
DECLARE @reservation_id_2 INT;
DECLARE @reservation_id_3 INT;
DECLARE @reservation_id_4 INT;
DECLARE @reservation_id_5 INT;

EXEC create_reservation
    @client_id = @client_id_1,
    @trip_id = 1, -- Summer Adventure in the Mountains
    @reserved_seats = 2,
    @reservation_id = @reservation_id_1 OUTPUT;

EXEC create_reservation
    @client_id = @client_id_2,
    @trip_id = 2, -- Coastal Escape Weekend
    @reserved_seats = 5,
    @reservation_id = @reservation_id_2 OUTPUT;

EXEC create_reservation
    @client_id = @client_id_3,
    @trip_id = 1, -- Summer Adventure in the Mountains
    @reserved_seats = 1,
    @reservation_id = @reservation_id_3 OUTPUT;

EXEC create_reservation
    @client_id = @client_id_4,
    @trip_id = 3, -- Historical City Tour
    @reserved_seats = 3,
    @reservation_id = @reservation_id_4 OUTPUT;

EXEC create_reservation
    @client_id = @client_id_5,
    @trip_id = 5, -- Desert Safari Experience
    @reserved_seats = 10,
    @reservation_id = @reservation_id_5 OUTPUT;
-- Add Participants using procedure
DECLARE @participant_id_1 INT, @participant_id_2 INT, @participant_id_3
INT, @participant_id_4 INT, @participant_id_5 INT;
```

```
DECLARE @participant_id_6 INT, @participant_id_7 INT, @participant_id_8
INT, @participant_id_9 INT, @participant_id_10 INT;
DECLARE @participant_id_11 INT, @participant_id_12 INT, @participant_id_13
INT, @participant_id_14 INT, @participant_id_15 INT;
DECLARE @participant_id_16 INT, @participant_id_17 INT, @participant_id_18
INT, @participant_id_19 INT, @participant_id_20 INT;
DECLARE @participant_id_21 INT;


-- Reservation 1 (2 seats)
EXEC add_participant @reservation_id = @reservation_id_1, @first_name =
'Michael', @last_name = 'Brown', @participant_id = @participant_id_1
OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_1, @first_name =
'Emily', @last_name = 'Davis', @participant_id = @participant_id_2 OUTPUT;

-- Reservation 2 (5 seats)
EXEC add_participant @reservation_id = @reservation_id_2, @first_name =
'David', @last_name = 'Wilson', @participant_id = @participant_id_3
OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_2, @first_name =
'Sarah', @last_name = 'Miller', @participant_id = @participant_id_4
OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_2, @first_name =
'James', @last_name = 'Garcia', @participant_id = @participant_id_5
OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_2, @first_name =
'Linda', @last_name = 'Rodriguez', @participant_id = @participant_id_6
OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_2, @first_name =
'Christopher', @last_name = 'Martinez', @participant_id =
@participant_id_7 OUTPUT;

-- Reservation 3 (1 seat)
EXEC add_participant @reservation_id = @reservation_id_3, @first_name =
'Jessica', @last_name = 'Lee', @participant_id = @participant_id_8 OUTPUT;

-- Reservation 4 (3 seats)
EXEC add_participant @reservation_id = @reservation_id_4, @first_name =
'Daniel', @last_name = 'Harris', @participant_id = @participant_id_9
OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_4, @first_name =
'Ashley', @last_name = 'Clark', @participant_id = @participant_id_10
OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_4, @first_name =
'Kevin', @last_name = 'Lewis', @participant_id = @participant_id_11
OUTPUT;

-- Reservation 5 (10 seats)
EXEC add_participant @reservation_id = @reservation_id_5, @first_name =
'Laura', @last_name = 'Walker', @participant_id = @participant_id_12
OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_5, @first_name =
'Brian', @last_name = 'Hall', @participant_id = @participant_id_13 OUTPUT;
```

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EXEC add_participant @reservation_id = @reservation_id_5, @first_name =
'Nancy', @last_name = 'Allen', @participant_id = @participant_id_14
OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_5, @first_name =
'Paul', @last_name = 'Young', @participant_id = @participant_id_15 OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_5, @first_name =
'Karen', @last_name = 'King', @participant_id = @participant_id_16 OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_5, @first_name =
'Mark', @last_name = 'Wright', @participant_id = @participant_id_17
OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_5, @first_name =
'Betty', @last_name = 'Scott', @participant_id = @participant_id_18
OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_5, @first_name =
'Steven', @last_name = 'Green', @participant_id = @participant_id_19
OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_5, @first_name =
'Donna', @last_name = 'Adams', @participant_id = @participant_id_20
OUTPUT;
EXEC add_participant @reservation_id = @reservation_id_5, @first_name =
'George', @last_name = 'Baker', @participant_id = @participant_id_21
OUTPUT;

-- Add Additions
INSERT INTO Additions (trip_id, addition_name, price, seat_limit) VALUES
(1, 'Mountain Bike Rental', 50.00, 10), -- For Summer Adventure
(1, 'Guided Hiking Tour', 30.00, 15),    -- For Summer Adventure
(2, 'Surfboard Rental', 40.00, 8),       -- For Coastal Escape
(2, 'Beach Yoga Session', 25.00, 10),    -- For Coastal Escape
(3, 'Museum Pass', 20.00, 20),           -- For Historical City Tour
(3, 'Private Guide', 100.00, 5),         -- For Historical City Tour
(4, 'Ski Equipment Rental', 80.00, 10),  -- For Skiing Holiday
(4, 'Snowboarding Lessons', 120.00, 5),  -- For Skiing Holiday
(5, 'Camel Ride', 60.00, 12),            -- For Desert Safari
(5, 'Dune Bashing', 90.00, 10);           -- For Desert Safari


-- Add Addition Reservations using procedure
DECLARE @add_res_id_1 INT, @add_res_id_2 INT, @add_res_id_3 INT,
@add_res_id_4 INT, @add_res_id_5 INT;
DECLARE @add_res_id_6 INT, @add_res_id_7 INT;

-- Reservation 1 (Summer Adventure, 2 people)
-- Michael and Emily rent mountain bikes
EXEC create_addition_reservation @reservation_id = @reservation_id_1,
@addition_id = 1, @reserved_seats = 2, @addition_reservation_id =
@add_res_id_1 OUTPUT;
-- Michael also goes on a guided hiking tour
EXEC create_addition_reservation @reservation_id = @reservation_id_1,
@addition_id = 2, @reserved_seats = 1, @addition_reservation_id =
@add_res_id_2 OUTPUT;

-- Reservation 2 (Coastal Escape, 5 people)
-- 3 people rent surfboards
```

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EXEC create_addition_reservation @reservation_id = @reservation_id_2,
@addition_id = 3, @reserved_seats = 3, @addition_reservation_id =
@add_res_id_3 OUTPUT;
-- 2 people do beach yoga
EXEC create_addition_reservation @reservation_id = @reservation_id_2,
@addition_id = 4, @reserved_seats = 2, @addition_reservation_id =
@add_res_id_4 OUTPUT;

-- Reservation 4 (Historical City Tour, 3 people)
-- All 3 get museum passes
EXEC create_addition_reservation @reservation_id = @reservation_id_4,
@addition_id = 5, @reserved_seats = 3, @addition_reservation_id =
@add_res_id_5 OUTPUT;

-- Reservation 5 (Desert Safari, 10 people)
-- 5 people go for a camel ride
EXEC create_addition_reservation @reservation_id = @reservation_id_5,
@addition_id = 9, @reserved_seats = 5, @addition_reservation_id =
@add_res_id_6 OUTPUT;
-- All 10 go dune bashing
EXEC create_addition_reservation @reservation_id = @reservation_id_5,
@addition_id = 10, @reserved_seats = 10, @addition_reservation_id =
@add_res_id_7 OUTPUT;

-- Add Addition Participants using procedure

-- For @add_res_id_1 (Mountain Bike Rental for Reservation 1, 2 seats)
EXEC add_addition_participant @addition_reservation_id = @add_res_id_1,
@participant_id = @participant_id_1; -- Michael
EXEC add_addition_participant @addition_reservation_id = @add_res_id_1,
@participant_id = @participant_id_2; -- Emily

-- For @add_res_id_2 (Guided Hiking Tour for Reservation 1, 1 seat)
EXEC add_addition_participant @addition_reservation_id = @add_res_id_2,
@participant_id = @participant_id_1; -- Michael

-- For @add_res_id_3 (Surfboard Rental for Reservation 2, 3 seats)
EXEC add_addition_participant @addition_reservation_id = @add_res_id_3,
@participant_id = @participant_id_3; -- David
EXEC add_addition_participant @addition_reservation_id = @add_res_id_3,
@participant_id = @participant_id_4; -- Sarah
EXEC add_addition_participant @addition_reservation_id = @add_res_id_3,
@participant_id = @participant_id_5; -- James

-- For @add_res_id_4 (Beach Yoga Session for Reservation 2, 2 seats)
EXEC add_addition_participant @addition_reservation_id = @add_res_id_4,
@participant_id = @participant_id_6; -- Linda
EXEC add_addition_participant @addition_reservation_id = @add_res_id_4,
@participant_id = @participant_id_7; -- Christopher

-- For @add_res_id_5 (Museum Pass for Reservation 4, 3 seats)
EXEC add_addition_participant @addition_reservation_id = @add_res_id_5,
@participant_id = @participant_id_9;  -- Daniel
EXEC add_addition_participant @addition_reservation_id = @add_res_id_5,
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@participant_id = @participant_id_10; -- Ashley
EXEC add_addition_participant @addition_reservation_id = @add_res_id_5,
@participant_id = @participant_id_11; -- Kevin

-- For @add_res_id_6 (Camel Ride for Reservation 5, 5 seats)
EXEC add_addition_participant @addition_reservation_id = @add_res_id_6,
@participant_id = @participant_id_12; -- Laura
EXEC add_addition_participant @addition_reservation_id = @add_res_id_6,
@participant_id = @participant_id_13; -- Brian
EXEC add_addition_participant @addition_reservation_id = @add_res_id_6,
@participant_id = @participant_id_14; -- Nancy
EXEC add_addition_participant @addition_reservation_id = @add_res_id_6,
@participant_id = @participant_id_15; -- Paul
EXEC add_addition_participant @addition_reservation_id = @add_res_id_6,
@participant_id = @participant_id_16; -- Karen

-- For @add_res_id_7 (Dune Bashing for Reservation 5, 10 seats)
EXEC add_addition_participant @addition_reservation_id = @add_res_id_7,
@participant_id = @participant_id_12; -- Laura
EXEC add_addition_participant @addition_reservation_id = @add_res_id_7,
@participant_id = @participant_id_13; -- Brian
EXEC add_addition_participant @addition_reservation_id = @add_res_id_7,
@participant_id = @participant_id_14; -- Nancy
EXEC add_addition_participant @addition_reservation_id = @add_res_id_7,
@participant_id = @participant_id_15; -- Paul
EXEC add_addition_participant @addition_reservation_id = @add_res_id_7,
@participant_id = @participant_id_16; -- Karen
EXEC add_addition_participant @addition_reservation_id = @add_res_id_7,
@participant_id = @participant_id_17; -- Mark
EXEC add_addition_participant @addition_reservation_id = @add_res_id_7,
@participant_id = @participant_id_18; -- Betty
EXEC add_addition_participant @addition_reservation_id = @add_res_id_7,
@participant_id = @participant_id_19; -- Steven
EXEC add_addition_participant @addition_reservation_id = @add_res_id_7,
@participant_id = @participant_id_20; -- Donna
EXEC add_addition_participant @addition_reservation_id = @add_res_id_7,
@participant_id = @participant_id_21; -- George

-- Add Payments using procedure
-- Some reservations will be fully paid, some partially, some not at all.
-- Payments will include costs for additions.

-- Reservation 1: Fully paid (Trip: 2 * 500 = 1000) + (Additions: Bike
2*50=100, Hike 1*30=30) = 1130
EXEC add_payment @reservation_id = @reservation_id_1, @amount = 1130.00,
@payment_method = 'Credit Card', @payment_date = '2025-06-01';

-- Reservation 2: Partially paid (Trip: 5 * 350 = 1750) + (Additions: Surf
3*40=120, Yoga 2*25=50) = 1920. Paid 1000.
EXEC add_payment @reservation_id = @reservation_id_2, @amount = 1000.00,
@payment_method = 'Bank Transfer', @payment_date = '2025-06-02';

-- Reservation 3: No payment yet (Trip: 1 * 500 = 500). No additions.
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-- Reservation 4: Fully paid (Trip: 3 * 400 = 1200) + (Additions: Museum
3*20=60) = 1260
EXEC add_payment @reservation_id = @reservation_id_4, @amount = 1260.00,
@payment_method = 'Credit Card', @payment_date = '2025-06-04';

-- Reservation 5: Partially paid (Trip: 10 * 750 = 7500) + (Additions:
Camel 5*60=300, Dune 10*90=900) = 8700. Paid 5000.
EXEC add_payment @reservation_id = @reservation_id_5, @amount = 5000.00,
@payment_method = 'Company Account', @payment_date = '2025-06-05';
```
