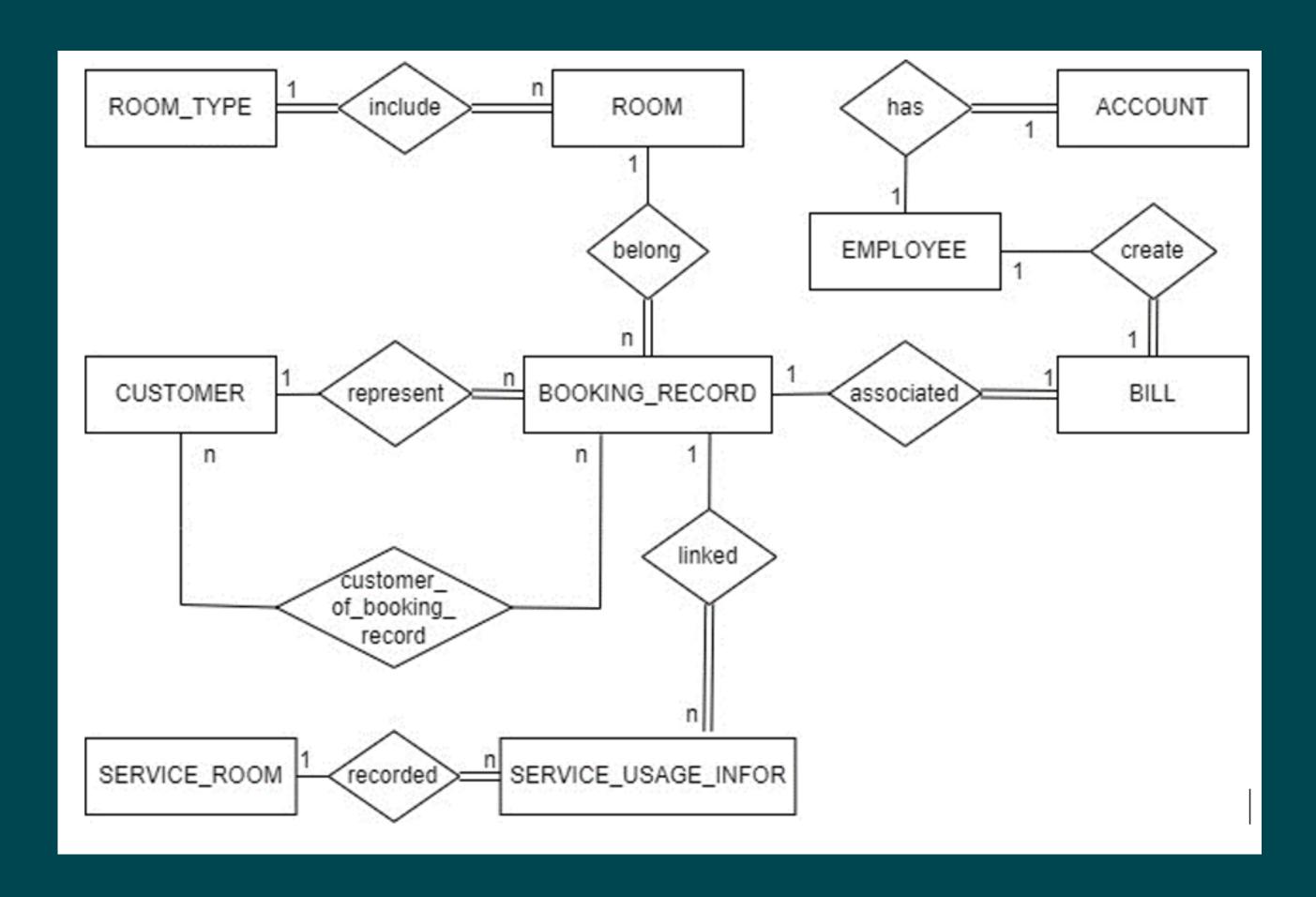
Đồ án cuối kỳ môn học Hệ Quản trị cơ sở dữ liệu

Nhóm 14



Thiết kế cơ sở dữ liệu mức quan niệm



Thiết kế cơ sở dữ liệu mức quan niệm

EMPLOYEE

employee id

employee_name

gender

birthday

identify_card

address

email

{phone_number}

BILL

bill id

cost_incurred

content_incurred

total cost

created_date

payment_method

pay_time

CUSTOMER

customer id

customer_name

gender

birthday

identify_card

address

{phone_number}

email

status

ACCOUNT

account id

username

password

roles

BOOKING_RECORD

booking record id

booking_capacity

booking_estimated_time

check_paid_deposit

deposit

expected_checkin_date

expected_checkout_date

surcharge

note

booking_time

status

actual_checkin_date

actual_checkout_date

ROOM

room id

room_name

room_capacity

room_status

room_description

room_image

room_update

ROOM_TYPE

room type id

room_type_name

price

discount_room

SERVICE_ROOM

service room id

service_room_name

service_room_status

service_room_price

discount service

SERVICE_USAGE_INFOR

service usage infor id

number_of_service

date_used

Thiết kế cơ sở dữ liệu mức logic

1.	CUSTOMER(customer_id, customer_name, gender, birthday, identify_card, address, phone_number, email, status)
2.	ACCOUNT(account_id, username, password, employee_id (FK))
3.	EMPLOYEE(employee_id, employee_name, gender, birthday, identify_card, address, phone_number, mail)
4.	ROOM_TYPE(room_type_id, room_type_name, price, discount_room)
5.	ROOM(room_id, room_name, Room_type_id(FK), room_capacity, room_status, room_description, room_image, room_update)
6.	SERVICE_ROOM(service_room_id, service_room_name, service_room_status, service_room_price, discount_service)
7.	BOOKING_RECORD (booking_record_id, expected_checkin_date, expected_checkout_date, deposit, representative_id (FK), room_id (FK), surcharge, note, booking_time, status, actual_checkin_date, actual_checkout_date)
8.	SERVICE_USAGE_INFOR(service_usage_infor_id, booking_record_id (FK), service_room_id (FK), number_of_service, date_used)
9.	BILL(bill_id, booking_record_id (FK), costs_incurred, content_incurred, total_cost, created_date, payment_method, pay_time, employee_id (FK))
10.	CUSTOMER_OF_BOOKING_RECORD(customer_id (FK), booking_record_id (FK))
11.	PHONE_NUMBER_OF_CUSTOMER(customer_id (FK), phone_number)
12.	PHONE_NUMBER_OF_EMPLOYEE(employee_id (FK), booking_record_id)

Cài đặt cơ sở dữ liệu và các ràng buộc

```
CREATE TABLE CUSTOMER (
  customer_id INT IDENTITY(1, 1) CONSTRAINT PK_CUSTOMER
PRIMARY KEY,
  customer name NVARCHAR(50) NOT NULL,
  gender NVARCHAR(10) CONSTRAINT CK_CUSTOMER_GENDER
CHECK (gender IN (N'Nam', N'Nữ')),
  email VARCHAR(255) CONSTRAINT CK_EMAIL_CUSTOMER CHECK
(email LIKE '%@gmail.com'),
  birthday DATE NOT NULL,
 identify card VARCHAR(25) UNIQUE NOT NULL CONSTRAINT
CK IDENTIFY CARD LENGTH CUSTOMER CHECK (LEN(identify card)
= 12),
 address NVARCHAR(255) NULL,
    status BIT DEFAULT 0 NOT NULL, -- 1: OFFICIAL - KHÁCH HÀNG
ĐÃ ĐẾN CHECKIN; 0: UNOFFICIAL: KHÁCH HÀNG CHỈ MỚI ĐẶT
ONLINE
```

View và thực thi trên C#

Xem danh sách khách hàng

```
CREATE VIEW View_Customer AS

SELECT c.*, p.phone_number

FROM CUSTOMER c JOIN PHONE_NUMBER_OF_CUSTOMER p ON

c.customer_id = p.customer_id;
```

Thực hiện trên C#

```
public DataTable LayDanhSach()
  DataTable dt = new DataTable();
  string sql = "select* from View_Customer";
  SqlConnection conn = DbConnection.conn;
    conn.Open();
    SqlDataAdapter adapter = new SqlDataAdapter(sql, conn);
    adapter.Fill(dt);
  catch (Exception ex)
    MessageBox.Show(ex.Message);
  finally { conn.Close(); }
  return dt;
```

Trigger

```
CREATE OR ALTER TRIGGER
Trg Create Bill When Create Booking Record
ON BOOKING RECORD
AFTER INSERT
AS
BEGIN
     DECLARE @booking record id INT = (SELECT booking record id
 FROM inserted);
 INSERT INTO BILL (booking record id, payment method)
 VALUES (@booking record id, N'Tiền mặt');
END;
```

Chương 3. Thiết kế các chức năng

Kết nối cơ sở dữ liệu

```
namespace QuanLiKhachSan.DAO
  class DbConnection
    public static SqlConnection conn;
    public static SqlConnection connAdmin = new SqlConnection(@"Data
Source=(localdb)\mssqllocaldb;Initial
Catalog=HotelManagementSystem;Integrated Security=True");
```

Chương 3. Thiết kế

các chức

năng

Hàm trả về chuỗi kết nối khi đăng nhập

```
CREATE OR ALTER FUNCTION Login
(@username VARCHAR(50), @password VARCHAR(25))
RETURNS VARCHAR(1000)
AS
BEGIN
  DECLARE @connectString VARCHAR(1000);
  DECLARE @roles VARCHAR(20);
  SELECT @roles = roles
  FROM ACCOUNT
  WHERE username = @username AND password = @password;
  IF @roles IS NOT NULL
  BEGIN
     SET @connectString = 'Data Source=(localdb)\mssqllocaldb;Initial
  Catalog=HotelManagementSystem;User Id='
     + @username + ';Password=' + @password + ';';
  END
  RETURN @connectString;
END
SELECT * FROM ACCOUNT;
```

Chương 3. Thiết kế các chức năng

Thực thi đăng nhập trên C#

```
public bool Login(string username, string password)
  bool isSuccess = false;
  string sql = "SELECT dbo.Login(@username,@password)";
  SqlConnection connAdmin = DbConnection.connAdmin;
  try
     connAdmin.Open();
     SqlCommand cmd = new SqlCommand(sql, connAdmin);
     cmd.Parameters.AddWithValue("username", username);
     cmd.Parameters.AddWithValue("password", password);
     SqlDataAdapter adapter = new SqlDataAdapter(cmd);
     DataTable dataTable = new DataTable();
     adapter.Fill(dataTable);
     if(dataTable.Rows.Count > 0 && dataTable.Rows[0][0] != DBNull.Value)
       isSuccess = true;
       string connStr = dataTable.Rows[0][0].ToString();
       DbConnection.conn = new SqlConnection(connStr);
  catch (Exception ex)
     MessageBox.Show(ex.Message);
  finally { connAdmin.Close(); }
  return isSuccess;
```

Chương 3.

Tạo user

và phân

quyền

Đối với roles là nhân viên

```
CREATE ROLE Staff:
-----Gán các quyền trên các bảng cho role Staff-----
GRANT SELECT, REFERENCES ON ACCOUNT TO Staff
GRANT SELECT, INSERT, DELETE, UPDATE, REFERENCES ON BILL
TO Staff
GRANT SELECT, INSERT, DELETE, UPDATE, REFERENCES ON
BOOKING RECORD TO Staff
GRANT SELECT, INSERT, DELETE, UPDATE, REFERENCES ON
CUSTOMER TO Staff
GRANT SELECT, INSERT, DELETE, UPDATE, REFERENCES ON
CUSTOMER OF BOOKING RECORD TO Staff
GRANT SELECT, INSERT, DELETE, UPDATE, REFERENCES ON
PHONE NUMBER OF CUSTOMER TO Staff
GRANT SELECT, UPDATE, REFERENCES ON ROOM TO Staff
GRANT SELECT, REFERENCES ON ROOM TYPE TO Staff
GRANT SELECT, UPDATE, REFERENCES ON SERVICE ROOM TO Staff
GRANT SELECT, INSERT, DELETE, UPDATE, REFERENCES ON
SERVICE USAGE INFOR TO Staff
-- Gán quyền thực thi trên các procedure, function cho role Staff
GRANT EXECUTE TO Staff;
GRANT SELECT TO Staff:
DENY EXECUTE ON proc add room to Staff;
DENY EXECUTE ON proc add room type to Staff;
DENY EXECUTE ON proc delete room to Staff;
DENY EXECUTE ON proc delete room type to Staff;
DENY EXECUTE ON proc deleteAccount to Staff;
DENY EXECUTE ON proc deleteEmployee to Staff;
DENY EXECUTE ON proc_deleteServiceRoom to Staff;
DENY EXECUTE ON proc insertServiceRoom to Staff;
DENY EXECUTE ON proc update room type to Staff:
```

Chương 5. Thiết kế giao diện hệ thống



Giao diện phòng

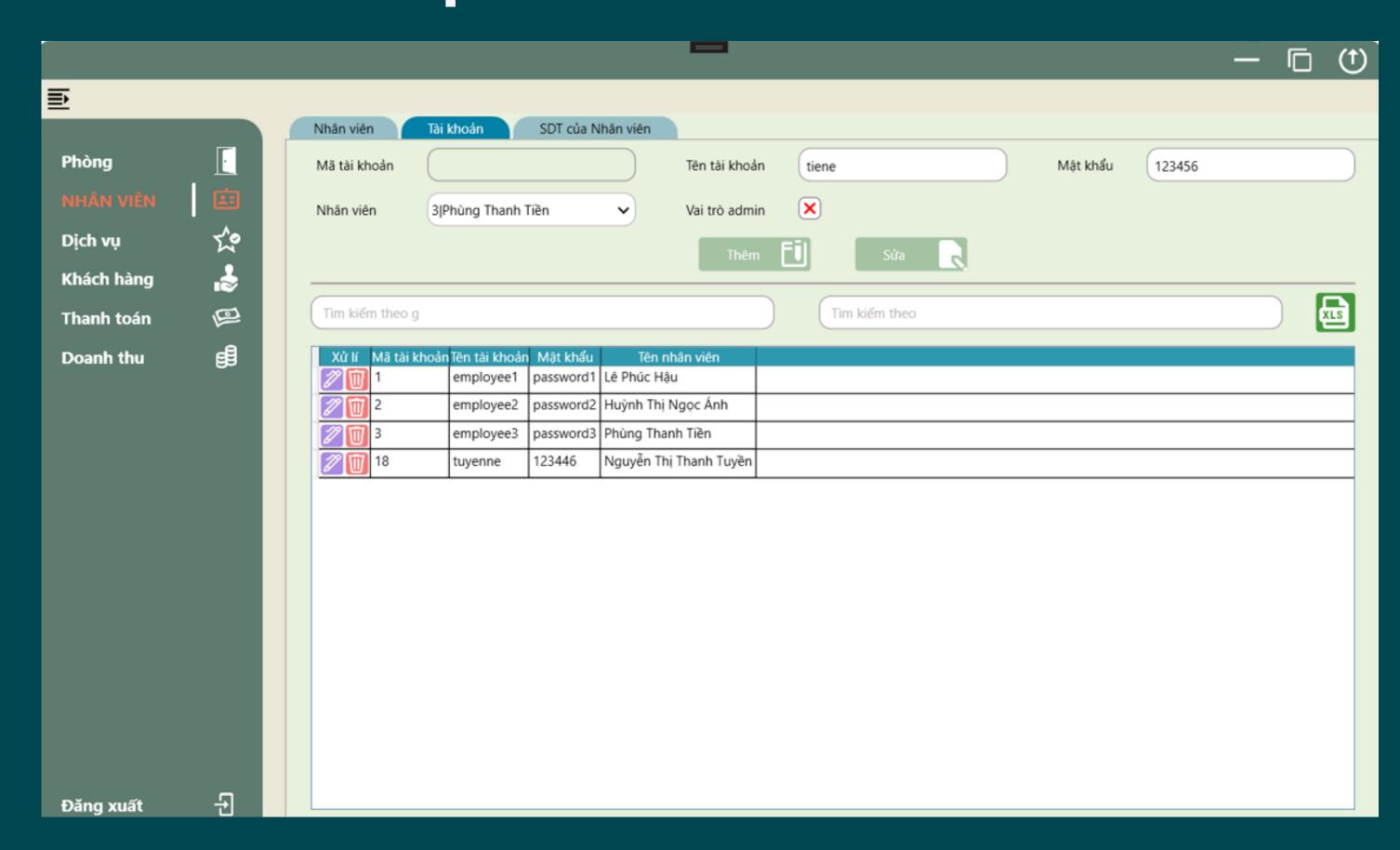
Giao diện nhân viên

Giao diện dịch vụ

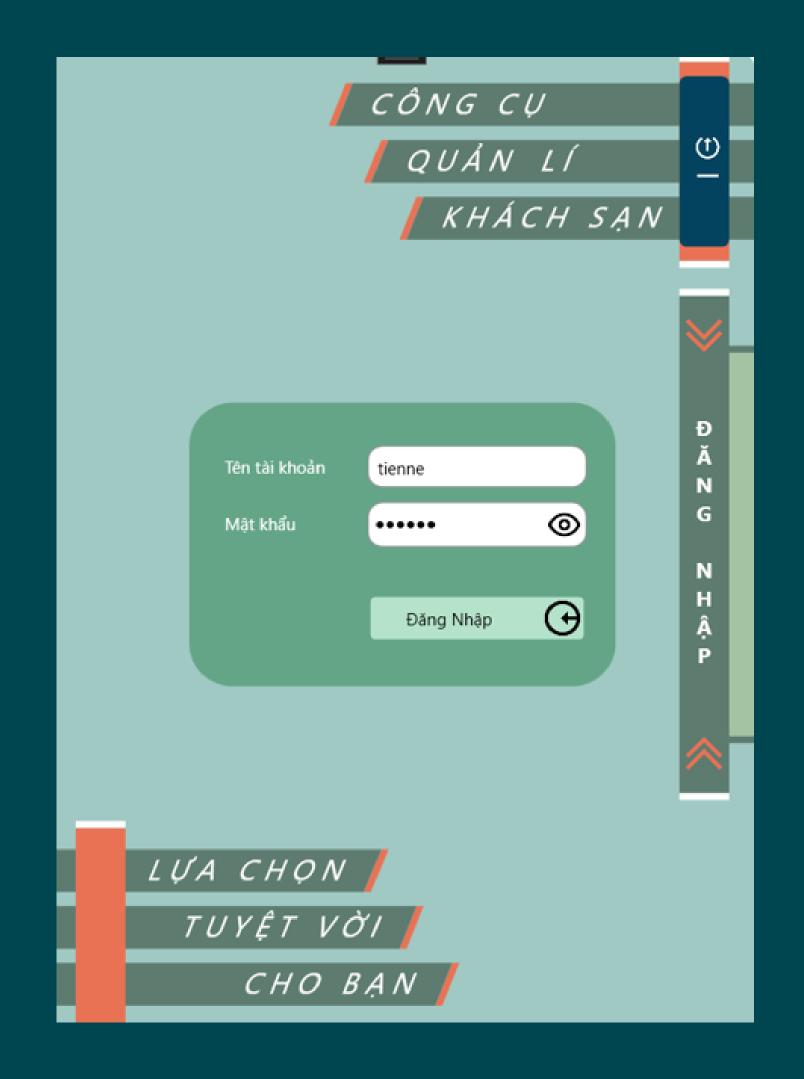
Giao diện thanh toán

Doanh thu

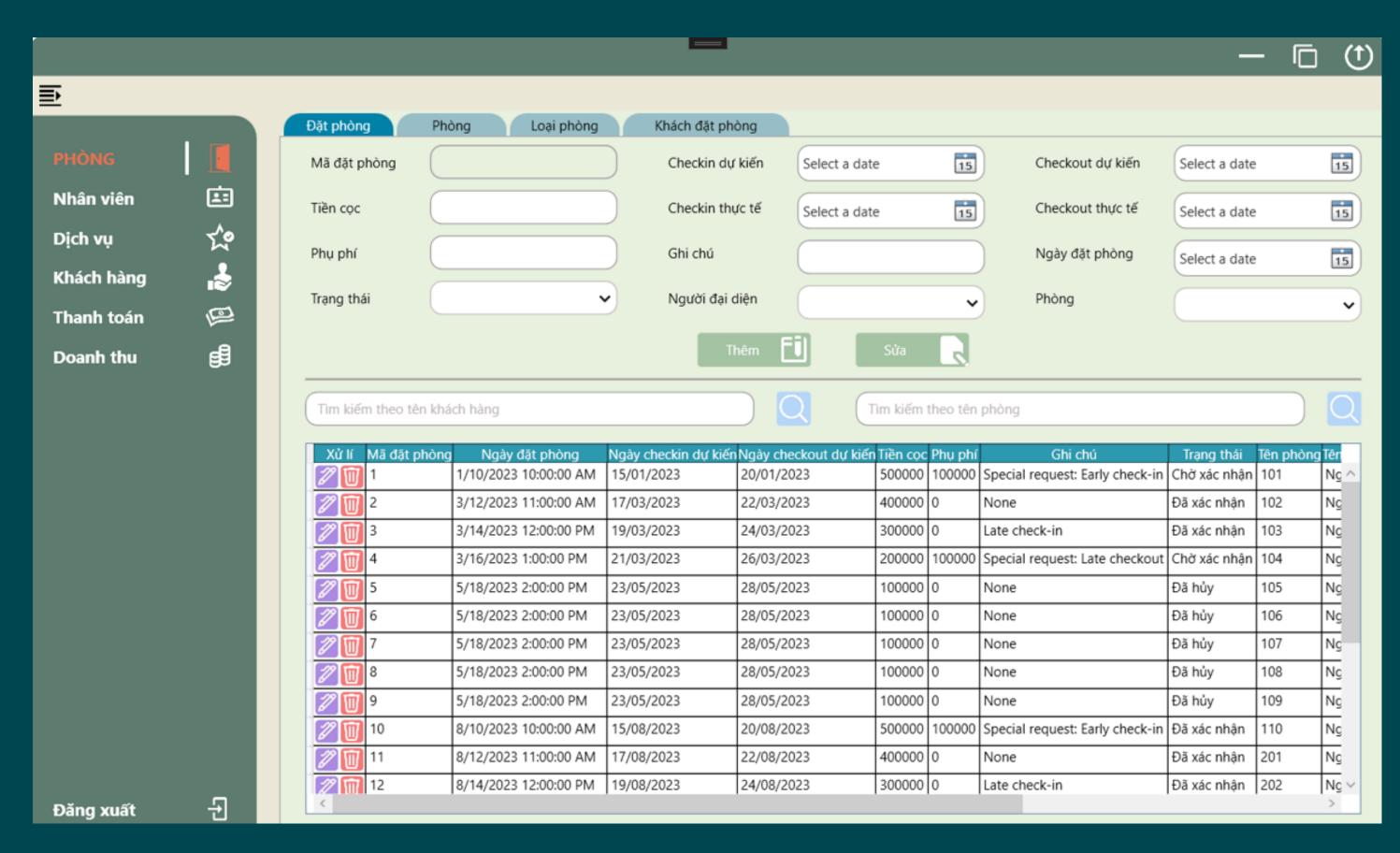
Tạo tài khoản



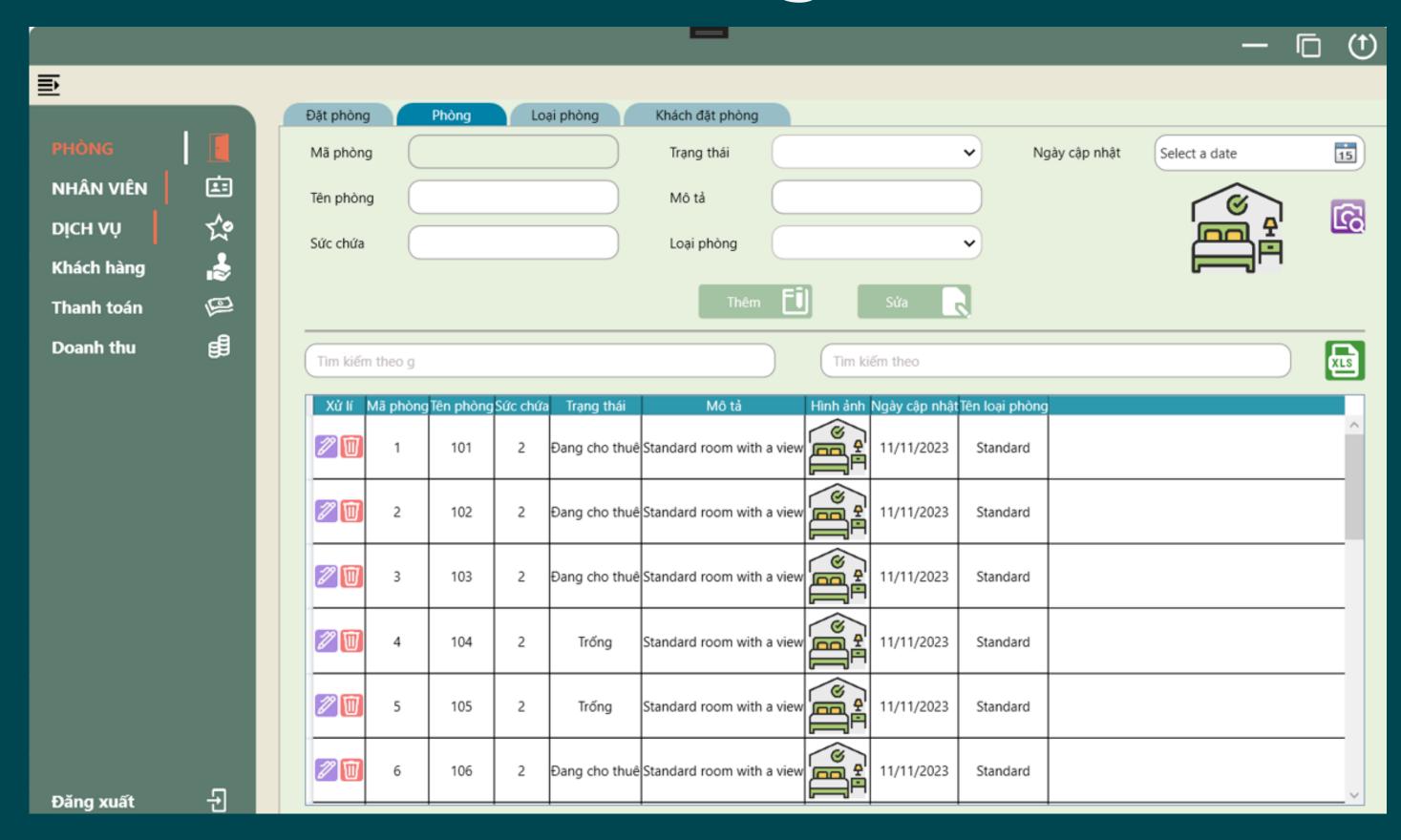
Đăng nhập



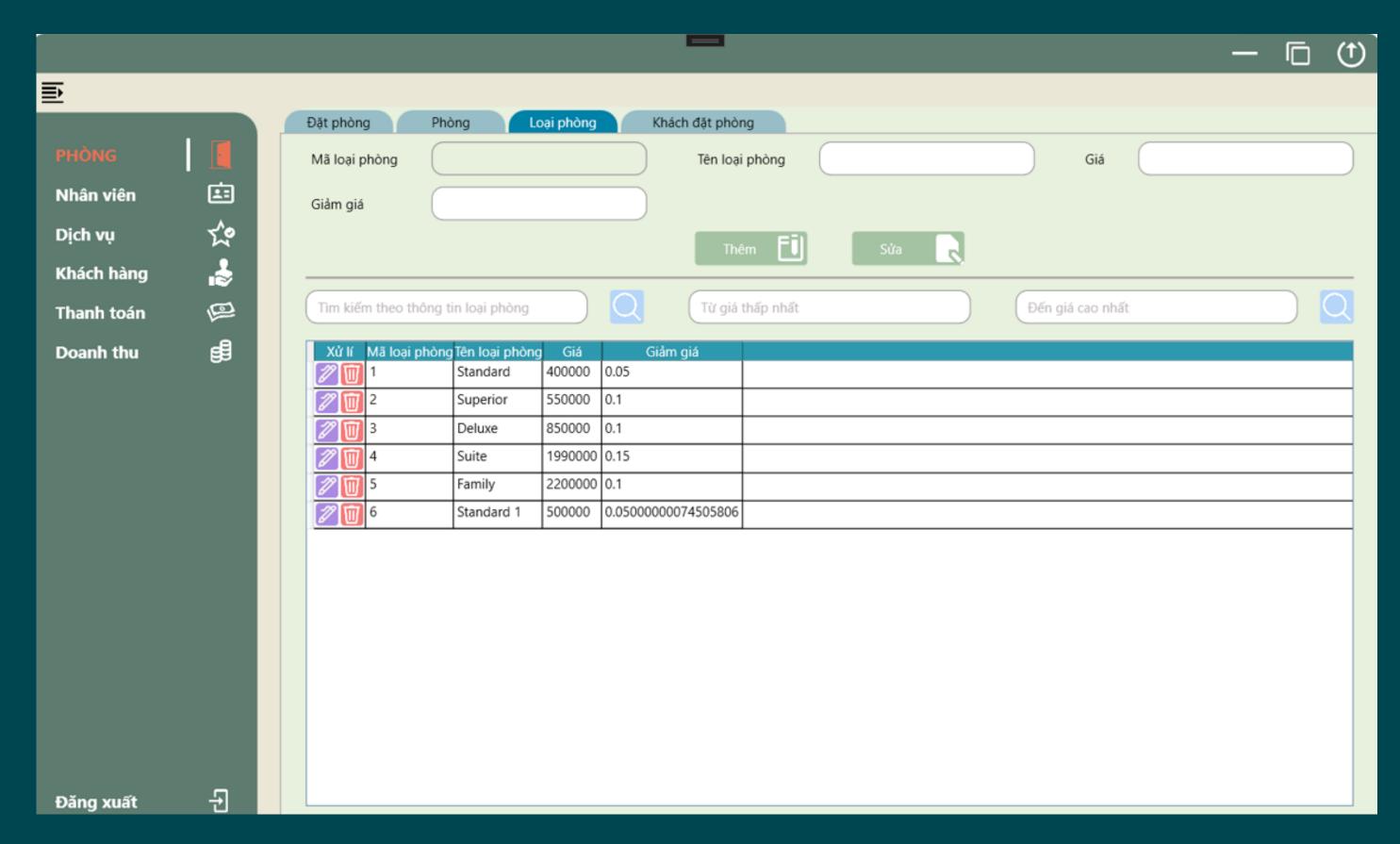
Đặt phòng



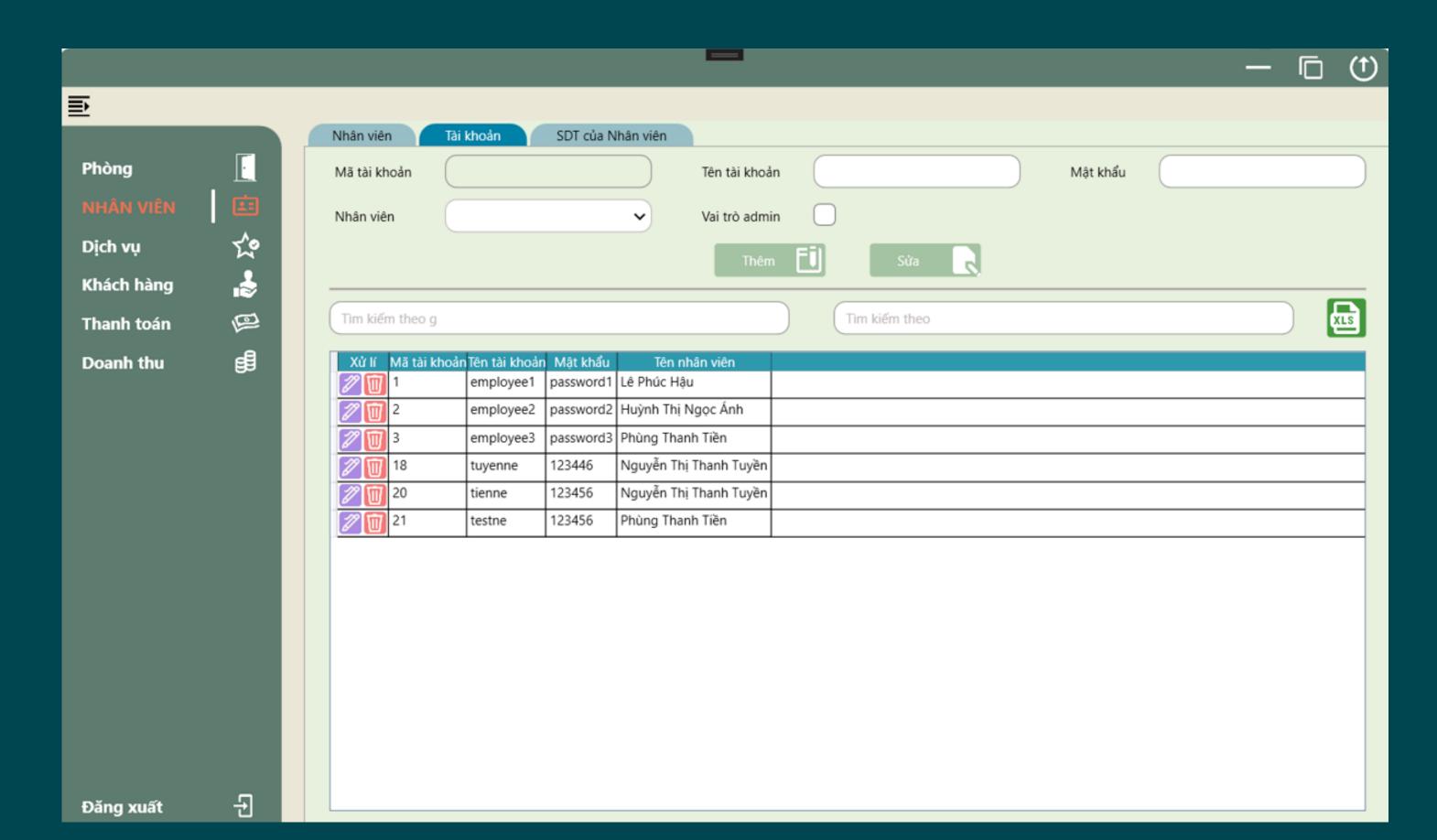
Phòng



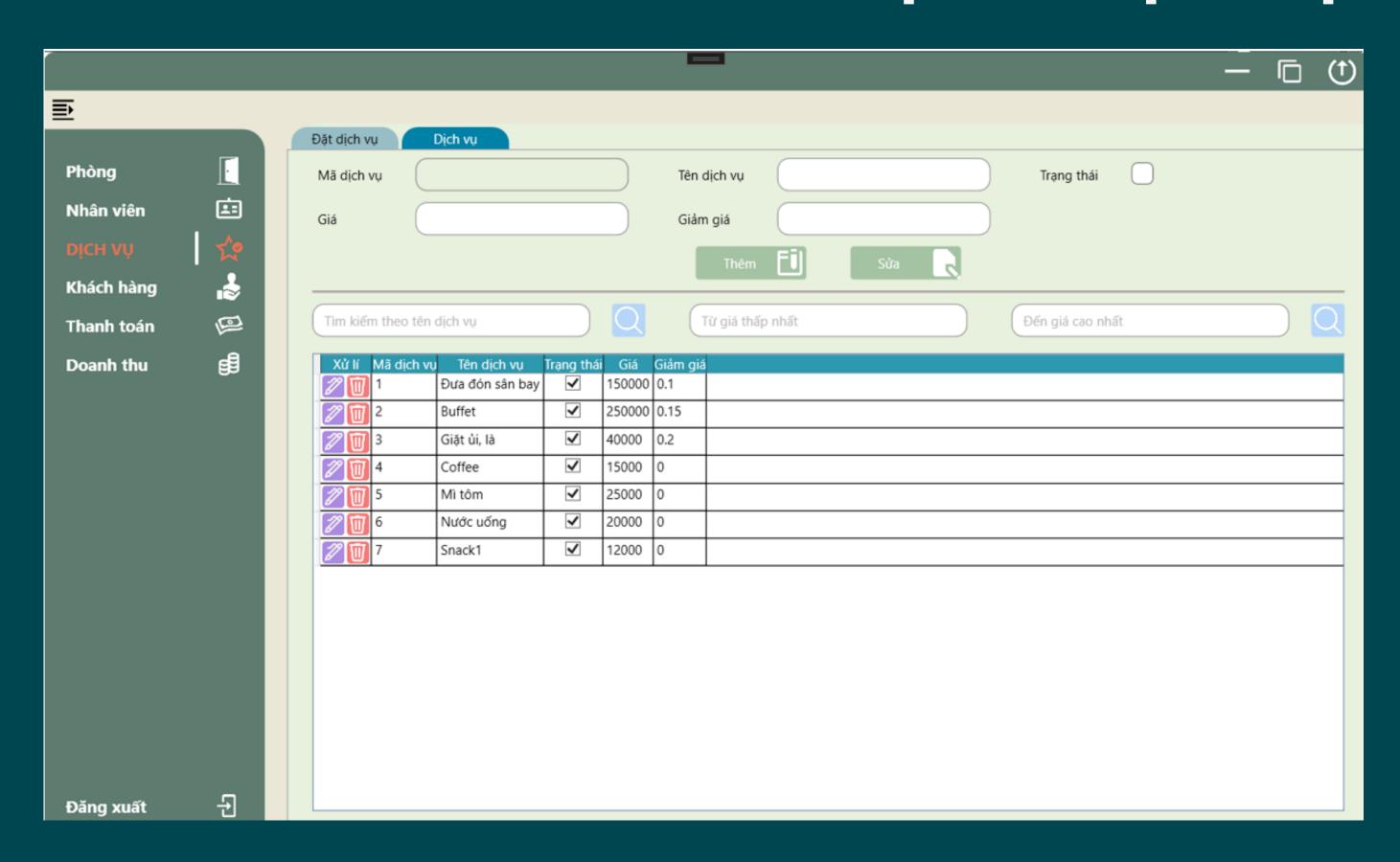
Loại phòng



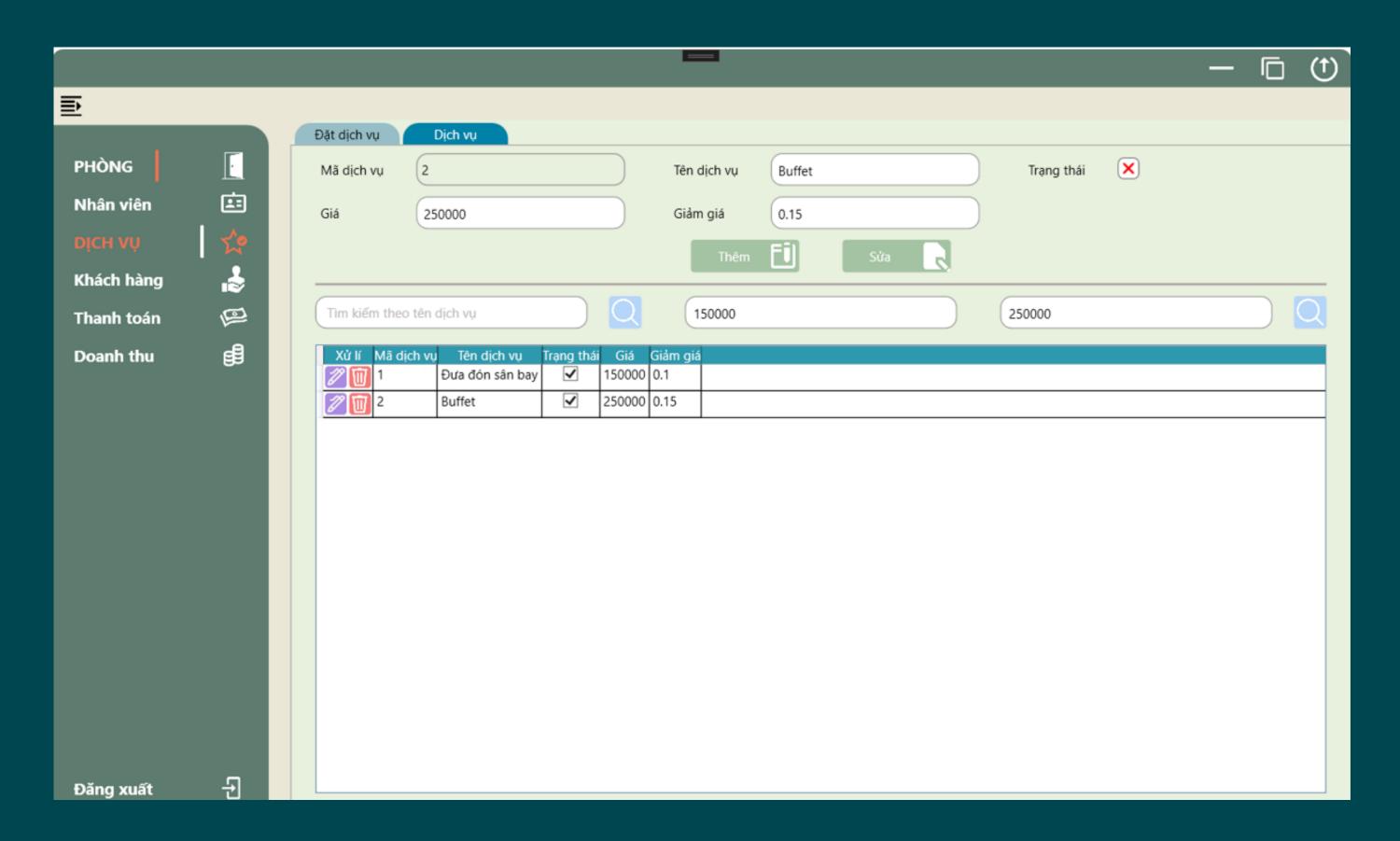
Xem danh sách nhân viên



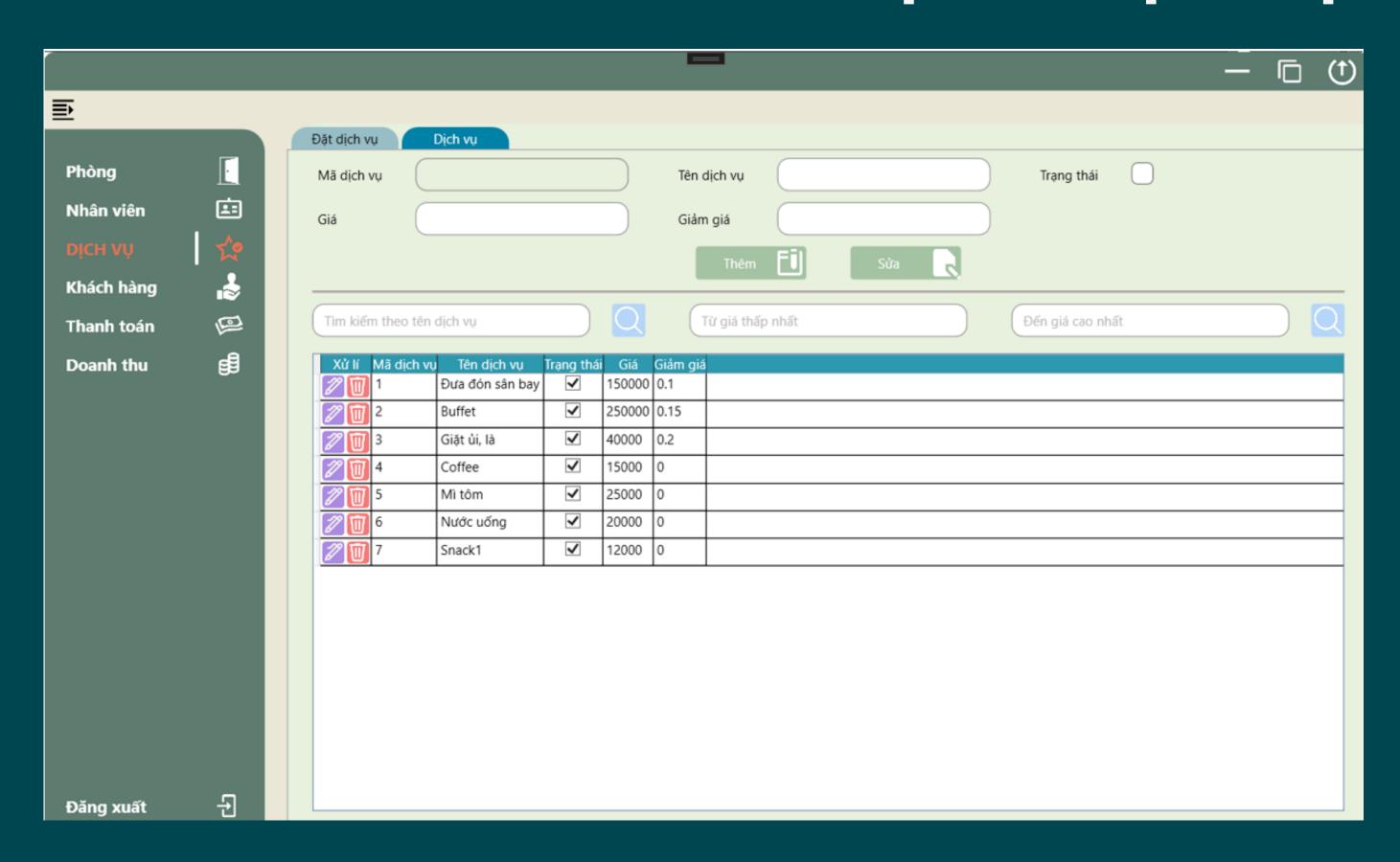
Xem danh sách các dịch vụ hiện có



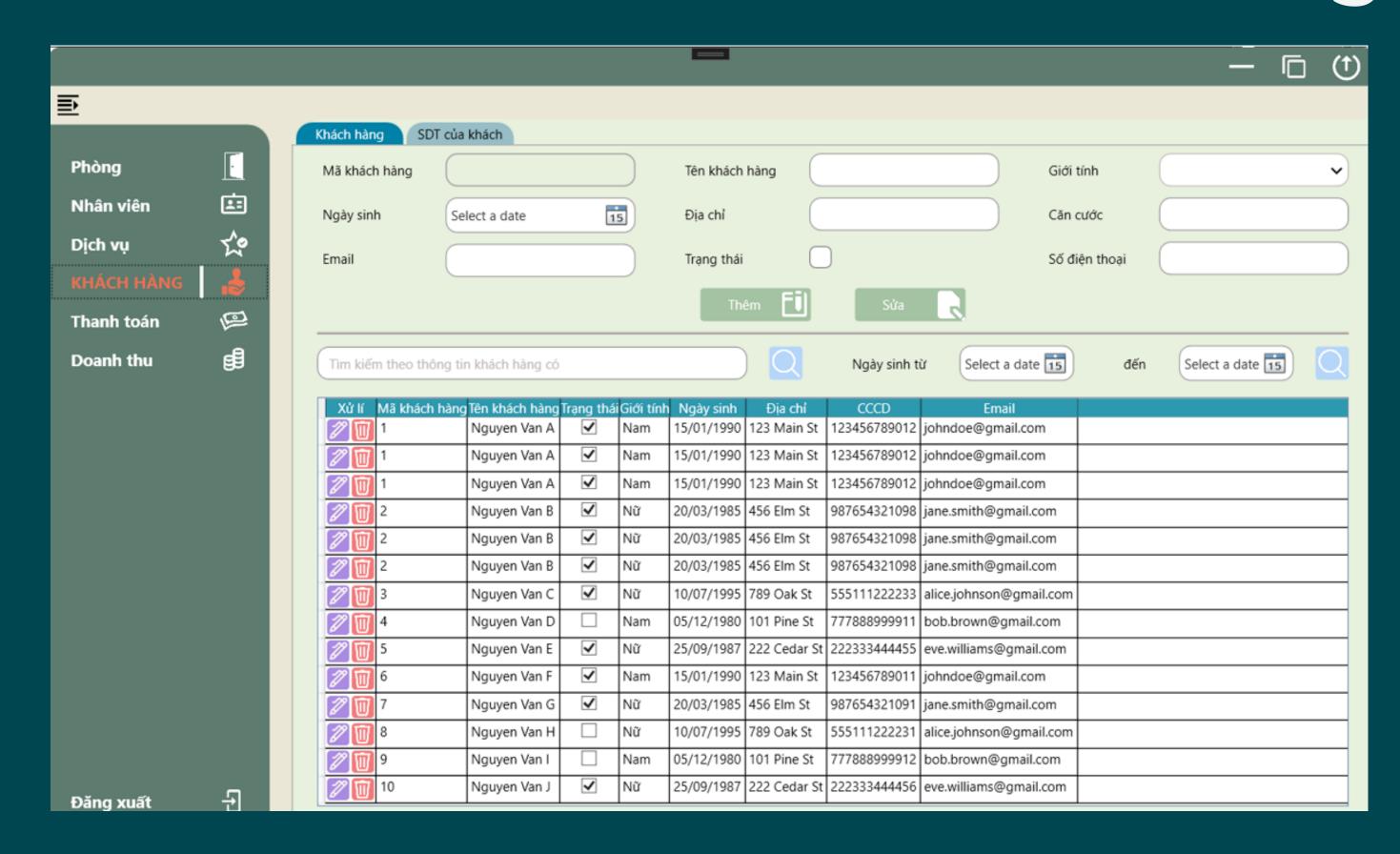
Xem thông tin đặt dịch vụ của khách hàng



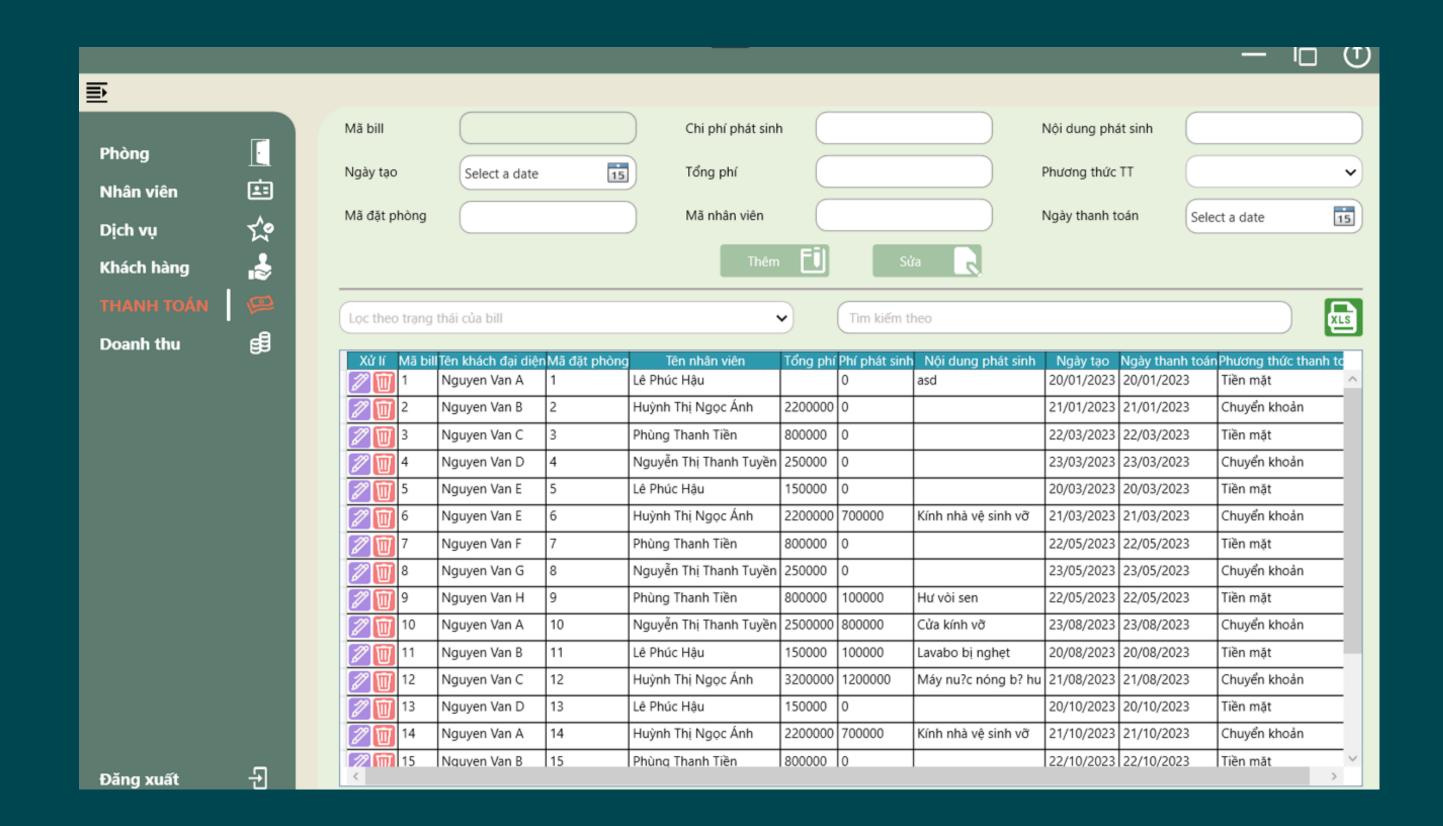
Xem danh sách các dịch vụ hiện có



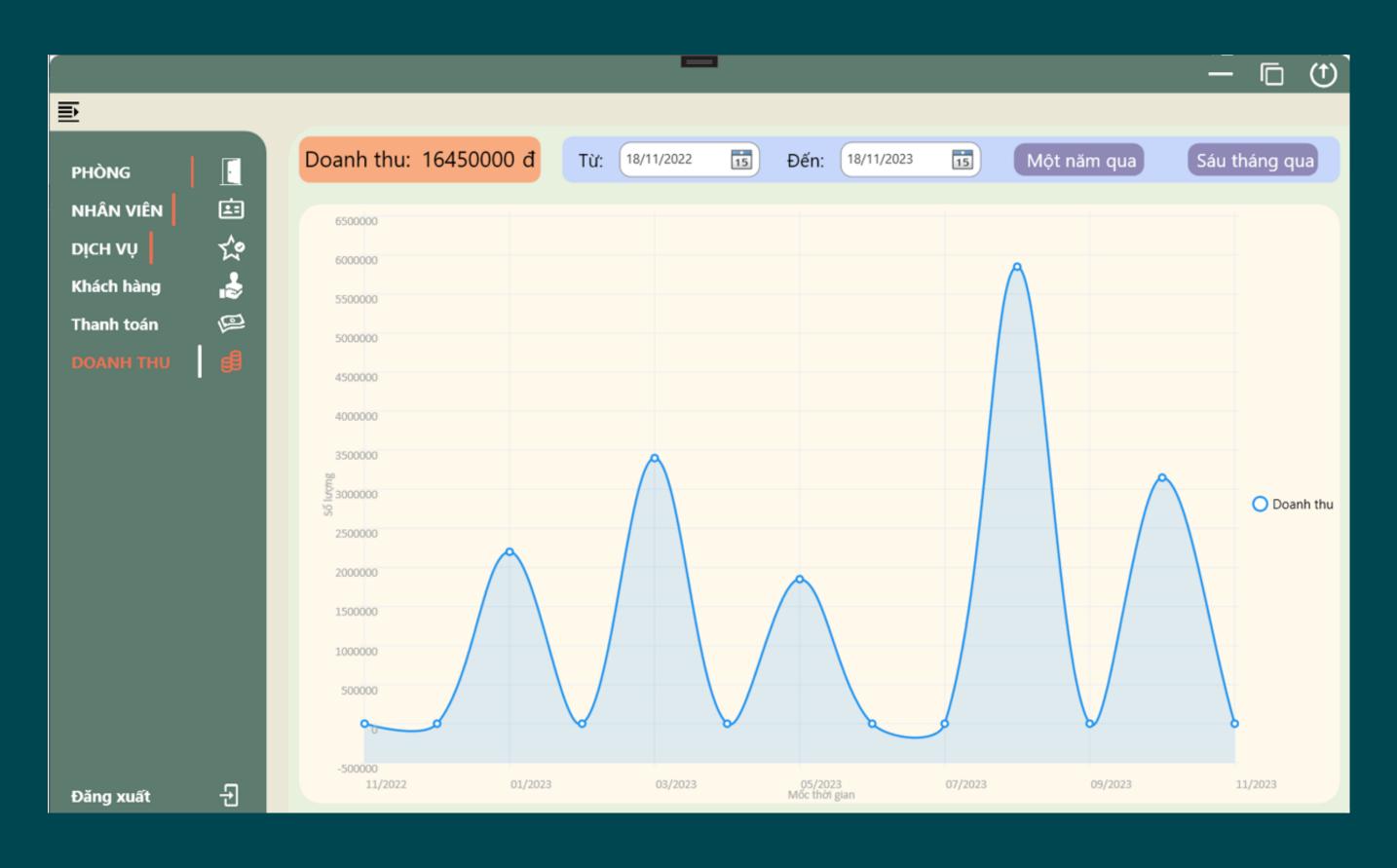
Xem danh sách Khách hàng



Thanh toán hóa đơn



Xem biểu đồ doanh thu



THANKYOU