

**PROJECT DOCUMENT**

**Hệ quản trị nhân sự**

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Lớp: PT14201

Nhóm: 5

Danh sách thành viên nhóm:

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Thành viên: Nguyễn Đức Tùng – PS08443

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***Thành phố Hồ Chí Minh , Tháng 7 - 2019***

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## **PHÂN TÍCH**

### **HIỆN TRẠNG**

Công ty đang quản lý nhân sự, chấm công và tính tiền lương bằng Excel. Hiện công ty đang gặp khó khăn khi số lượng nhân viên ngày càng tăng, dữ liệu ngày càng lớn nên việc quản lý bằng Excel gặp rất nhiều khó khăn, dễ sai sót mà không bảo mật.

### **YÊU CẦU HỆ THỐNG**

Công ty mong muốn xây dựng một phần mềm để giải quyết khó khăn trên.

Yêu cầu chức năng nghiệp vụ

Quản lý tài khoản đăng nhập

Quản lý thông tin nhân viên

Quản lý hợp đồng lao động

Chấm công

Tính tiền lương

Thống kê thành phần nhân viên

Thống kê chấm công, tiền lương

Yêu cầu về bảo mật

Chỉ có trưởng phòng, phó giám đốc và giám đốc mới được cấp tài khoản đăng nhập.

Trưởng phòng được phép chấm công và sửa chấm công phòng ban của mình.

Trưởng phòng nhân sự được phép thêm, sửa, cập nhật tất cả nhân viên.

Chỉ có trưởng phòng kế toán được phép sửa các giá trị hằng số để tính lương.

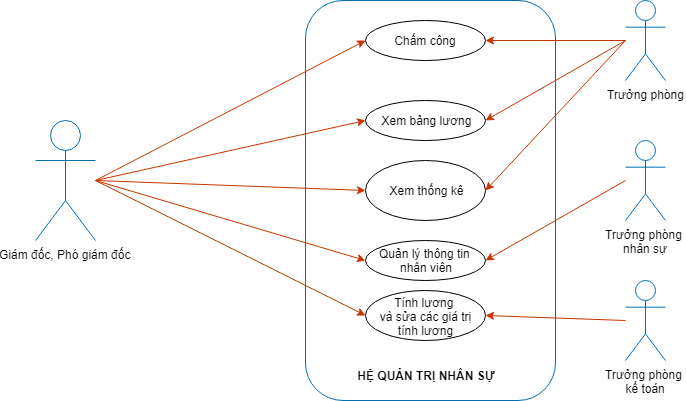
Chỉ có Giám đốc, Phó giám đốc được phép xóa.

Yêu cầu về môi trường công nghệ

Ứng dụng phải được thực với công nghệ Java và JDBC chạy trên mọi hệ điều hành với môi trường JDK tối thiểu 1.8

Hệ quản trị CSDL SQL Server 2008 trở lên

USE CASE

Use case là sơ đồ tổng quan về mặt chức năng và phân vai trò người sử dụng. Dựa vào yêu cầu hệ thống của khách hàng, chúng ta có thể phác thảo sơ đồ use case như sau.

Chi tiết các chức năng

* Chức năng xem chỉ cho phép xem, không cho phép thêm, xóa, sửa
* Mỗi chức năng quản lý bao gồm các chức năng con
  + Xem: xem tất cả và chi tiết một mục
  + Thêm: thêm mới vào cơ sở dữ liệu
  + Xóa: xóa theo mã
  + Sửa: cập nhật dữ liệu đang xem
  + Tìm kiếm: tìm kiếm theo điều kiện
  + Các chức năng thao tác dữ liệu (thêm, sửa, xóa) cần được kiểm lỗi hợp lý với dữ liệu
* Chức năng tổng hợp thống kê số liệu
  + Thống kê thành phần nhân viên
    - Thống kê giới tính
    - Thống kê số lượng nhân viên theo phòng ban
  + Thống kê số ngày công
    - Tỷ lệ nhân viên đi làm đầy đủ
  + Thống kê lương
    - Tổng lương đã chi
    - Lương trung bình
    - Nhân viên có lương cao nhất
    - Nhân viên có lương thấp nhấp
    - Tổng tiền lương theo phòng ban
* Chức năng đăng nhập, đăng xuất và đổi mật khẩu
  + Đăng nhập: để sử dụng phần mềm, bắt buộc phải đăng nhập.
  + Đăng xuất: đăng nhập lại với người dùng khác.
  + Đổi mật khẩu: đổi mật khẩu khác.

**Chi tiết về yêu cầu bảo mật**

* Tất cả phải đăng nhập mới được sử dụng các chức năng trong phần mềm
* Trưởng phòng:
  + Có nhiệm vụ chấm công theo ngày.
  + Có thể sửa chấm công.
  + Được phép xem bảng lương và các thống kê của nhân viên trong phòng.
  + Không thể thêm, xóa, sửa thông tin nhân viên.
* Trưởng phòng nhân sự: được phép thêm nhân viên mới và sửa thông tin.
* Trưởng phòng kế toán: có nhiệm vụ tính lương theo tháng.
* Giám đốc, phó giám đốc: được phép sử dụng tất cả.

**Thông tin các thực thể**

* **Nhân viên**
  + Mã nhân viên
  + Họ và tên
  + Ngày sinh
  + Giới tính
  + Số điện thoại
  + Email
  + Số chứng minh
  + Địa chỉ
  + Trình độ học vấn
  + Hình
  + Mã hợp đồng
  + Mã công việc
  + Mã phòng ban
  + Ngày vào làm
  + Ngày kết thúc
  + Hệ số lương
  + Trạng thái (đang đi làm hoăc đã nghỉ)
* Chức vụ
  + Mã công việc
  + Tên công việc
  + Phụ cấp
* **Phòng ban**
  + Mã phòng ban
  + Tên phòng ban
* **Tài khoản**
  + Tên đăng nhập
  + Mật khẩu
  + Mã nhân viên
* **Bảng lương**
  + Mã nhân viên
  + Ngày phát lương
  + Lương chính
  + Ngày công
  + Phụ cấp trách nhiệm
  + Thu nhập
  + Bảo hiểm xã hội
  + Bảo hiểm y tế
  + Bảo hiểm thất nghiệp
  + Trợ cấp phụ thuộc
  + Thuế thu nhập cá nhân
  + Tạm ứng
  + Thực lãnh
  + Trạng thái (Đã lĩnh lương hay chưa)
* **Thân nhân**
  + Mã thân nhân
  + Họ tên
  + Nghề nghiệp
  + Mối quan hệ
  + Mã nhân viên
  + Giảm trừ phụ thuộc
* **Chấm công**
  + Mã nhân viên
  + Ngày đi làm
  + Tình trạng
* **Bậc thuế thu nhập cá nhân**
  + Lương
  + Thuế
* **Giá trị tính lương**
  + Tên giá trị
  + Giá trị

## **THIẾT KẾ**

### MÔ HÌNH TRIỂN KHAI

Ứng dụng phần mềm được xây dựng để phục vụ cho nhiều người dùng nhưng cơ sở dữ liệu thì lưu trữ tập trung.

* Cần một máy cài SQL Server 2008+. Máy này cần hệ điều hành window xp trở lên.
* Các máy nhân viên cần cài phần mềm. Các máy nhân viên cần JDK 1.8+ với hệ điều hành bất kỳ.

### **THIẾT KẾ CSDL**

#### **Sơ đồ quan hệ thực thể**

Trong hệ thống đã được mô tả trên chúng ta thấy có các thực thể sau

* Nhân Viên: Là người quản lý nhân viên với chức vụ là Giám đốc hoặc Trưởng Phòng đồng thời cũng là các cá nhân còn lại với chức vụ là Nhân Viên.
* Phòng Ban: quản lý thông tin các phòng ban thêm mới hoặc thay đổi Trưởng Phòng.
* Chức Vụ: quản lý thông tin các chức vụ .
* Tài Khoản: Quản lý thông tin đăng nhập.
* Chấm Công: Quản lý thông tin làm việc của nhân viên được sử dụng bởi nhân viên có chức vụ Trưởng Phòng hoặc Giám Đốc.
* Bảng lương: Quản lý thông tin lương của nhân viên.
* Thân Nhân: Quản lý thông tin giảm trừ phụ thuộc đối với các nhân viên có thân nhân là con nhỏ hoặc người có công với cách mạng hoặc gia đình chính sách.

Sau khi phân tích chúng ta có thể thấy các thực thể có mối quan hệ với nhau như sơ đồ ERD sau.

##### **ERD Diagram**

#### **Thiết kế chi tiết các thực thể**

##### Nhân viên

Bảng NhanVien lưu thông tin nhân viên có cấu trúc như sau

Chú ý: (MaCM và MaHD) là duy nhất

|  |  |  |  |
| --- | --- | --- | --- |
| **Tên cột** | **Kiểu** | **Ràng buộc** | **Ghi chú** |
| MaNV | VARCHAR(10) | PK, NOT NULL | Mã nhân viên |
| HoTen | NVARCHAR(50) | NOT NULL | Họ và tên |
| GioiTinh | BIT | NOT NULL | Giới tính |
| NgaySinh | DATE | NOT NULL | Ngày sinh |
| SoCM | VARCHAR(10) | UNIQUE, NOT NULL | Số CMND |
| DienThoai | VARCHAR(10) | NOT NULL | Số điện thoại |
| Email | VARCHAR(50) | NOT NULL | Email |
| DiaChi | NVARCHAR(MAX) | NOT NULL | Địa chỉ |
| Hinh | VARCHAR(MAX) | NULL | Hình ảnh nhân viên |
| TrinhDoHV | NVARCHAR(30) | NOT NULL | Trình độ học vấn |
| MaHD | VARCHAR(10) | UNIQUE, NOT NULL | Mã hợp đồng |
| MaCV | VARCHAR(5) | FK,NOT NULL | Mã chức vụ |
| MaPB | VARCHAR(5) | NOT NULL | Mã phòng ban |
| NgayVaoLam | DATE | NOT NULL | Ngày vào làm |
| NgayKetThuc | DATE | NOT NULL | Ngày kết thúc |
| HeSoLuong | REAL | NOT NULL | Hệ số lương |
| TrangThai | BIT | NOT NULL | Trạng thái |

##### Phòng ban

Bảng PhongBan lưu thông tin các phòng ban có cấu trúc như sau

|  |  |  |  |
| --- | --- | --- | --- |
| **Tên cột** | **Kiểu** | **Ràng buộc** | **Ghi chú** |
| MaPB | VARCHAR(5) | PK, NOT NULL | Mã phòng ban |
| TenPB | NVARCHAR(50) | NOT NULL | Tên phòng ban |

##### Tài khoản

Bảng TaiKhoan lưu thông tin các tài khoản của người dùng có cấu trúc như sau

|  |  |  |  |
| --- | --- | --- | --- |
| **Tên cột** | **Kiểu** | **Ràng buộc** | **Ghi chú** |
| TaiKhoan | VARCHAR(20) | PK, NOT NULL | Tên tài khoản |
| MatKhau | VARCHAR(20) | NOT NULL | Mật khẩu |
| MaNV | VARCHAR(10) | UNIQUE, FK,NOT NULL | Mã nhân viên |

##### Chức vụ

Bảng ChucVu lưu thông tin các chức vụ và phụ cấp cho người có chức vụ có cấu trúc như sau

|  |  |  |  |
| --- | --- | --- | --- |
| **Tên cột** | **Kiểu** | **Ràng buộc** | **Ghi chú** |
| MaCV | VARCHAR(5) | PK, NOT NULL | Mã chức vụ |
| TenCV | NVARCHAR(20) | NOT NULL | Tên chức vụ |
| PhuCap | REAL | NOT NULL | Phụ cấp |
|  |  |  |  |

##### Chấm công

Bảng ChamCong lưu thông tin chấm công có cấu trúc như sau

|  |  |  |  |
| --- | --- | --- | --- |
| **Tên cột** | **Kiểu** | **Ràng buộc** | **Ghi chú** |
| MaNV | VARCHAR(10) | PK,FK, NOT NULL | Mã nhân viên |
| Ngay | DATE | PK,NOT NULL | Ngày chấm công |
| TinhTrang | BIT | NOT NULL | Tình trạng |

##### Thân Nhân

Bảng ThanNhan lưu thông tin thân nhân của nhân viên qua đó xét phụ cấp có cấu trúc như sau

|  |  |  |  |
| --- | --- | --- | --- |
| **Tên cột** | **Kiểu** | **Ràng buộc** | **Ghi chú** |
| MaTN | INT | PK,NOT NULL | Mã thân nhân |
| HoTen | NVARCHAR(50) | NULL | Họ tên thân nhân |
| NgheNghiep | NVARCHAR(50) | NULL | Nghề nghiếp của thân nhân |
| MoiQuanHe | NVARCHAR(20) | NULL | Quan hệ với nhân viên |
| MaNV | VARCHAR(10) | FK,NOT NULL | Mã nhân viên |
| GiamTruPhuThuoc | BIT | NULL | Giảm trừ phụ thuộc |

##### Giá trị tính lương

Bảng GiaTriTinhLương lưu trữ thông tin các giá trị được sử dụng hệ thống

|  |  |  |  |
| --- | --- | --- | --- |
| **Tên cột** | **Kiểu** | **Ràng buộc** | **Ghi chú** |
| TenGiaTri | NVARCHAR(50) | PK, NOT NULL | Tên giá trị |
| GiaTri | REAL | NOT NULL | Giá Trị |

##### Bậc Thuế thu nhập cá nhân

Bảng BacThueTNCN cá nhân lưu trữ thông tin chung về thuế thu nhập cá nhân có cấu trúc như sau

|  |  |  |  |
| --- | --- | --- | --- |
| **Tên cột** | **Kiểu** | **Ràng buộc** | **Ghi chú** |
| Luong | INT | PK, NOT NULL | Lương |
| Thue | REAL | NOT NULL | Thuế |

##### Bảng lương

Bảng BangLuong lưu thông tin lương của nhân viên cùng các khoản phụ cấp có cấu trúc như sau

|  |  |  |  |
| --- | --- | --- | --- |
| **Tên cột** | **Kiểu** | **Ràng buộc** | **Ghi chú** |
| MaNV | VARCHAR(10) | PK, FK,NOT NULL | Mã nhân viên |
| NgayNhanLuong | DATE | PK, NOT NULL | Ngày nhận lương |
| LuongChinh | INT | NOT NULL | Lương chính |
| NgayCong | INT | NOT NULL | Ngày công |
| PC\_TrachNhiem | INT | NOT NULL | Phụ cấp trách nhiệm |
| ThuNhap | INT | NOT NULL | Thu Nhập |
| BHXH | INT | NOT NULL | Bảo hiểm xã hội |
| BHYT | INT | NOT NULL | Bảo hiểm y tế |
| PhuThuoc | INT | NOT NULL | Phụ cấp phụ thuộc |
| ThueTNCN | INT | NOT NULL | Thuế thu nhập cá nhân |
| TamUng | INT | NOT NULL | Tạm ứng |
| ThucLanh | INT | NOT NULL | Thực lãnh |
| TrangThai | BIT | NOT NULL | Trạng thái |

### **THIẾT KẾ GIAO DIỆN**

#### Sơ đồ tổ chức giao diện

Giao diện chính là một cửa sổ chứa menu chính. Thông qua đó để đi đến các giao diện thành viên để thực hiện các chức năng trong hệ thống.

Theo yêu cầu thì mọi nhân viên phải đăng nhập trước khi sử dụng ứng dụng nên form đăng nhập xuất hiện trước để yêu cầu đăng nhập.

Ngoài ra mỗi ứng dụng trong thời gian khởi động cần có một màn hình chào cùng với thanh tiến trình để người có cảm giác ứng dụng đang khởi động.

#### Thiết kế giao diện cho các chức năng nghiệp vụ

##### Màn hình chào

**Các thành phần giao diện:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Thành phần** | **Kiểu** | **Thuộc tính** |
| 1 | AnchorPane | AnchorPane |  |
| 2 | VBox | VBox |  |
| 3 | imgLogo | ImageView |  |
| 4 | progressIndicator | ProgressIndicator |  |

##### Đăng nhập

**Các thành phần giao diện:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Thành phần** | **Kiểu** | **Thuộc tính** |
| 1 | AnchorPane | Anchorpane |  |
| 2 | StackPane | StackPane |  |
| 3 | VBox | VBox |  |
| 4 | topPane | Pane |  |
| 5 | bottomPane | Pane |  |
| 6 | ImageView | ImageView |  |
| 7 | txtUsername | JFXTextField |  |
| 8 | txtPassword | JFXPasswordField |  |
| 9 | chkSavePass | JFXCheckBox |  |
| 10 | btnLogin | JFXButton |  |
| 11 | btnCancel | JFXButton |  |

##### Giao diện chính

**Các thành phần giao diện:**

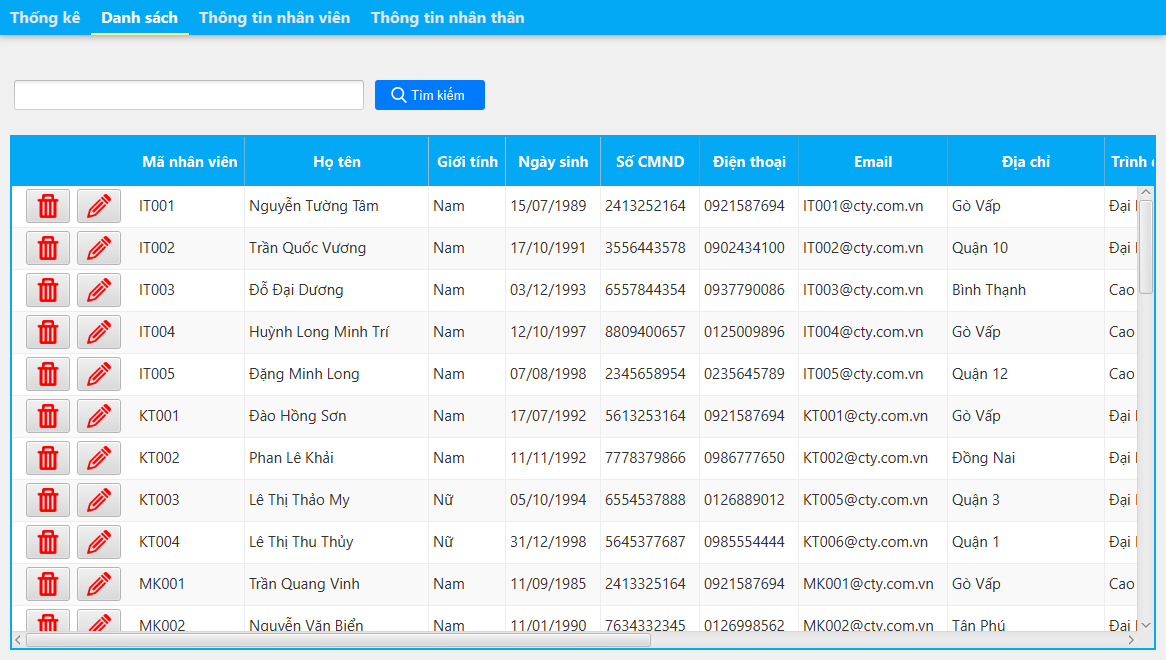
|  |  |  |  |
| --- | --- | --- | --- |
|  | **Thành phần** | **Kiểu** | **Thuộc tính** |
| 1 | borderPane | BorderPane |  |
| 2 | lblLogo | Label |  |
| 3 | lblClose | Label |  |
| 4 | lblMinimize | Label |  |
| 5 | lblTrangChu | Label |  |
| 6 | lblNhanVien | Label |  |
| 7 | lblToChuc | Label |  |
| 8 | lblChamCong | Label |  |
| 9 | lblBangLuong | Label |  |
| 10 | lblGioiThieu | Label |  |
| 11 | lblCaiDat | Label |  |
| 12 | lblVersion | Label |  |
| 13 | mnuUser | MenuButton |  |

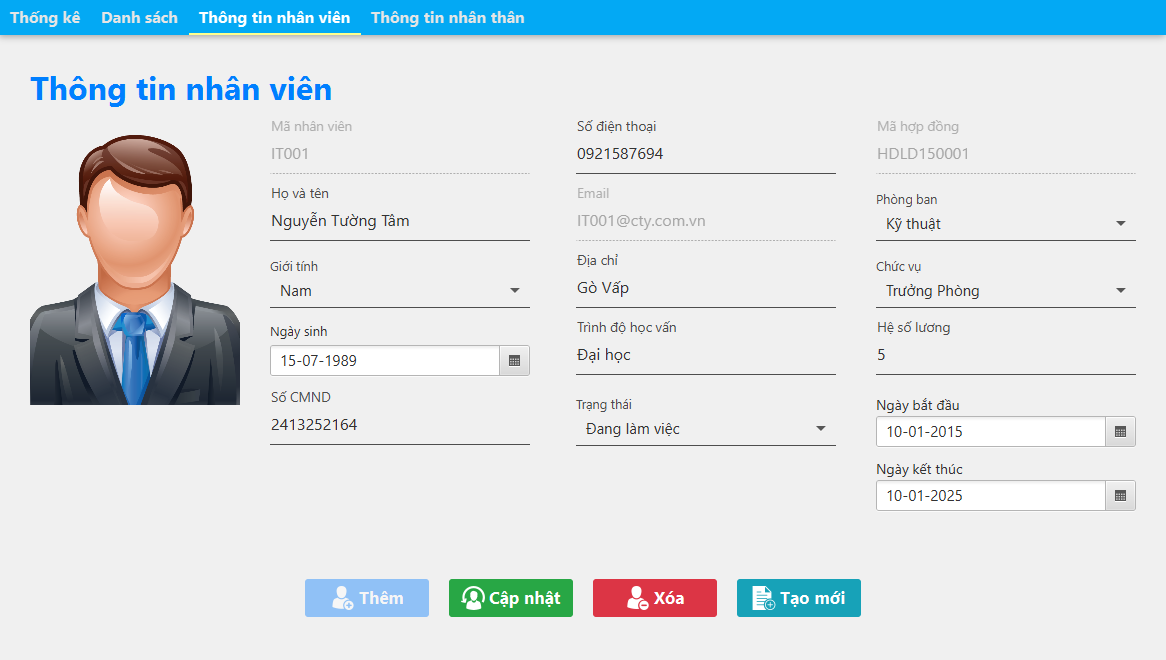
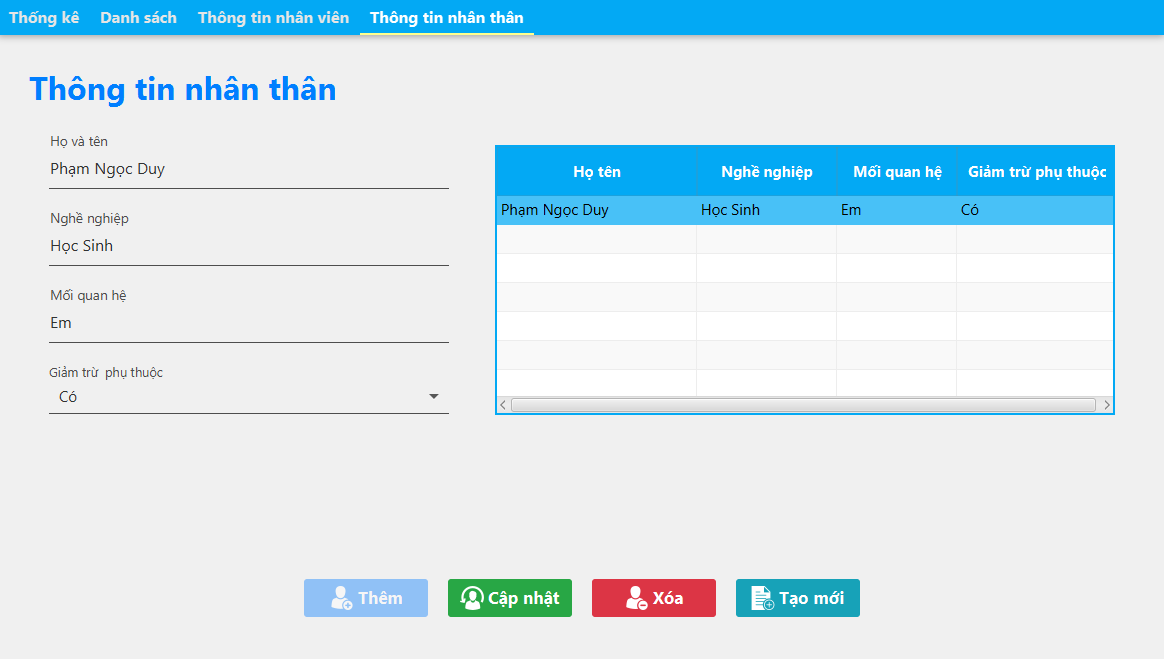
##### Home

**Các thành phần giao diện:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Thành phần** | **Kiểu** | **Thuộc tính** |
| 1 | anchorPane | AnchorPane |  |
| 2 | lblNam | Label |  |
| 3 | hboxSLNhanVien | HBox |  |
| 4 | hboxGiolamViec | HBox |  |
| 5 | hboxTienLuong | HBox |  |
| 6 | lblSLNhanVien | Label |  |
| 7 | lblGiolamViec | Label |  |
| 8 | lblTienLuong | Label |  |
| 9 | imgSLNhanVien | ImageView |  |
| 10 | imgGiolamViec | ImageView |  |
| 11 | imgTienLuong | ImageView |  |
| 12 | chartTangTruongNV | LineChart |  |
| 13 | lblTitleSLNhanVien | Label |  |
| 14 | lblTitleGiolamViec | Label |  |
| 15 | lblTitleTienLuong | Label |  |

##### Nhân viên

****

****

**Các thành phần giao diện:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Thành phần** | **Kiểu** | **Thuộc tính** |
| 1 | anchorPane | AnchorPane |  |
| 2 | tabPane | JFXTabPane |  |
| 3 | tabThongKe | Tab |  |
| 4 | tabDanhSach | Tab |  |
| 5 | tabTTNV | Tab |  |
| 6 | tabHDLD | Tab |  |
| 7 | tabTTNT | Tab |  |
| 8 | chartTyLeGioiTinh | PieChart |  |
| 9 | chartSLNhanVien | BarChart |  |
| 10 | tblNhanVien | TableView |  |
| 11 | imgHinh | ImageView |  |
| 12 | txtMaNV | JFXTextField |  |
| 13 | txtHoTen | JFXTextField |  |
| 14 | lblGioiTinh | Label |  |
| 15 | cboGioiTinh | JFXComboBox |  |
| 16 | lblNgaySinh | Label |  |
| 17 | DPickerNgaySinh | DatePicker |  |
| 18 | txtSoCM | JFXTextField |  |
| 19 | txtDienThoai | JFXTextField |  |
| 20 | txtEmail | JFXTextField |  |
| 21 | txtDiaChi | JFXTextField |  |
| 22 | txtTrinhDoHV | JFXTextField |  |
| 23 | lblTrangThai | Label |  |
| 24 | cboTrangThai | JFXComboBox |  |
| 25 | txtMaHD | JFXTextField |  |
| 26 | cboPhongBan | JFXComboBox |  |
| 27 | cboChucVu | JFXComboBox |  |
| 28 | txtHeSoLuong | JFXTextField |  |
| 29 | DPickerNgayBatDau | DatePicker |  |
| 30 | DpickerNgayKetThuc | DatePicker |  |
| 31 | btnInsert | JFXButton |  |
| 32 | btnDelete | JFXButton |  |
| 33 | btnUpdate | JFXButton |  |
| 34 | btnNew | JFXButton |  |

##### Tổ chức

**Các thành phần giao diện:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Thành phần** | **Kiểu** | **Thuộc tính** |
| 1 | txtMaPB | JFXTextField |  |
| 2 | txtTenPB | JFXTextField |  |
| 3 | cboNhanVien | JFXComboBox |  |
| 4 | tblPhongBan | TableView |  |
| 5 | txtMaCV | JFXTextField |  |
| 6 | txtTenCV | JFXTextField |  |
| 7 | txtPhuCap | JFXTextField |  |
| 8 | tblChucVu | TableView |  |

##### Chấm công

**Các thành phần giao diện:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Thành phần** | **Kiểu** | **Thuộc tính** |
| 1 | chartTyLeDiLam | BarChart |  |
| 2 | tblChamCong | TableView |  |

##### Bảng lương

**Các thành phần giao diện:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Thành phần** | **Kiểu** | **Thuộc tính** |
| 1 | tabPane | TabPane |  |
| 2 | tabThongKe | Tab |  |
| 3 | tabBangLuong | Tab |  |
| 4 | chartPhanHoaTienLuong | BarChart |  |
| 5 | chartTienLuongTheoPhongBan | BarChart |  |
| 6 | tblBangLuong | TableView |  |

##### Tài khoản

**Các thành phần giao diện:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Thành phần** | **Kiểu** | **Thuộc tính** |
| 1 | lblTitle | JFXLabel |  |
| 2 | txtTaiKhoan | JFXTextField |  |
| 3 | txtMatKhau | JFXTextField |  |
| 4 | txtXacNhanMatKhau | JFXTextField |  |
| 5 | cboPhongBan | JFXCombobox |  |
| 6 | cboNhanVien | JFXCombobox |  |
| 7 | tblTaiKhoan | JFXTableView |  |
| 8 | btnThem | JFXButton |  |
| 9 | btnCapNhat | JFXButton |  |
| 10 | btnXoa | JFXButton |  |
| 11 | btnTaoMoi | JFXButton |  |

##### Khôi phục CSDL

**Các thành phần giao diện:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Thành phần** | **Kiểu** | **Thuộc tính** |
| 1 | lblTitle | JFXLabel |  |
| 2 | lblFull | JFXLabel |  |
| 3 | lblDiff | JFXLabel |  |
| 4 | txtFullBackup | JFXTextField |  |
| 5 | txtDiffBackup | JFXTextField |  |
| 6 | btnChonFileFull | JFXButton |  |
| 7 | btnChonFielDiff | JFXButton |  |
| 8 | btnXoaFileFull | JFXButton |  |
| 9 | btnXoaFielDiff | JFXButton |  |
| 10 | btnKhoiPhuc | JFXButton |  |

##### Đổi mật khẩu

**Các thành phần giao diện:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Thành phần** | **Kiểu** | **Thuộc tính** |
| 1 | AnchorPane | Anchorpane |  |
| 2 | StackPane | StackPane |  |
| 3 | VBox | VBox |  |
| 4 | topPane | Pane |  |
| 5 | bottomPane | Pane |  |
| 6 | ImageView | ImageView |  |
| 7 | txtMatKhauCu | JFXPasswordField |  |
| 8 | txtMatKhauMoi | JFXPasswordField |  |
| 9 | chkSavePass | JFXCheckBox |  |
| 10 | btnXacNhan | JFXButton |  |
| 11 | btnCancel | JFXButton |  |
| 12 | txtXacNhanMatKhau | JFXPasswordField |  |

## Thực hiện viết mã

### Viết mã tạo CSDL

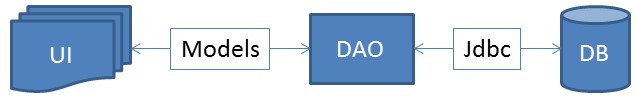
#### Tạo CSDL

|  |
| --- |
| USE master  GO  IF EXISTS(select \* from sys.databases where name='QuanLyNhanSu')  DROP DATABASE QuanLyNhanSu  GO  CREATE DATABASE QuanLyNhanSu  GO  USE QuanLyNhanSu  GO  CREATE TABLE PhongBan  (  MaPB varchar(5) PRIMARY KEY,  TenPB nvarchar(50) not null,  )  GO  CREATE TABLE ChucVu  (  MaCV varchar(5) PRIMARY KEY,  TenCV nvarchar(20) not null,  PhuCap real not null  )  GO  CREATE TABLE NhanVien  (  MaNV varchar(10) PRIMARY KEY,  HoTen nvarchar(50) not null,  GioiTinh bit not null,  NgaySinh date not null,  SoCM varchar(10) not null,  DienThoai varchar(10) not null,  Email varchar(50) not null,  DiaChi nvarchar(max) not null,  Hinh varchar(max),  TrinhDoHV nvarchar(30) not null,  MaHD varchar(10) not null,  MaCV varchar(5) not null,  MaPB varchar(5),  NgayVaoLam date not null,  NgayKetThuc date,  HeSoLuong real not null,  TrangThai bit not null,  UNIQUE(SoCM, MaHD),  FOREIGN KEY (MaCV) REFERENCES ChucVu(MaCV),  FOREIGN KEY (MaPB) REFERENCES PhongBan(MaPB)  )  GO  CREATE TABLE TaiKhoan  (  TaiKhoan varchar(20) PRIMARY KEY,  MatKhau varchar(20) not null,  MaNV varchar(10) UNIQUE,    FOREIGN KEY (MaNV) REFERENCES NhanVien(MaNV) ON DELETE CASCADE  )  GO  CREATE TABLE ThanNhan  (  MaTN int identity(1,1) PRIMARY KEY,  HoTen nvarchar(50),  NgheNghiep nvarchar(50),  MoiQuanHe nvarchar(20),  MaNV varchar(10),  GiamTruPhuThuoc bit    FOREIGN KEY (MaNV) REFERENCES NhanVien(MaNV) ON DELETE CASCADE  )  GO  CREATE TABLE ChamCong  (  MaNV varchar(10) not null,  Ngay date not null,  TinhTrang bit not null,  PRIMARY KEY (MaNV, Ngay),  FOREIGN KEY (MaNV) REFERENCES NhanVien(MaNV) ON DELETE CASCADE  )  GO  CREATE TABLE BangLuong  (  MaNV varchar(10),  NgayPhatLuong date not null,  LuongChinh int not null,  NgayCong int not null,  PC\_TrachNhiem int not null,  ThuNhap int not null,  BHXH int not null,  BHYT int not null,  BHTN int not null,  PhuThuoc int not null,  ThueTNCN int not null,  ThucLanh int not null,  TrangThai bit not null  PRIMARY KEY (MaNV, NgayPhatLuong),  FOREIGN KEY (MaNV) REFERENCES NhanVien(MaNV) ON DELETE CASCADE  )  GO  CREATE TABLE GiaTriTinhLuong  (  TenGiaTri nvarchar(50) PRIMARY KEY,  GiaTri real not null  )  GO  CREATE TABLE BacThueTNCN  (  Luong int PRIMARY KEY,  Thue real not null  )  GO |

#### SQL thủ tục truy vấn

|  |
| --- |
| USE master  Go  USE QuanLyNhanSu  GO  --Tao Stored Procedure Insert, Update, Delete cho bang PhongBan  IF (OBJECT\_ID('SP\_PhongBan') IS NOT NULL)  DROP PROCEDURE SP\_PhongBan  GO  CREATE PROCEDURE SP\_PhongBan  (  @MaPB varchar(5),  @TenPB nvarchar(50),  @StatementType char(6)  )  AS  IF @StatementType = 'Insert'  BEGIN  INSERT INTO PhongBan VALUES(@MaPB, @TenPB)  END  IF @StatementType = 'Update'  BEGIN  UPDATE PhongBan  SET TenPB = @TenPB  WHERE MaPB = @MaPB  END  IF @StatementType = 'Delete'  BEGIN  DELETE FROM PhongBan WHERE MaPB = @MaPB  END  GO  --Tao Stored Procedure Insert, Update, Delete cho bang ChucVu  IF (OBJECT\_ID('SP\_ChucVu') IS NOT NULL)  DROP PROCEDURE SP\_ChucVu  GO  CREATE PROCEDURE SP\_ChucVu  (  @MaCV varchar(5),  @TenCV nvarchar(50),  @PhuCap real,  @StatementType char(6)  )  AS  IF @StatementType = 'Insert'  BEGIN  INSERT INTO ChucVu VALUES(@MaCV, @TenCV, @PhuCap)  END  IF @StatementType = 'Update'  BEGIN  UPDATE ChucVu  SET TenCV = @TenCV, PhuCap = @PhuCap  WHERE MaCV = @MaCV  END  IF @StatementType = 'Delete'  BEGIN  DELETE FROM ChucVu WHERE MaCV = @MaCV  END  GO  --Tao Stored Procedure Insert, Update, Delete cho bang NhanVien  IF (OBJECT\_ID('SP\_NhanVien') IS NOT NULL)  DROP PROCEDURE SP\_NhanVien  GO  CREATE PROCEDURE SP\_NhanVien  (  @MaNV varchar(10),  @HoTen nvarchar(50),  @GioiTinh bit,  @NgaySinh date,  @SoCM varchar(10),  @DienThoai varchar(10),  @Email varchar(50),  @DiaChi nvarchar(max),  @Hinh varchar(max),  @TrinhDoHV nvarchar(30),  @MaHD varchar(10),  @MaCV varchar(5),  @MaPB varchar(5),  @NgayVaoLam date,  @NgayKetThuc date,  @HeSoLuong real,  @TrangThai bit,  @StatementType char(6)  )  AS  IF @StatementType = 'Insert'  BEGIN  INSERT INTO NhanVien VALUES(@MaNV, @HoTen, @GioiTinh, @NgaySinh, @SoCM,  @DienThoai, @MaNV + '@cty.com.vn', @DiaChi, @Hinh, @TrinhDoHV, @MaHD, @MaCV, @MaPB,  @NgayVaoLam, @NgayKetThuc, @HeSoLuong, @TrangThai)  END  IF @StatementType = 'Update'  BEGIN  UPDATE NhanVien  SET HoTen = @HoTen, GioiTinh = @GioiTinh, NgaySinh = @NgaySinh, SoCM = @SoCM,  DienThoai = @DienThoai, Email = @Email, DiaChi = @DiaChi, Hinh = @Hinh, TrinhDoHV = @TrinhDoHV,  MaHD = @MaHD, MaCV = @MaCV, MaPB = @MaPB, NgayVaoLam = @NgayVaoLam,  NgayKetThuc = @NgayKetThuc, HeSoLuong = @HeSoLuong, TrangThai = @TrangThai  WHERE MaNV = @MaNV  END  IF @StatementType = 'Delete'  BEGIN  DELETE FROM NhanVien WHERE MaNV = @MaNV  END  GO  --Tao Stored Procedure Insert, Update, Delete cho bang TaiKhoan  IF (OBJECT\_ID('SP\_TaiKhoan') IS NOT NULL)  DROP PROCEDURE SP\_TaiKhoan  GO  CREATE PROCEDURE SP\_TaiKhoan  (  @TaiKhoan varchar(20),  @MatKhau varchar(20),  @MaNV varchar(10),  @StatementType char(6)  )  AS  IF @StatementType = 'Insert'  BEGIN  INSERT INTO TaiKhoan VALUES(@TaiKhoan, @MatKhau, @MaNV)  END  IF @StatementType = 'Update'  BEGIN  UPDATE TaiKhoan  SET MatKhau = @MatKhau, MaNV = @MaNV  WHERE TaiKhoan = @TaiKhoan  END  IF @StatementType = 'Delete'  BEGIN  DELETE FROM TaiKhoan WHERE TaiKhoan = @TaiKhoan  END  GO  --Tao Stored Procedure Insert, Update, Delete cho bang ThanNhan  IF (OBJECT\_ID('SP\_ThanNhan') IS NOT NULL)  DROP PROCEDURE SP\_ThanNhan  GO  CREATE PROCEDURE SP\_ThanNhan  (  @MaTN int,  @HoTen nvarchar(50),  @NgheNghiep nvarchar(50),  @MoiQuanHe nvarchar(20),  @MaNV varchar(10),  @GiamTruPhuThuoc bit,  @StatementType char(6)  )  AS  IF @StatementType = 'Insert'  BEGIN  INSERT INTO ThanNhan VALUES(@HoTen, @NgheNghiep, @MoiQuanHe, @MaNV, @GiamTruPhuThuoc)  END  IF @StatementType = 'Update'  BEGIN  UPDATE ThanNhan  SET HoTen = @HoTen, NgheNghiep = @NgheNghiep, MoiQuanHe = @MoiQuanHe, MaNV = @MaNV, GiamTruPhuThuoc = @GiamTruPhuThuoc  WHERE MaTN = @MaTN  END  IF @StatementType = 'Delete'  BEGIN  DELETE FROM ThanNhan WHERE MaTN = @MaTN  END  GO  --Tao Stored Procedure Insert, Update, Delete cho bang ChamCong  IF (OBJECT\_ID('SP\_ChamCong') IS NOT NULL)  DROP PROCEDURE SP\_ChamCong  GO  CREATE PROCEDURE SP\_ChamCong  (  @MaNV varchar(10),  @Ngay date,  @TinhTrang bit,  @StatementType char(6)  )  AS  IF @StatementType = 'Insert'  BEGIN  IF @Ngay is null  BEGIN  SET @Ngay = (SELECT CAST(getdate() AS date))  END  INSERT INTO ChamCong VALUES(@MaNV, @Ngay, @TinhTrang)  END  IF @StatementType = 'Update'  BEGIN  UPDATE ChamCong  SET TinhTrang = @TinhTrang  WHERE MaNV = @MaNV AND Ngay = @Ngay  END  IF @StatementType = 'Delete'  BEGIN  DELETE FROM ChamCong WHERE MaNV = @MaNV AND Ngay = @Ngay  END  GO  --Tao Stored Procedure Insert, Update, Delete cho bang GiaTriTinhLuong  IF (OBJECT\_ID('SP\_GiaTriTinhLuong') IS NOT NULL)  DROP PROCEDURE SP\_GiaTriTinhLuong  GO  CREATE PROCEDURE SP\_GiaTriTinhLuong  (  @TenGiaTri nvarchar(50),  @GiaTri real,  @StatementType char(6)  )  AS  IF @StatementType = 'Insert'  BEGIN  INSERT INTO GiaTriTinhLuong VALUES(@TenGiaTri, @GiaTri)  END  IF @StatementType = 'Update'  BEGIN  UPDATE GiaTriTinhLuong  SET GiaTri = @GiaTri  WHERE TenGiaTri = @TenGiaTri  END  IF @StatementType = 'Delete'  BEGIN  DELETE FROM GiaTriTinhLuong WHERE TenGiaTri = @TenGiaTri  END  GO  --Tao Stored Procedure Insert, Update, Delete cho bang ThueTNCN  IF (OBJECT\_ID('SP\_BacThueTNCN') IS NOT NULL)  DROP PROCEDURE SP\_BacThueTNCN  GO  CREATE PROCEDURE SP\_BacThueTNCN  (  @Luong int,  @Thue real,  @StatementType char(6)  )  AS  IF @StatementType = 'Insert'  BEGIN  INSERT INTO BacThueTNCN VALUES(@Luong, @Thue)  END  IF @StatementType = 'Update'  BEGIN  UPDATE BacThueTNCN  SET Thue = @Thue  WHERE Luong = @Luong  END  IF @StatementType = 'Delete'  BEGIN  DELETE FROM BacThueTNCN WHERE Luong = @Luong  END  GO  --Tao cac Function lay Gia tri de Insert cho BangLuong  --Tao Function lay Gia tri tu bang GiaTriTinhLuong  IF (OBJECT\_ID('FN\_SelectGiaTri') IS NOT NULL)  DROP FUNCTION FN\_SelectGiaTri  GO  CREATE FUNCTION FN\_SelectGiaTri  (  @TenGiaTri nvarchar(50)  )  RETURNS real  AS  BEGIN  DECLARE @GiaTri real  SET @GiaTri = (SELECT GiaTri FROM GiaTriTinhLuong WHERE TenGiaTri = @TenGiaTri)  RETURN @GiaTri  END  GO  --Tao Function tinh luong chinh  IF (OBJECT\_ID('FN\_LuongChinh') IS NOT NULL)  DROP FUNCTION FN\_LuongChinh  GO  CREATE FUNCTION FN\_LuongChinh  (  @MaNV varchar(10)  )  RETURNS int  AS  BEGIN  DECLARE @LuongChinh int  SET @LuongChinh = (SELECT HeSoLuong FROM NhanVien WHERE MaNV = @MaNV)\*[dbo].[FN\_SelectGiaTri]('LuongCB')  RETURN @LuongChinh  END  GO  --Tao Function tinh so ngay cong theo thang/nam  IF (OBJECT\_ID('FN\_SoNgayCong') IS NOT NULL)  DROP FUNCTION FN\_SoNgayCong  GO  CREATE FUNCTION FN\_SoNgayCong  (  @MaNV varchar(10),  @NgayDauThang date  )  RETURNS int  AS  BEGIN  DECLARE @NgayCong int  SET @NgayCong = (SELECT COUNT(MaNV) FROM ChamCong WHERE MaNV = @MaNV AND  Ngay BETWEEN @NgayDauThang AND EOMONTH(@NgayDauThang) AND TinhTrang = 1)  RETURN @NgayCong  END  GO  select \* from ChamCong where MaNV = 'MK014'  select [dbo].[FN\_SoNgayCong]('MK014', '2019-7-1')  --Tao Function tinh thue TNCN  IF (OBJECT\_ID('FN\_TinhThueTNCN') IS NOT NULL)  DROP FUNCTION FN\_TinhThueTNCN  GO  CREATE FUNCTION FN\_TinhThueTNCN  (  @ThuNhapChiuThue int  )  RETURNS int  AS  BEGIN  DECLARE @ThueTNCN int  SET @ThueTNCN = @ThuNhapChiuThue\*(SELECT TOP 1 Thue FROM BacThueTNCN WHERE Luong < 16000000 ORDER BY Luong DESC)  IF @ThueTNCN < 0 SET @ThueTNCN = 0  RETURN @ThueTNCN  END  GO  --Tao Stored Procedure Insert cho bang BangLuong  IF (OBJECT\_ID('SP\_Insert\_BangLuong') IS NOT NULL)  DROP PROCEDURE SP\_Insert\_BangLuong  GO  CREATE PROCEDURE SP\_Insert\_BangLuong  (  @MaNV varchar(10),  @NgayPhatLuong date,  @TrangThai bit  )  AS  DECLARE @Nam char(4),  @Thang varchar(2),  @NgayDauThang datetime,  @NgayVaoLam datetime,  @LuongChinh int,  @NgayCong int,  @PC\_TrachNhiem int,  @ThuNhap int,  @BHXH int,  @BHYT int,  @BHTN int,  @GiamTruPhuThuoc int,  @ThueTNCN int,  @ThucLanh int  SET @Nam = YEAR(@NgayPhatLuong)  SET @Thang = MONTH(@NgayPhatLuong) - 1  SET @LuongChinh = [dbo].[FN\_LuongChinh](@MaNV)  SET @NgayDauThang = CAST(@Nam + '-' + @Thang + '-' + '1' AS datetime)  SET @NgayCong = [dbo].[FN\_SoNgayCong](@MaNV, @NgayDauThang)  SET @PC\_TrachNhiem = @LuongChinh\*(SELECT PhuCap FROM ChucVu WHERE MaCV = (Select MaCV FROM NhanVien WHERE MaNV = @MaNV))  SET @ThuNhap = @LuongChinh\*@NgayCong/26 + @PC\_TrachNhiem  SET @NgayVaoLam = (SELECT NgayVaoLam FROM NhanVien WHERE MaNV = @MaNV)  IF Year(@NgayVaoLam) = @Nam AND MONTH(@NgayVaoLam) = @Thang  BEGIN  SET @BHXH = 0  SET @BHYT = 0  SET @BHTN = 0  END  ELSE  BEGIN  SET @BHXH = @LuongChinh\*[dbo].[FN\_SelectGiaTri]('BHXH')  SET @BHYT = @LuongChinh\*[dbo].[FN\_SelectGiaTri]('BHYT')  SET @BHTN = @LuongChinh\*[dbo].[FN\_SelectGiaTri]('BHTN')  END  SET @GiamTruPhuThuoc = 3600000\*(SELECT COUNT(MaTN) FROM ThanNhan WHERE MaNV = @MaNV AND GiamTruPhuThuoc = 1)  SET @ThueTNCN = [dbo].[FN\_TinhThueTNCN](@ThuNhap - @BHXH - @BHYT - @BHTN - @GiamTruPhuThuoc)  SET @ThucLanh = @ThuNhap - @BHXH - @BHYT - @BHTN - @ThueTNCN  INSERT INTO BangLuong VALUES(@MaNV, @NgayPhatLuong, @LuongChinh, @NgayCong, @PC\_TrachNhiem,  @ThuNhap, @BHXH, @BHYT, @BHTN, @GiamTruPhuThuoc, @ThueTNCN, @ThucLanh, @TrangThai)  GO  --Tao Stored Procedure update cho bang BangLuong  IF (OBJECT\_ID('SP\_Update\_BangLuong') IS NOT NULL)  DROP PROCEDURE SP\_Update\_BangLuong  GO  CREATE PROCEDURE SP\_Update\_BangLuong  (  @MaNV varchar(10),  @NgayPhatLuong date,  @TrangThai bit  )  AS  UPDATE BangLuong  SET TrangThai = @TrangThai  WHERE MaNV = @MaNV AND NgayPhatLuong = @NgayPhatLuong  GO |

### LẬP TRÌNH JDBC

Mô hình lập trình với CSDL như hình sau

Trong đó:

* UI: các thành phần giao diện
* DB: cơ sở dữ liệu
* Jdbc: là lớp tiện ích cung cấp các hàm tiện ích làm việc với CSDL thông qua câu lệnh sql hoặc lời gọi thủ tục lưu
* Model: là các lớp mô tả dữ liệu theo cấu trúc các bảng trong CSDL
* DAO: là các lớp thao tác và truy vấn dữ liệu. Nó có nhiệm vụ chuyển đổi Model sang SQL và ngược lại.

Theo mô hình này thì lập trình giao diện làm việc với CSDL thông qua các lớp model. Model như là một gói dữ liệu được sử dụng để giao tiếp giữa giao diện và các thành phần DAO. DAO mới thực sự là lập trình CSDL nó làm nhiệm vụ nhận model từ giao diện, chuyển đổi sang SQL và sử dụng Jdbc để thực hiện các thao tác dữ liệu. Ngược lại thì truy vấn dữ liệu từ CSDL, chuyển đổi thành model để hiển thị lên các thành phần giao diện.

*Việc tách thành các phần riêng biết giúp quản lý dự án tốt hơn, dễ bảo trì nâng cấp hơn.*

#### Model class - Các lớp mô tả dữ liệu

Để tránh các sai sót về kiểu dữ liệu khi làm việc với CSDL, chúng ta cần phải xây dựng các lớp mô tả dữ liệu với kiểu phù hợp. Điều này giúp làm việc với CSDL chặt chẽ hơn, dễ hơn.

##### PhongBan

|  |
| --- |
| *package Home.model;*  *public class PhongBan {*  *private String MaPB;*  *private String TenPB;*    *public PhongBan(){*  *}*    *public PhongBan(String MaPB,String TenPB){*  *this.MaPB = MaPB;*  *this.TenPB = TenPB;*  *}*  *public String getMaPB() {*  *return MaPB;*  *}*  *public String getTenPB() {*  *return TenPB;*  *}*  *public void setMaPB(String MaPB) {*  *this.MaPB = MaPB;*  *}*  *public void setTenPB(String TenPB) {*  *this.TenPB = TenPB;*  *}*  *@Override*  *public String toString() {*  *return TenPB;*  *}*  *}* |

##### ChucVu

|  |
| --- |
| *package Home.model;*  *public class ChucVu {*  *private String MaCV;*  *private String TenCV;*  *private Double PhuCap;*    *public ChucVu(){*  *}*    *public ChucVu(String MaCV,String TenCV,Double PhuCap){*  *this.MaCV = MaCV;*  *this.TenCV = TenCV;*  *this.PhuCap = PhuCap;*  *}*  *public String getMaCV() {*  *return MaCV;*  *}*  *public String getTenCV() {*  *return TenCV;*  *}*  *public Double getPhuCap() {*  *return PhuCap;*  *}*  *public void setMaCV(String MaCV) {*  *this.MaCV = MaCV;*  *}*  *public void setTenCV(String TenCV) {*  *this.TenCV = TenCV;*  *}*  *public void setPhuCap(Double PhuCap) {*  *this.PhuCap = PhuCap;*  *}*  *@Override*  *public String toString() {*  *return TenCV;*  *}*    *}* |

##### NhanVien

|  |
| --- |
| *package Home.model;*  *import Home.helper.XDate;*  *import java.time.LocalDate;*  *import java.util.Date;*  *public class NhanVien {*  *private String MaNV;*  *private String HoTen;*  *private Boolean GioiTinh;*  *private Date NgaySinh;*  *private String SoCM;*  *private String DienThoai;*  *private String Email;*  *private String DiaChi;*  *private String Hinh;*  *private String TrinhDoHV;*  *private String MaHD;*  *private String MaCV;*  *private String MaPB;*  *private Date NgayVaoLam;*  *private Date NgayKetThuc;*  *private double HeSoLuong;*  *private Boolean TrangThai;*  *public NhanVien() {*  *this.NgaySinh = XDate.toDate(LocalDate.now().minusYears(18));*  *this.NgayVaoLam = XDate.toDate(LocalDate.now());*  *this.NgayKetThuc = XDate.toDate(LocalDate.now().plusYears(10));*  *}*  *public NhanVien(String MaNV, String HoTen, Boolean GioiTinh, Date NgaySinh, String SoCM, String DienThoai,*  *String Email, String DiaChi, String Hinh, String TrinhDoHV, String MaHD, String MaCV, String MaPB,*  *Date NgayVaoLam, Date NgayKetThuc, double HeSoLuong, boolean TrangThai) {*  *this.MaNV = MaNV;*  *this.HoTen = HoTen;*  *this.GioiTinh = GioiTinh;*  *this.NgaySinh = NgaySinh;*  *this.SoCM = SoCM;*  *this.DienThoai = DienThoai;*  *this.Email = Email;*  *this.DiaChi = DiaChi;*  *this.Hinh = Hinh;*  *this.TrinhDoHV = TrinhDoHV;*  *this.MaHD = MaHD;*  *this.MaCV = MaCV;*  *this.MaPB = MaPB;*  *this.NgayVaoLam = NgayVaoLam;*  *this.NgayKetThuc = NgayKetThuc;*  *this.HeSoLuong = HeSoLuong;*  *this.TrangThai = TrangThai;*  *}*  *public NhanVien(String MaNV) {*  *this.MaNV = MaNV;*  *}*  *public String getMaNV() {*  *return MaNV;*  *}*  *public void setMaNV(String MaNV) {*  *this.MaNV = MaNV;*  *}*  *public String getHoTen() {*  *return HoTen;*  *}*  *public void setHoTen(String HoTen) {*  *this.HoTen = HoTen;*  *}*  *public Boolean getGioiTinh() {*  *return GioiTinh;*  *}*  *public void setGioiTinh(Boolean GioiTinh) {*  *this.GioiTinh = GioiTinh;*  *}*  *public Date getNgaySinh() {*  *return NgaySinh;*  *}*  *public void setNgaySinh(Date NgaySinh) {*  *this.NgaySinh = NgaySinh;*  *}*  *public String getSoCM() {*  *return SoCM;*  *}*  *public void setSoCM(String SoCM) {*  *this.SoCM = SoCM;*  *}*  *public String getDienThoai() {*  *return DienThoai;*  *}*  *public void setDienThoai(String DienThoai) {*  *this.DienThoai = DienThoai;*  *}*  *public String getEmail() {*  *return Email;*  *}*  *public void setEmail(String Email) {*  *this.Email = Email;*  *}*  *public String getDiaChi() {*  *return DiaChi;*  *}*  *public void setDiaChi(String DiaChi) {*  *this.DiaChi = DiaChi;*  *}*  *public String getHinh() {*  *return Hinh;*  *}*  *public void setHinh(String Hinh) {*  *this.Hinh = Hinh;*  *}*  *public String getTrinhDoHV() {*  *return TrinhDoHV;*  *}*  *public void setTrinhDoHV(String TrinhDoHV) {*  *this.TrinhDoHV = TrinhDoHV;*  *}*  *public String getMaHD() {*  *return MaHD;*  *}*  *public void setMaHD(String MaHD) {*  *this.MaHD = MaHD;*  *}*  *public String getMaCV() {*  *return MaCV;*  *}*  *public void setMaCV(String MaCV) {*  *this.MaCV = MaCV;*  *}*  *public String getMaPB() {*  *return MaPB;*  *}*  *public void setMaPB(String MaPB) {*  *this.MaPB = MaPB;*  *}*  *public Date getNgayVaoLam() {*  *return NgayVaoLam;*  *}*  *public void setNgayVaoLam(Date NgayVaoLam) {*  *this.NgayVaoLam = NgayVaoLam;*  *}*  *public Date getNgayKetThuc() {*  *return NgayKetThuc;*  *}*  *public void setNgayKetThuc(Date NgayKetThuc) {*  *this.NgayKetThuc = NgayKetThuc;*  *}*  *public double getHeSoLuong() {*  *return HeSoLuong;*  *}*  *public void setHeSoLuong(double HeSoLuong) {*  *this.HeSoLuong = HeSoLuong;*  *}*  *public Boolean getTrangThai() {*  *return TrangThai;*  *}*  *public void setTrangThai(Boolean TrangThai) {*  *this.TrangThai = TrangThai;*  *}*  *@Override*  *public String toString() {*  *return HoTen;*  *}*  *}* |

##### ThanNhan

|  |
| --- |
| *package Home.model;*  *public class ThanNhan {*  *private int MaTN;*  *private String HoTen;*  *private String NgheNghiep;*  *private String MoiQuanHe;*  *private String MaNV;*  *private Boolean GiamTruPhuThuoc;*    *public ThanNhan(){*  *}*    *public ThanNhan(int MaTN,String HoTen,String NgheNghiep,*  *String MoiQuanHe,String MaNV,Boolean GiamTruPhuThuoc){*  *this.MaTN = MaTN;*  *this.HoTen = HoTen;*  *this.NgheNghiep = NgheNghiep;*  *this.MoiQuanHe = MoiQuanHe;*  *this.MaNV = MaNV;*  *this.GiamTruPhuThuoc = GiamTruPhuThuoc;*    *}*    *public int getMaTN() {*  *return MaTN;*  *}*  *public String getHoTen() {*  *return HoTen;*  *}*  *public String getNgheNghiep() {*  *return NgheNghiep;*  *}*  *public String getMoiQuanHe() {*  *return MoiQuanHe;*  *}*  *public String getMaNV() {*  *return MaNV;*  *}*  *public Boolean getGiamTruPhuThuoc() {*  *return GiamTruPhuThuoc;*  *}*  *public void setMaTN(int MaTN) {*  *this.MaTN = MaTN;*  *}*  *public void setHoTen(String HoTen) {*  *this.HoTen = HoTen;*  *}*  *public void setNgheNghiep(String NgheNghiep) {*  *this.NgheNghiep = NgheNghiep;*  *}*  *public void setMoiQuanHe(String MoiQuanHe) {*  *this.MoiQuanHe = MoiQuanHe;*  *}*  *public void setMaNV(String MaNV) {*  *this.MaNV = MaNV;*  *}*  *public void setGiamTruPhuThuoc(Boolean GiamTruPhuThuoc) {*  *this.GiamTruPhuThuoc = GiamTruPhuThuoc;*  *}*  *}* |

##### TaiKhoan

|  |
| --- |
| *package Home.model;*  *public class TaiKhoan {*  *private String TaiKhoan;*  *private String MatKhau;*  *private String MaNV;*  *public TaiKhoan() {*  *}*  *public TaiKhoan(String TaiKhoan, String MatKhau, String MaNV) {*  *this.TaiKhoan = TaiKhoan;*  *this.MatKhau = MatKhau;*  *this.MaNV = MaNV;*  *}*  *public String getTaiKhoan() {*  *return TaiKhoan;*  *}*  *public void setTaiKhoan(String TaiKhoan) {*  *this.TaiKhoan = TaiKhoan;*  *}*  *public String getMatKhau() {*  *return MatKhau;*  *}*  *public void setMatKhau(String MatKhau) {*  *this.MatKhau = MatKhau;*  *}*  *public String getMaNV() {*  *return MaNV;*  *}*  *public void setMaNV(String MaNV) {*  *this.MaNV = MaNV;*  *}*  *}* |

##### ChamCong

|  |
| --- |
| *package Home.model;*  *import java.util.Date;*  *public class ChamCong {*  *private String MaNV;*  *private Date Ngay;*  *private boolean TinhTrang;*    *public ChamCong(){*  *}*    *public ChamCong(String MaNV, Date Ngay, boolean TinhTrang){*  *this.MaNV = MaNV;*  *this.Ngay = Ngay;*  *this.TinhTrang = TinhTrang;*  *}*  *public String getMaNV() {*  *return MaNV;*  *}*  *public Date getNgay() {*  *return Ngay;*  *}*  *public boolean getTinhTrang() {*  *return TinhTrang;*  *}*  *public void setMaNV(String MaNV) {*  *this.MaNV = MaNV;*  *}*  *public void setNgay(Date Ngay) {*  *this.Ngay = Ngay;*  *}*  *public void setTinhTrang(boolean TinhTrang) {*  *this.TinhTrang = TinhTrang;*  *}*  *@Override*  *public String toString() {*  *return "ChamCong{" + "MaNV=" + MaNV + ", Ngay=" + Ngay + ", TinhTrang=" + TinhTrang + '}';*  *}*  *}* |

##### BangLuong

|  |
| --- |
| *package Home.model;*  *import java.util.Date;*  *public class BangLuong {*  *private String MaNV;*  *private Date NgayNhanLuong;*  *private int LuongChinh;*  *private int NgayCong;*  *private int PC\_TrachNhiem;*  *private int ThuNhap;*  *private int BHXH;*  *private int BHYT;*  *private int BHTN;*  *private int PhuThuoc;*  *private int TNCN;*  *private int ThucLanh;*  *private boolean TrangThai;*    *public BangLuong(String MaNV,Date NgayNhanLuong, boolean TrangThai){*  *this.MaNV = MaNV;*  *this.NgayNhanLuong = NgayNhanLuong;*  *this.TrangThai = TrangThai;*  *}*    *public BangLuong(String MaNV,Date NgayNhanLuong,int LuongChinh,int NgayCong,int PC\_TrachNhiem,int ThuNhap,int BHXH,*  *int BHYT, int BHTN, int PhuThuoc, int TNCN, int ThucLanh, boolean TrangThai){*    *this.MaNV = MaNV;*  *this. NgayNhanLuong = NgayNhanLuong;*  *this.LuongChinh = LuongChinh;*  *this.NgayCong = NgayCong;*  *this.PC\_TrachNhiem = PC\_TrachNhiem;*  *this.ThuNhap = ThuNhap;*  *this.BHXH = BHXH;*  *this.BHYT = BHYT;*  *this.PhuThuoc = PhuThuoc;*  *this.TNCN = TNCN;*  *this.ThucLanh = ThucLanh;*  *this.TrangThai = TrangThai;*    *}*  *public String getMaNV() {*  *return MaNV;*  *}*  *public Date getNgayNhanLuong() {*  *return NgayNhanLuong;*  *}*  *public int getLuongChinh() {*  *return LuongChinh;*  *}*  *public int getNgayCong() {*  *return NgayCong;*  *}*  *public int getPC\_TrachNhiem() {*  *return PC\_TrachNhiem;*  *}*  *public int getThuNhap() {*  *return ThuNhap;*  *}*  *public int getBHXH() {*  *return BHXH;*  *}*  *public int getBHYT() {*  *return BHYT;*  *}*  *public int getBHTN() {*  *return BHTN;*  *}*  *public int getPhuThuoc() {*  *return PhuThuoc;*  *}*  *public int getTNCN() {*  *return TNCN;*  *}*  *public int getThucLanh() {*  *return ThucLanh;*  *}*  *public boolean getTrangThai() {*  *return TrangThai;*  *}*  *public void setMaNV(String MaNV) {*  *this.MaNV = MaNV;*  *}*  *public void setNgayNhanLuong(Date NgayNhanLuong) {*  *this.NgayNhanLuong = NgayNhanLuong;*  *}*  *public void setLuongChinh(int LuongChinh) {*  *this.LuongChinh = LuongChinh;*  *}*  *public void setNgayCong(int NgayCong) {*  *this.NgayCong = NgayCong;*  *}*  *public void setPC\_TrachNhiem(int PC\_TrachNhiem) {*  *this.PC\_TrachNhiem = PC\_TrachNhiem;*  *}*  *public void setThuNhap(int ThuNhap) {*  *this.ThuNhap = ThuNhap;*  *}*  *public void setBHXH(int BHXH) {*  *this.BHXH = BHXH;*  *}*  *public void setBHYT(int BHYT) {*  *this.BHYT = BHYT;*  *}*  *public void setBHTN(int BHTN) {*  *this.BHTN = BHTN;*  *}*  *public void setPhuThuoc(int PhuThuoc) {*  *this.PhuThuoc = PhuThuoc;*  *}*  *public void setTNCN(int TNCN) {*  *this.TNCN = TNCN;*  *}*  *public void setThucLanh(int ThucLanh) {*  *this.ThucLanh = ThucLanh;*  *}*  *public void setTrangThai(boolean TrangThai) {*  *this.TrangThai = TrangThai;*  *}*  *}* |

##### GiaTriTinhLuong

|  |
| --- |
| *package Home.model;*  *public class GiaTriTinhLuong {*  *private String TenGiaTri;*  *private float GiaTri;*  *public GiaTriTinhLuong() {*  *}*  *public GiaTriTinhLuong(String TenGiaTri, float GiaTri) {*  *this.TenGiaTri = TenGiaTri;*  *this.GiaTri = GiaTri;*  *}*  *public String getTenGiaTri() {*  *return TenGiaTri;*  *}*  *public float getGiaTri() {*  *return GiaTri;*  *}*  *public void setTenGiaTri(String TenGiaTri) {*  *this.TenGiaTri = TenGiaTri;*  *}*  *public void setGiaTri(float GiaTri) {*  *this.GiaTri = GiaTri;*  *}*  *}* |

##### BacThueTNCN

|  |
| --- |
| *package Home.model;*  *public class BacThueTNCN {*  *private int Luong;*  *private float Thue;*    *public BacThueTNCN(){*  *}*    *public BacThueTNCN(int Luong,float Thue){*  *this.Luong = Luong;*  *this.Thue = Thue;*  *}*  *public int getLuong() {*  *return Luong;*  *}*  *public float getThue() {*  *return Thue;*  *}*  *public void setLuong(int Luong) {*  *this.Luong = Luong;*  *}*  *public void setThue(float Thue) {*  *this.Thue = Thue;*  *}*  *}* |

#### DAO Class - Các lớp truy xuất dữ liệu

DAO (Data Access Object) là các lớp giúp giúp làm việc với các bảng trong CSDL. Mỗi lớp được định nghĩa một cách đầy đủ nhất về các thao tác và truy vấn dữ liệu sẽ được sử dụng trong ứng dụng. DAO sau đó sẽ được sử dụng trong các điều khiển sự kiện của giao diện để làm việc với CSDL một cách thuận tiện.

##### PhongBanDAO

|  |
| --- |
| *package Home.DAO;*  *import Home.helper.JDBC;*  *import Home.model.PhongBan;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *import javafx.collections.FXCollections;*  *import javafx.collections.ObservableList;*  *public class PhongBanDAO {*  *public ObservableList<PhongBan> findByCode(String code) {*  *ObservableList<PhongBan> list = FXCollections.observableArrayList();*  *PhongBan phongBan;*  *try {*  *String sql = "{Call SP\_FindPhongBanByCode(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, code);*  *while (rs.next()) {*  *phongBan = new PhongBan(rs.getString(1), rs.getString(2));*  *list.add(phongBan);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return list;*  *}*  *public int insert(PhongBan pb) {*  *int result = 0;*  *try {*  *String sql = "{call sp\_phongban(?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *pb.getMaPB(),*  *pb.getTenPB(),*  *"insert"*  *);*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *public int update(PhongBan pb) {*  *int result = 0;*  *try {*  *String sql = "{call sp\_phongban(?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *pb.getMaPB(),*  *pb.getTenPB(),*  *"update"*  *);*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *public int delete(PhongBan pb) {*  *int result = 0;*  *try {*  *String sql = "{call sp\_phongban(?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *pb.getMaPB(),*  *pb.getTenPB(),*  *"delete"*  *);*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *}* |

##### ChucVuDAO

|  |
| --- |
| *package Home.DAO;*  *import Home.helper.JDBC;*  *import Home.model.ChucVu;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *import javafx.collections.FXCollections;*  *import javafx.collections.ObservableList;*  *public class ChucVuDAO {*  *public ObservableList<ChucVu> findByCode(String code) {*  *ObservableList<ChucVu> list = FXCollections.observableArrayList();*  *ChucVu cv;*  *try {*  *String sql = "{Call SP\_FindChucVuByCode(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, code);*  *while (rs.next()) {*  *cv = new ChucVu(rs.getString(1), rs.getString(2), rs.getDouble(3));*  *list.add(cv);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return list;*  *}*  *public int insert(ChucVu cv) {*  *int result = 0;*  *try {*  *String sql = "{call sp\_chucvu(?,?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *cv.getMaCV(),*  *cv.getTenCV(),*  *cv.getPhuCap(),*  *"insert"*  *);*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *public int update(ChucVu cv) {*  *int result = 0;*  *try {*  *String sql = "{call sp\_chucvu(?,?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *cv.getMaCV(),*  *cv.getTenCV(),*  *cv.getPhuCap(),*  *"Update"*  *);*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *public int delete(ChucVu cv) {*  *int result = 0;*  *try {*  *String sql = "{call sp\_chucvu(?,?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *cv.getMaCV(),*  *cv.getTenCV(),*  *cv.getPhuCap(),*  *"Delete"*  *);*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *}* |

##### NhanVienDAO

|  |
| --- |
| *package Home.DAO;*  *import Home.helper.FormatNumber;*  *import Home.helper.Share;*  *import Home.helper.JDBC;*  *import Home.helper.XDate;*  *import Home.model.NhanVien;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *import java.util.function.Consumer;*  *import javafx.beans.binding.Bindings;*  *import javafx.collections.FXCollections;*  *import javafx.collections.ObservableList;*  *import javafx.scene.chart.PieChart;*  *import javafx.scene.chart.XYChart;*  *public class NhanVienDAO {*  *public NhanVien findByCode(String code) {*  *NhanVien nhanVien = null;*  *try {*  *String sql = "{Call SP\_FindNVByCode(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, code);*  *while (rs.next()) {*  *nhanVien = new NhanVien(rs.getString(1), rs.getString(2), rs.getBoolean(3), rs.getDate(4), rs.getString(5),*  *rs.getString(6), rs.getString(7), rs.getString(8), rs.getString(9), rs.getString(10), rs.getString(11),*  *rs.getString(12), rs.getString(13), rs.getDate(14), rs.getDate(15), rs.getDouble(16), rs.getBoolean(17));*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return nhanVien;*  *}*  *public NhanVien findbyCMND(String cmnd) {*  *NhanVien nhanVien = null;*  *try {*  *String sql = "{Call SP\_FindNVByCMND(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, cmnd);*  *while (rs.next()) {*  *nhanVien = new NhanVien(rs.getString(1));*  *}*  *} catch (Exception e) {*  *e.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return nhanVien;*  *}*  *public NhanVien findbyMaHD(String MaHD) {*  *NhanVien nhanVien = null;*  *try {*  *String sql = "{Call SP\_FindNVByMaHD(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, MaHD);*  *while (rs.next()) {*  *nhanVien = new NhanVien(rs.getString(1));*  *}*  *} catch (Exception e) {*  *e.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return nhanVien;*  *}*  *public ObservableList<NhanVien> findByMaPB(String maPB) {*  *ObservableList<NhanVien> list = FXCollections.observableArrayList();*  *try {*  *String sql = "{Call SP\_FindNVTheoPB(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, maPB);*  *while (rs.next()) {*  *NhanVien nv = new NhanVien(rs.getString(1), rs.getString(2), rs.getBoolean(3), rs.getDate(4), rs.getString(5),*  *rs.getString(6), rs.getString(7), rs.getString(8), rs.getString(9), rs.getString(10), rs.getString(11),*  *rs.getString(12), rs.getString(13), rs.getDate(14), rs.getDate(15), rs.getDouble(16), rs.getBoolean(17));*  *list.add(nv);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return list;*  *}*  *public ObservableList<NhanVien> findNVStartWorkingInMonth(int year, int month) {*  *ObservableList<NhanVien> list = FXCollections.observableArrayList();*  *try {*  *String sql = "{Call SP\_FindNVStartWorkingInMonth(?,?,?)}";*  *ResultSet rs = JDBC.executeQuery(sql, Share.MAPB, year, month);*  *while (rs.next()) {*  *NhanVien nv = new NhanVien(rs.getString(1), rs.getString(2), rs.getBoolean(3), rs.getDate(4), rs.getString(5),*  *rs.getString(6), rs.getString(7), rs.getString(8), rs.getString(9), rs.getString(10), rs.getString(11),*  *rs.getString(12), rs.getString(13), rs.getDate(14), rs.getDate(15), rs.getDouble(16), rs.getBoolean(17));*  *list.add(nv);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return list;*  *}*  *public int getSLNVTheoPhongBan(Object maPB) {*  *int SLNhanVien = 0;*  *try {*  *String sql = "{call SP\_SLNVTheoPB(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, maPB);*  *while (rs.next()) {*  *SLNhanVien += rs.getInt(2);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return SLNhanVien;*  *}*  *public int getSLNVTheoPBVaNam(int year) {*  *int SLNhanVien = 0;*  *try {*  *String sql = "{call SP\_SLNVTheoPBVaNam(?,?)}";*  *ResultSet rs = JDBC.executeQuery(sql, (Object) null, year);*  *while (rs.next()) {*  *SLNhanVien += rs.getInt(2);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return SLNhanVien;*  *}*  *public ObservableList getSLNVTheoPBVaThang(String MaPB, int year) {*  *ObservableList data = FXCollections.observableArrayList();*  *int month = XDate.monthOfYear(year);*  *for (int i = 1; i <= month; i++) {*  *try {*  *String sql = "{call SP\_SLNVTheoPBVaThang(?,?,?)}";*  *ResultSet rs = JDBC.executeQuery(sql, MaPB, i + "", year + "");*  *while (rs.next()) {*  *data.add(new XYChart.Data("Tháng " + i, rs.getInt(1)));*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *}*  *}*  *JDBC.closeConnection();*  *return data;*  *}*  *public int getSLNVTheoPBVaThang(Object MaPB, int year, int month) {*  *int result = 0;*  *try {*  *String sql = "{call SP\_SLNVTheoPBVaThang(?,?,?)}";*  *ResultSet rs = JDBC.executeQuery(sql, MaPB, month, year);*  *while (rs.next()) {*  *result = rs.getInt(1);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *public ObservableList<NhanVien> findByMonth(int year, int month) {*  *ObservableList<NhanVien> list = FXCollections.observableArrayList();*  *try {*  *String sql = "{Call SP\_FindByMonth(?,?,?)}";*  *ResultSet rs = JDBC.executeQuery(sql, Share.MAPB, year, month);*  *while (rs.next()) {*  *NhanVien nv = new NhanVien(rs.getString(1), rs.getString(2), rs.getBoolean(3), rs.getDate(4), rs.getString(5),*  *rs.getString(6), rs.getString(7), rs.getString(8), rs.getString(9), rs.getString(10), rs.getString(11),*  *rs.getString(12), rs.getString(13), rs.getDate(14), rs.getDate(15), rs.getDouble(16), rs.getBoolean(17));*  *list.add(nv);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return list;*  *}*  *public ObservableList<PieChart.Data> getDataForPieChart() {*  *ObservableList<PieChart.Data> data = FXCollections.observableArrayList();*  *try {*  *String sql = "{call SP\_SLNamNu(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, Share.MAPB);*  *while (rs.next()) {*  *data.add(new PieChart.Data(rs.getBoolean(1) ? "Nam" : "Nữ", rs.getInt(2)));*  *}*  *if (data.size() < 2) {*  *if (data.get(0).getName().equals("Nam")) {*  *data.add(new PieChart.Data("Nữ", 0));*  *}*  *if (data.get(0).getName().equals("Nữ")) {*  *data.add(new PieChart.Data("Nam", 0));*  *}*  *}*  *data.forEach(new Consumer<PieChart.Data>() {*  *@Override*  *public void accept(PieChart.Data data) {*  *double soLuong = new NhanVienDAO().getSLNVTheoPhongBan(Share.MAPB);*  *data.nameProperty().bind(Bindings.concat(data.getName(), ": ",*  *FormatNumber.formatDouble(data.getPieValue() / soLuong \* 100), "%"));*  *}*  *});*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return data;*  *}*  *public XYChart.Series getDataForBarChart() {*  *XYChart.Series data = new XYChart.Series<>();*  *double SLNV = 0; //tong so luong nhan vien*  *int count = 0; //So luong phong ban*  *try {*  *String sql = "{call SP\_SLNVTheoPB(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, (Object) null);*  *while (rs.next()) {*  *data.getData().add(new XYChart.Data(rs.getString(1), rs.getDouble(2)));*  *SLNV += rs.getDouble(2);*  *count++;*  *}*  *data.getData().add(new XYChart.Data("Trung bình", SLNV / count));*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return data;*  *}*  *public String getMaxNaNVByPhongBan(String maPB) {*  *String maNV = "";*  *try {*  *String sql = "{call SP\_MaxNaNVByPhongBan(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, maPB);*  *while (rs.next()) {*  *maNV = rs.getString(1);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return maNV;*  *}*  *public String getMaxMaHDOfYear(int year) {*  *String maHD = "HDLD" + String.valueOf(year).substring(2, 4) + "0000";*  *try {*  *String sql = "{call SP\_MaxMaHDOfYear(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, year);*  *while (rs.next()) {*  *if (rs.getString(1) != null) {*  *maHD = rs.getString(1);*  *}*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return maHD;*  *}*  *public int insert(NhanVien nv) {*  *int result = 0;*  *try {*  *String sql = "{call sp\_nhanvien(?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *nv.getMaNV(),*  *nv.getHoTen(),*  *nv.getGioiTinh(),*  *nv.getNgaySinh(),*  *nv.getSoCM(),*  *nv.getDienThoai(),*  *nv.getEmail(),*  *nv.getDiaChi(),*  *nv.getHinh(),*  *nv.getTrinhDoHV(),*  *nv.getMaHD(),*  *nv.getMaCV(),*  *nv.getMaPB(),*  *nv.getNgayVaoLam(),*  *nv.getNgayKetThuc(),*  *nv.getHeSoLuong(),*  *nv.getTrangThai(), "insert");*  *} catch (Exception e) {*  *e.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *public int update(NhanVien nv) {*  *int result = 0;*  *try {*  *String sql = "{call sp\_nhanvien(?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?)}";*  *result = JDBC.executeUpdate(sql, nv.getMaNV(),*  *nv.getHoTen(),*  *nv.getGioiTinh(),*  *nv.getNgaySinh(),*  *nv.getSoCM(),*  *nv.getDienThoai(),*  *nv.getEmail(),*  *nv.getDiaChi(),*  *nv.getHinh(),*  *nv.getTrinhDoHV(),*  *nv.getMaHD(),*  *nv.getMaCV(),*  *nv.getMaPB(),*  *nv.getNgayVaoLam(),*  *nv.getNgayKetThuc(),*  *nv.getHeSoLuong(),*  *nv.getTrangThai(),*  *"update");*  *} catch (Exception e) {*  *e.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *public int delete(NhanVien nv) {*  *int result = 0;*  *try {*  *String sql = "{call sp\_nhanvien(?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *nv.getMaNV(),*  *nv.getHoTen(),*  *nv.getGioiTinh(),*  *nv.getNgaySinh(),*  *nv.getSoCM(),*  *nv.getDienThoai(),*  *nv.getEmail(),*  *nv.getDiaChi(),*  *nv.getHinh(),*  *nv.getTrinhDoHV(),*  *nv.getMaHD(),*  *nv.getMaCV(),*  *nv.getMaPB(),*  *nv.getNgayVaoLam(),*  *nv.getNgayKetThuc(),*  *nv.getHeSoLuong(),*  *nv.getTrangThai(), "delete");*  *} catch (Exception e) {*  *e.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *}* |

##### NhanThanDAO

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| *package Home.DAO;*  *import Home.helper.JDBC;*  *import Home.model.ThanNhan;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *import javafx.collections.FXCollections;*  *import javafx.collections.ObservableList;*  *public class NhanThanDAO {*  *public ObservableList<ThanNhan> findByCode(int code) {*  *ObservableList<ThanNhan> list = FXCollections.observableArrayList();*  *ThanNhan thanNhan;*  *try {*  *String sql = "{Call FindNTByCode(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, code);*  *while (rs.next()) {*  *thanNhan = new ThanNhan(rs.getInt(1),rs.getString(2),rs.getString(3),rs.getString(4),rs.getString(5),rs.getBoolean(6));*  *list.add(thanNhan);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return list;*  *}*  *public int insert(ThanNhan NT) {*  *int result = 0;*  *try {*  *String sql = "{ call SP\_ThanNhan(?,?,?,?,?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *NT.getMaTN(),*  *NT.getHoTen(),*  *NT.getNgheNghiep(),*  *NT.getMoiQuanHe(),*  *NT.getMaNV(),*  *NT.getGiamTruPhuThuoc(), "insert");*  *} catch (Exception e) {*  *e.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *public int update(ThanNhan NT) {*  *int result = 0;*  *try {*  *String sql = "{ call SP\_ThanNhan(?,?,?,?,?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *NT.getMaTN(),*  *NT.getHoTen(),*  *NT.getNgheNghiep(),*  *NT.getMoiQuanHe(),*  *NT.getMaNV(),*  *NT.getGiamTruPhuThuoc(), "update");*  *} catch (Exception e) {*  *e.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*    *public int delete(ThanNhan NT) {*  *int result = 0;*  *try {*  *String sql = "{ call SP\_ThanNhan(?,?,?,?,?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *NT.getMaTN(),*  *NT.getHoTen(),*  *NT.getNgheNghiep(),*  *NT.getMoiQuanHe(),*  *NT.getMaNV(),*  *NT.getGiamTruPhuThuoc(), "delete");*  *} catch (Exception e) {*  *e.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *}* |

##### TaiKhoanDAO

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| *package Home.DAO;*  *import Home.helper.Share;*  *import Home.helper.JDBC;*  *import Home.model.TaiKhoan;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *public class TaiKhoanDAO {*    *public TaiKhoan findByCode(String taiKhoan) {*  *TaiKhoan tk = null;*  *try {*  *String sql = "{Call SP\_FindTaiKhoanByName(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, taiKhoan);*  *while (rs.next()) {*  *tk = new TaiKhoan(rs.getString(1), rs.getString(2), rs.getString(3));*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return tk;*  *}*  *public int checkAccount(String taiKhoan, String matKhau) {*  *int result = 0;*  *try {*  *String sql = "{Call SP\_FindTaiKhoanByName(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, taiKhoan);*  *while (rs.next()) {*  *if (rs.getString(2).equals(matKhau)) {*  *//Tai khoan va mat khau chinh xac*  *//set thong tin tai khoan*  *Share.USER = new TaiKhoan(rs.getString(1), rs.getString(2), rs.getString(3));*  *//set MaPB tai khoan nay quan ly*  *Share.MAPB = (Object)new NhanVienDAO().findByCode(rs.getString(3)).getMaPB();*  *if (Share.MAPB.toString().equals("GD")) {*  *Share.MAPB = null;*  *}*  *System.out.println(Share.MAPB);*  *//Tra ve ket qua*  *result = 2;*  *}else {*  *//Tai khoan dung nhung sai mat khau*  *result = 1;*  *}*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *//Tai khoan khong chinh xac*  *return result;*  *}*    *public int insert(TaiKhoan tk) {*  *int result = 0;*  *try {*  *String sql = "{call sp\_taikhoan(?,?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *tk.getTaiKhoan(),*  *tk.getMatKhau(),*  *tk.getMaNV(),*  *"insert"*  *);*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*    *public int update(TaiKhoan tk) {*  *int result = 0;*  *try {*  *String sql = "{call sp\_taikhoan(?,?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *tk.getTaiKhoan(),*  *tk.getMatKhau(),*  *tk.getMaNV(),*  *"Update"*  *);*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*    *public int delete(TaiKhoan tk) {*  *int result = 0;*  *try {*  *String sql = "{call sp\_taikhoan(?,?,?,?)}";*  *result = JDBC.executeUpdate(sql,*  *tk.getTaiKhoan(),*  *tk.getMatKhau(),*  *tk.getMaNV(),*  *"Delete"*  *);*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *}* |

##### ChamCongDAO

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| *package Home.DAO;*  *import Home.helper.Share;*  *import Home.helper.FormatNumber;*  *import Home.helper.JDBC;*  *import Home.helper.XDate;*  *import Home.model.ChamCong;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *import java.util.Date;*  *import java.util.function.Consumer;*  *import javafx.beans.binding.Bindings;*  *import javafx.collections.FXCollections;*  *import javafx.collections.ObservableList;*  *import javafx.scene.chart.PieChart;*  *public class ChamCongDAO {*    *public ChamCong findByCode(String maNV, Date ngay){*  *ChamCong cc = null;*  *try {*  *String sql = "{Call SP\_FindCCByPrimaryKey(?,?)}";*  *ResultSet rs = JDBC.executeQuery(sql, maNV, XDate.toSqlDate(ngay));*  *while (rs.next()){*  *cc = new ChamCong(maNV, ngay, rs.getBoolean(3));*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return cc;*  *}*    *//Phuong thuc kiem tra tháng này đã chấm công chưa*  *public boolean noRecordExist(int year, int month){*  *boolean result = true;*  *try {*  *String sql = "{Call SP\_FindCCByMonth(?,?)}";*  *ResultSet rs = JDBC.executeQuery(sql, year, month);*  *while (rs.next()){*  *result = false;*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*    *public int getSoGioLamViecTheoNam(int year) {*  *int result = 0;*  *try {*  *String sql = "{call SP\_SoGioLamViecTheoNam(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, year);*  *while (rs.next()) {*  *result = rs.getInt(1);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *public int getSLNVDiLamDayDuTheoThang(int year, int month) {*  *int result = 0;*  *int ngayTrongThang = XDate.daysOfMonth(year, month);*  *int soNgayLe = XDate.holidaysInMonth(year, month);*  *int soNgayLamViecThapNhat = Integer.min(26, ngayTrongThang - soNgayLe);*  *try {*  *String sql = "{Call SP\_ChuyenCanTheoThang(?,?,?,?)}";*  *ResultSet rs = JDBC.executeQuery(sql, Share.MAPB, year, month, soNgayLamViecThapNhat);*  *while (rs.next()) {*  *result = rs.getInt(1);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *public ObservableList<PieChart.Data> getDataForChuyenCanChart(int year, int month) {*  *ObservableList<PieChart.Data> chartData = FXCollections.observableArrayList();*    *double tongSLNV = new NhanVienDAO().getSLNVTheoPBVaThang(Share.MAPB, year, month);*  *int SLNVDiLamDayDu = new ChamCongDAO().getSLNVDiLamDayDuTheoThang(year, month);*    *chartData.add(new PieChart.Data("Số lượng nhân viên đi làm đầy đủ", SLNVDiLamDayDu));*  *chartData.add(new PieChart.Data("Số lượng nhân viên đi làm không đầy đủ", tongSLNV - SLNVDiLamDayDu));*    *chartData.forEach(new Consumer<PieChart.Data>() {*  *@Override*  *public void accept(PieChart.Data data) {*  *data.nameProperty().bind(*  *Bindings.concat(data.getName(), ": ", FormatNumber.formatDouble(data.getPieValue()/tongSLNV\*100), "%"));*  *}*  *});*    *return chartData;*  *}*    *public ObservableList<PieChart.Data> getDataForSoNgayLamViecChart(int year, int month) {*  *ObservableList<PieChart.Data> chartData = FXCollections.observableArrayList();*    *double ngayTrongThang = XDate.daysOfMonth(year, month);*  *int soNgayLe = XDate.holidaysInMonth(year, month);*    *chartData.add(new PieChart.Data("Số ngày làm việc trong tháng", ngayTrongThang - soNgayLe));*  *chartData.add(new PieChart.Data("Số ngày lễ và Chủ nhật", soNgayLe));*    *chartData.forEach(new Consumer<PieChart.Data>() {*  *@Override*  *public void accept(PieChart.Data data) {*  *data.nameProperty().bind(*  *Bindings.concat(data.getName(), ": ", FormatNumber.formatDouble(data.getPieValue()/ngayTrongThang\*100), "%"));*  *}*  *});*    *return chartData;*  *}*    *public ObservableList<Integer> getListYear(){*  *ObservableList<Integer> list = FXCollections.observableArrayList();*  *try {*  *String sql = "{Call SP\_ListYearCC}";*  *ResultSet rs = JDBC.executeQuery(sql);*  *while (rs.next()) {*  *list.add(rs.getInt(1));*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return list;*  *}*    *public int insert(ChamCong cc){*  *int result = 0;*  *try {*  *String sql = "{Call SP\_ChamCong(?,?,?,?)}";*  *result = JDBC.executeUpdate(sql, cc.getMaNV(), XDate.toSqlDate(cc.getNgay()), cc.getTinhTrang(), "Insert");*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*    *public int update(ChamCong cc){*  *int result = 0;*  *try {*  *String sql = "{Call SP\_ChamCong(?,?,?,?)}";*  *result = JDBC.executeUpdate(sql, cc.getMaNV(), XDate.toSqlDate(cc.getNgay()), cc.getTinhTrang(), "Update");*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*    *public int delete(ChamCong cc){*  *int result = 0;*  *try {*  *String sql = "{Call SP\_ChamCong(?,?,?,?)}";*  *result = JDBC.executeUpdate(sql, cc.getMaNV(), XDate.toSqlDate(cc.getNgay()), cc.getTinhTrang(), "Delete");*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *}* |

##### BangLuongDAO

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| *package Home.DAO;*  *import Home.helper.Share;*  *import Home.helper.JDBC;*  *import Home.helper.XDate;*  *import Home.model.BangLuong;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *import javafx.collections.FXCollections;*  *import javafx.collections.ObservableList;*  *import javafx.scene.chart.XYChart;*  *public class BangLuongDAO {*    *//Kiểm tra có tồn tại bản ghi nào trong tháng hay không*  *public boolean banGhiTrongThang(int year, int month){*  *boolean result = false;*  *try {*  *String sql = "{call SP\_BanGhiTrongThang(?,?)}";*  *ResultSet rs = JDBC.executeQuery(sql, year, month);*  *while (rs.next()) {*  *result = true;*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*    *public double getTongTienLuongTrongNam(int year) {*  *double TongTienLuong = 0;*  *try {*  *String sql = "{call SP\_TongTienLuongTrongNam(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, year);*  *while (rs.next()) {*  *TongTienLuong = rs.getLong(1) / 1000000000.0;*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return TongTienLuong;*  *}*    *public XYChart.Series getDataForChartPhanHoaTienLuong(int year, int month) {*  *XYChart.Series data = new XYChart.Series<>();*  *try {*  *String sql = "{call SP\_PhanHoaTienLuong(?,?,?)}";*  *ResultSet rs = JDBC.executeQuery(sql, Share.MAPB, year, month);*  *while (rs.next()) {*  *data.getData().add(new XYChart.Data("Cao nhất", rs.getDouble(1)));*  *data.getData().add(new XYChart.Data("Thấp nhất", rs.getDouble(2)));*  *data.getData().add(new XYChart.Data("Trung bình", rs.getDouble(3)));*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return data;*  *}*    *public XYChart.Series getDataForChartTienLuongTheoPhongBan(int year, int month) {*  *XYChart.Series data = new XYChart.Series<>();*  *double tongTien = 0;*  *int soPhongBan = 0;*    *try {*  *String sql = "{call SP\_TongTienLuongVaPBTheoThang(?,?)}";*  *ResultSet rs = JDBC.executeQuery(sql, year, month);*  *while (rs.next()) {*  *data.getData().add(new XYChart.Data(rs.getString(1), rs.getDouble(2)));*  *tongTien += rs.getDouble(2);*  *soPhongBan++;*  *}*  *if (tongTien > 0) {*  *data.getData().add(new XYChart.Data("Trung bình", tongTien/soPhongBan));*  *}*    *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return data;*  *}*    *public ObservableList<Integer> getListYear(){*  *ObservableList<Integer> list = FXCollections.observableArrayList();*  *try {*  *String sql = "{Call SP\_ListYearBL}";*  *ResultSet rs = JDBC.executeQuery(sql);*  *while (rs.next()) {*  *list.add(rs.getInt(1));*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return list;*  *}*    *public int insert(BangLuong bl){*  *int result = 0;*  *try {*  *String sql = "{Call SP\_Insert\_BangLuong(?,?,?)}";*  *result = JDBC.executeUpdate(sql, bl.getMaNV(), XDate.toSqlDate(bl.getNgayNhanLuong()), bl.getTrangThai());*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*    *public int update(BangLuong bl){*  *int result = 0;*  *try {*  *String sql = "{Call SP\_Update\_BangLuong(?,?,?)}";*  *result = JDBC.executeUpdate(sql, bl.getMaNV(), XDate.toSqlDate(bl.getNgayNhanLuong()), bl.getTrangThai());*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return result;*  *}*  *}* |

##### KhoiPhucDAO

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| *package Home.DAO;*  *import Home.helper.JDBCMaster;*  *import java.sql.CallableStatement;*  *public class KhoiPhucDAO {*  *public boolean restoreDBWithDifferential(String fullPath, String diffPath) {*  *boolean success = true;*  *try {*  *String sql = "{Call SP\_RESTOREDB(?,?,?)}";*  *CallableStatement cstm = JDBCMaster.callableStatement(sql, fullPath, diffPath);*  *cstm.registerOutParameter(3, java.sql.Types.BIT);*  *cstm.execute();*  *if (!cstm.getBoolean(3)) {*  *throw new Exception();*  *}*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *success = false;*  *} finally {*  *JDBCMaster.closeConnection();*  *}*  *return success;*  *}*    *public boolean restoreDBOnlyFullBackup(String fullPath) {*  *boolean success = true;*  *try {*  *String sql = "{Call SP\_RESTOREQLNSOnlyFullBackup(?,?)}";*  *CallableStatement cstm = JDBCMaster.callableStatement(sql, fullPath);*  *cstm.registerOutParameter(2, java.sql.Types.BIT);*  *cstm.execute();*  *if (!cstm.getBoolean(2)) {*  *throw new Exception();*  *}*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *success = false;*  *} finally {*  *JDBCMaster.closeConnection();*  *}*  *return success;*  *}*  *}* |

##### TablePhongBanDAO

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| *package Home.DAO;*  *import Home.helper.Share;*  *import Home.helper.CustomDialog;*  *import Home.helper.JDBC;*  *import Home.model.table.TablePhongBan;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *import javafx.collections.FXCollections;*  *import javafx.collections.ObservableList;*  *import javafx.event.ActionEvent;*  *import javafx.event.EventHandler;*  *public class TablePhongBanDAO {*    *NhanVienDAO nvdao = new NhanVienDAO();*  *PhongBanDAO pbdao = new PhongBanDAO();*    *public ObservableList<TablePhongBan> getData(){*  *ObservableList<TablePhongBan> data = FXCollections.observableArrayList();*  *try {*  *String sql = "{Call SP\_FindPhongBanByCode(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, (Object) null);*  *while (rs.next()){*  *TablePhongBan tblpb = new TablePhongBan(rs.getString(1), rs.getString(2));*    *data.add(tblpb);*  *tblpb.getDelete().setOnAction(new EventHandler<ActionEvent>() {*  *@Override*  *public void handle(ActionEvent event) {*  *if (CustomDialog.confirm("Bạn chắc chắn muốn xóa Phòng ban " + tblpb.getTenPB())) {*  *Share.tcController.deletePB(pbdao.findByCode(tblpb.getMaPB()).get(0));*  *}*  *}*  *});*  *tblpb.getUpdate().setOnAction(new EventHandler<ActionEvent>() {*  *@Override*  *public void handle(ActionEvent event) {*  *Share.tcController.setModel(pbdao.findByCode(tblpb.getMaPB()).get(0));*  *Share.tcController.setStatusPB(false);*  *}*  *});*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return data;*  *}*  *}* |

##### TableChucVuDAO

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| *package Home.DAO;*  *import Home.helper.Share;*  *import Home.helper.CustomDialog;*  *import Home.helper.FormatNumber;*  *import Home.helper.JDBC;*  *import Home.model.table.TableChucVu;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *import javafx.collections.FXCollections;*  *import javafx.collections.ObservableList;*  *import javafx.event.ActionEvent;*  *import javafx.event.EventHandler;*  *public class TableChucVuDAO {*  *ChucVuDAO cvdao = new ChucVuDAO();*  *public ObservableList<TableChucVu> getData() {*  *ObservableList<TableChucVu> data = FXCollections.observableArrayList();*  *try {*  *String sql = "{Call SP\_FindChucVuByCode(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, (Object) null);*  *while (rs.next()) {*  *TableChucVu tblcv = new TableChucVu(rs.getString(1), rs.getString(2), FormatNumber.formatDouble(rs.getDouble(3)) + "%");*  *data.add(tblcv);*  *tblcv.getDelete().setOnAction(new EventHandler<ActionEvent>() {*  *@Override*  *public void handle(ActionEvent event) {*  *if (CustomDialog.confirm("Bạn chắc chắn muốn xóa Chức vụ " + tblcv.getTenCV())) {*  *Share.tcController.deleteCV(cvdao.findByCode(tblcv.getMaCV()).get(0));*  *}*  *}*  *});*  *tblcv.getUpdate().setOnAction(new EventHandler<ActionEvent>() {*  *@Override*  *public void handle(ActionEvent event) {*  *Share.tcController.setModel(cvdao.findByCode(tblcv.getMaCV()).get(0));*  *Share.tcController.setStatusPB(false);*  *}*  *});*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return data;*  *}*  *}* |

##### TableNhanVienDAO

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| *package Home.DAO;*  *import Home.helper.Share;*  *import Home.helper.CustomDialog;*  *import Home.helper.FormatNumber;*  *import Home.helper.JDBC;*  *import Home.model.NhanVien;*  *import Home.model.table.TableNhanVien;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *import javafx.collections.FXCollections;*  *import javafx.collections.ObservableList;*  *import javafx.event.ActionEvent;*  *import javafx.event.EventHandler;*  *import javafx.scene.control.Alert;*  *public class TableNhanVienDAO {*  *public ObservableList<TableNhanVien> getData() {*  *ObservableList<TableNhanVien> data = FXCollections.observableArrayList();*  *try {*  *String sql = "{Call SP\_TBLNhanVien(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, Share.MAPB);*  *while (rs.next()) {*  *TableNhanVien tblnv = new TableNhanVien(rs.getString(1), rs.getString(2), rs.getBoolean(3) ? "Nam" : "Nữ", rs.getString(4),*  *rs.getString(5), rs.getString(6), rs.getString(7), rs.getString(8), rs.getString(9), rs.getString(10),*  *rs.getString(11), rs.getString(12), rs.getString(13), rs.getString(14), FormatNumber.formatDouble(Double.parseDouble(rs.getString(15))),*  *rs.getBoolean(16) ? "Đang làm việc" : "Đã nghỉ việc");*  *data.add(tblnv);*  *tblnv.getDelete().setOnAction(new EventHandler<ActionEvent>() {*  *@Override*  *public void handle(ActionEvent event) {*  *if (!CustomDialog.confirm("Bạn chắc chắn muốn xóa nhân viên " + tblnv.getHoTen())) {*  *return;*  *}*  *if (new NhanVienDAO().delete(new NhanVien(tblnv.getMaNV())) > 0) {*  *Share.nvController.loadDataToTableNV();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "Managemnet System", "Xóa nhân viên thành công ");*  *Share.nvController.newNV();*  *} else {*  *CustomDialog.showAlert(Alert.AlertType.ERROR, Share.mainStage, "Management System", "Xóa thông tin nhân viên thất bại! vui lòng kiểm tra lại ");*  *}*  *}*  *});*  *tblnv.getUpdate().setOnAction((ActionEvent event) -> {*  *NhanVien nv = new NhanVienDAO().findByCode(tblnv.getMaNV());*  *Share.nvController.setModelNhanVien(nv);*  *Share.nvController.changeTabPane(2);*  *Share.nvController.loadDataToTableNT();*  *Share.nvController.setStatusNV(false);*  *});*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return data;*  *}*  *}* |

##### TableThanNhanDAO

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| *package Home.DAO;*  *import Home.helper.JDBC;*  *import javafx.collections.ObservableList;*  *import Home.model.table.TableNhanThan;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *import javafx.collections.FXCollections;*  *public class TableThanNhanDAO {*  *public ObservableList<TableNhanThan> getDATA(String maNV) {*  *ObservableList<TableNhanThan> DATA = FXCollections.observableArrayList();*  *try {*  *String sql = "{Call SP\_TBLThanNhan(?)}";*  *ResultSet rs = JDBC.executeQuery(sql, maNV);*  *while (rs.next()) {*  *TableNhanThan tblNT = new TableNhanThan(rs.getInt(1), rs.getString(2),*  *rs.getString(3), rs.getString(4), rs.getString(5), rs.getBoolean(6) ? "Có" : "Không");*  *DATA.add(tblNT);*  *}*  *} catch (SQLException e) {*  *e.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return DATA;*  *}*  *}* |

##### TableTaiKhoanDAO

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| *package Home.DAO;*  *import Home.helper.JDBC;*  *import Home.model.table.TableTaiKhoan;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *import javafx.collections.FXCollections;*  *import javafx.collections.ObservableList;*  *public class TableTaiKhoanDAO {*  *public ObservableList<TableTaiKhoan> getData() {*  *ObservableList<TableTaiKhoan> data = FXCollections.observableArrayList();*  *NhanVienDAO nvdao = new NhanVienDAO();*  *PhongBanDAO pbdao = new PhongBanDAO();*  *try {*  *String sql = "{Call SP\_TBLTaiKhoan()}";*  *ResultSet rs = JDBC.executeQuery(sql);*  *while (rs.next()) {*  *TableTaiKhoan tbltk = new TableTaiKhoan(rs.getString(1), rs.getString(2),*  *nvdao.findByCode(rs.getString(3)),*  *pbdao.findByCode(rs.getString(4)).get(0));*  *data.add(tbltk);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return data;*  *}*  *}* |

##### TableChamCongDAO

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| *package Home.DAO;*  *import Home.helper.JDBC;*  *import Home.model.NhanVien;*  *import Home.model.table.TableChamCong;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *import java.util.Arrays;*  *import javafx.collections.FXCollections;*  *import javafx.collections.ObservableList;*  *public class TableChamCongDAO {*  *public ObservableList<TableChamCong> getData(int year, int month) {*  *ObservableList<TableChamCong> data = FXCollections.observableArrayList();*  *ObservableList<NhanVien> listNhanVien = new NhanVienDAO().findByMonth(year, month);*  *for (NhanVien nv : listNhanVien) {*  *try {*  *Boolean[] onwork = new Boolean[31];*  *Arrays.fill(onwork, Boolean.FALSE);*  *String sql = "{Call SP\_ChamCongTheoThang(?,?,?)}";*  *ResultSet rs = JDBC.executeQuery(sql, nv.getMaNV(), year, month);*  *while (rs.next()) {*  *String dayOfMonth = rs.getString(1).substring(8, 10);*  *onwork[Integer.parseInt(dayOfMonth) - 1] = rs.getBoolean(2);*  *}*  *TableChamCong tableChamCong = new TableChamCong(nv.getMaNV(), nv.getHoTen(),*  *new PhongBanDAO().findByCode(nv.getMaPB()).get(0), year + "", month + "", onwork);*  *data.add(tableChamCong);*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *}*  *return data;*  *}*  *}* |

##### TableBangLuongDAO

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| *package Home.DAO;*  *import Home.helper.JDBC;*  *import Home.helper.Share;*  *import Home.model.table.TableBangLuong;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *import javafx.collections.FXCollections;*  *import javafx.collections.ObservableList;*  *public class TableBangLuongDAO {*  *public ObservableList<TableBangLuong> getData(int year,int month){*  *ObservableList<TableBangLuong> data = FXCollections.observableArrayList();*  *try {*  *String sql = "{Call SP\_TBLBangLuong(?,?,?)}";*  *ResultSet rs = JDBC.executeQuery(sql, Share.MAPB, year, month);*  *while (rs.next()){*  *TableBangLuong tblbl = new TableBangLuong(rs.getString(1), rs.getString(2), rs.getString(3), rs.getString(4),*  *rs.getDate(6), rs.getInt(7), rs.getInt(8), rs.getInt(9), rs.getInt(10), rs.getInt(11), rs.getInt(12),*  *rs.getInt(13), rs.getInt(14), rs.getInt(15), rs.getInt(16), rs.getBoolean(17));*    *data.add(tblbl);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *} finally {*  *JDBC.closeConnection();*  *}*  *return data;*  *}*  *}* |

### Viết mã ứng dụng

#### Lớp hỗ trợ

Các lớp hỗ trợ chứa các phương thức tiện ích giúp chúng ta thực hiện các xử lý trong ứng dụng đơn giản hơn, ngắn gọn hơn, dễ hiểu hơn.

##### Lớp tiện ích XDate

Chứa các phương thức chuyển đổi thời gian và chuỗi giúp lập trình sau này khi xử lý thời gian dễ dàng hơn.

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| *package Home.helper;*  *import java.text.ParseException;*  *import java.text.SimpleDateFormat;*  *import java.time.LocalDate;*  *import java.time.format.DateTimeFormatter;*  *import java.util.Calendar;*  *import java.util.Date;*  *import java.util.HashMap;*  *import java.util.Locale;*  *import javafx.util.StringConverter;*  *public class XDate {*    *//biến định dạng ngày/tháng/năm*  *public static SimpleDateFormat DATE\_FORMATER = new SimpleDateFormat("dd/MM/yyyy");*  *public static StringConverter<LocalDate> converter = new StringConverter<LocalDate>() {*  *DateTimeFormatter dateFormatter = DateTimeFormatter.ofPattern("dd-MM-yyyy");*  *@Override*  *public String toString(LocalDate date) {*  *if (date != null) {*  *return dateFormatter.format(date);*  *} else {*  *return "";*  *}*  *}*  *@Override*  *public LocalDate fromString(String string) {*  *if (string != null && !string.isEmpty()) {*  *return LocalDate.parse(string, dateFormatter);*  *} else {*  *return null;*  *}*  *}*  *};*  *public static LocalDate toLocalDate(Date date) {*  *if(date == null){*  *return LocalDate.now();*  *}*  *return new java.sql.Date(date.getTime()).toLocalDate();*  *}*    *public static Date toDate(LocalDate localDate) {*  *return java.sql.Date.valueOf(localDate);*  *}*  *public static java.sql.Date toSqlDate(Date date){*  *return new java.sql.Date(date.getTime());*  *}*    *public static Date toDate(String dateString, String... pattern) {*  *try {*  *if (pattern.length > 0) {*  *DATE\_FORMATER.applyPattern(pattern[0]);*  *} else {*  *DATE\_FORMATER = new SimpleDateFormat("dd/MM/yyyy");*  *}*  *return DATE\_FORMATER.parse(dateString);*  *} catch (ParseException ex) {*  *ex.printStackTrace();*  *return null;*  *}*  *}*  *public static String toString(Date date, String... pattern) {*  *if (pattern.length > 0) {*  *DATE\_FORMATER.applyPattern(pattern[0]);*  *} else {*  *DATE\_FORMATER = new SimpleDateFormat("dd/MM/yyyy");*  *}*    *if (date == null) {*  *date = XDate.now();*  *}*    *return DATE\_FORMATER.format(date);*  *}*  */\*\**  *\* Lấy thời gian hiện tại*  *\**  *\* @return Date kết quả*  *\*/*  *public static Date now() {*  *return new Date();*  *}*  */\*\**  *\* Số tháng trong năm*  *\**  *\*/*  *public static int monthOfYear(int year) {*  *int month = 12;*  *if (year == LocalDate.now().getYear()) {*  *month = LocalDate.now().getMonthValue();*  *}*  *return month;*  *}*  */\*\**  *\* Số ngày trong tháng*  *\*/*  *public static int daysOfMonth(int year, int month) {*  *Calendar calendar = Calendar.getInstance();*    *calendar.set(year, month - 1, 1);//Tháng tính từ 0*    *int daysOfMonth = calendar.getActualMaximum(calendar.DAY\_OF\_MONTH);*  *return daysOfMonth;*  *}*  *//Ngày cao nhất trong tháng (ngày không lớn hơn ngày hiện tại)*  *public static int maxDaysOfMonth(int year, int month) {*  *//Tháng, năm hiện tại thì trả về ngày hôm nay*  *if (year == LocalDate.now().getYear() && month == monthOfYear(year)) {*  *return LocalDate.now().getDayOfMonth();*  *}*  *//Ngược lại trả về tháng lớn nhất*  *return daysOfMonth(year, month);*  *}*    *//Tính số ngày nghỉ trong tháng*  *public static int holidaysInMonth(int year, int month){*  *//Khởi tạo Calendar*  *Calendar calendar = Calendar.getInstance();*  *int holidaysInMonth = 0;//Biến số ngày nghỉ*  *initHolidays();*    *//Vòng lặp kiểm tra từ ngay 1 đến ngày cuối tháng*  *for (int day = 1; day <= daysOfMonth(year, month); day++) {*  *calendar.set(year, month - 1, day);*  *int dayOfWeek = calendar.get(Calendar.DAY\_OF\_WEEK);*  *//Tính số ngày chủ nhật*  *if (dayOfWeek == Calendar.SUNDAY) {*  *holidaysInMonth++;*  *}*  *}*  *//Số ngày lễ trong tháng*  *String monthName = calendar.getDisplayName(Calendar.MONTH, Calendar.LONG, Locale.getDefault());*  *for (String key : Holidays.keySet()) {*  *if (monthName.equals(key)) {*  *holidaysInMonth += Holidays.get(key).length;*  *}*  *}*    *return holidaysInMonth;*  *}*  *public static HashMap<String, Integer[]> Holidays = new HashMap<>();;*    *public static void putHolidays(String month, int ...days){*  *Integer listDays[] = new Integer[days.length];*  *for (int i = 0; i < listDays.length; i++) {*  *listDays[i] = days[i];*  *}*  *Holidays.put(month, listDays);*  *}*    *private static HashMap<String, Integer[]> initHolidays(){*  *Holidays.clear();*  *putHolidays("January", 1);*  *putHolidays("April", 30);*  *putHolidays("May", 1);*  *putHolidays("September", 2);*  *return Holidays;*  *}*    */\*\**  *\* Kiểm tra vào truyền vào có phải là ngày lễ hay không*  *\* @return true or false*  *\*/*  *public static Boolean isHoliday(Date date){*  *initHolidays();*  *Calendar calendar = Calendar.getInstance();*  *calendar.setTime(date);*    *//Kiểm tra date là ngày Chủ nhật*  *if (calendar.get(Calendar.DAY\_OF\_WEEK) == Calendar.SUNDAY) {*  *return true;*  *}*    *//Kiểm tra date là ngày lễ*  *//Lay tên tháng*  *String monthName = calendar.getDisplayName(Calendar.MONTH, Calendar.LONG, Locale.getDefault());*  *//Lấy ngày*  *int day = calendar.get(Calendar.DAY\_OF\_MONTH);*  *for (String key : Holidays.keySet()) {*  *if (monthName.equals(key)) {*  *for (Integer dayOfMonth : Holidays.get(key)) {*  *if (day == dayOfMonth) {*  *return true;*  *}*  *}*  *}*  *}*  *return false;*  *}*  *}* |

##### Lớp tiện ích JDBC

Chứa các phương thức thực hiện các câu lệnh thao tác và truy vấn được gọn nhẹ hơn

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| *package Home.helper;*  *import java.sql.Connection;*  *import java.sql.DriverManager;*  *import java.sql.PreparedStatement;*  *import java.sql.ResultSet;*  *import java.sql.SQLException;*  *public class JDBC {*  *private static String driver = "com.microsoft.sqlserver.jdbc.SQLServerDriver";*  *private static String dburl = "jdbc:sqlserver://localhost:1433;databaseName=QuanLyNhanSu";*  *private static String username = "sa";*  *private static String password = "fpolyduan1";*  *private static Connection connection;*  *//Nạp driver*  *static {*  *try {*  *Class.forName(driver);*  *} catch (ClassNotFoundException ex) {*  *ex.printStackTrace();*  *}*  *}*  */\*\**  *\* Xây dựng PreparedStatement*  *\**  *\* @param sql là câu lệnh SQL chứa có thể chứa tham số. Nó có thể là một lời*  *\* gọi thủ tục lưu*  *\* @param args là danh sách các giá trị được cung cấp cho các tham số trong*  *\* câu lệnh sql*  *\* @return PreparedStatement tạo được*  *\*/*  *public static PreparedStatement prepareStatement(String sql, Object... args) {*  *PreparedStatement pstmt = null;*  *try {*  *connection = DriverManager.getConnection(dburl, username, password);*  *if (sql.trim().startsWith("{")) {*  *pstmt = connection.prepareCall(sql);*  *} else {*  *pstmt = connection.prepareStatement(sql);*  *}*  *for (int i = 0; i < args.length; i++) {*  *pstmt.setObject(i + 1, args[i]);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *}*  *return pstmt;*  *}*  */\*\**  *\* Thực hiện câu lệnh SQL thao tác (INSERT, UPDATE, DELETE) hoặc thủ tục lưu*  *\* thao tác dữ liệu*  *\**  *\* @param sql là câu lệnh SQL chứa có thể chứa tham số. Nó có thể là một lời*  *\* gọi thủ tục lưu*  *\* @param args là danh sách các giá trị được cung cấp cho các tham số trong*  *\* câu lệnh sql \**  *\* @return số dòng được thực thi*  *\*/*  *public static int executeUpdate(String sql, Object... args) {*  *try {*  *PreparedStatement pstm = prepareStatement(sql, args);*  *try {*  *return pstm.executeUpdate();*  *} finally {*  *pstm.getConnection().close();*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *return 0;*  *}*  *}*  */\*\**  *\* Thực hiện câu lệnh SQL truy vấn (SELECT) hoặc thủ tục lưu truy vấn dữ*  *\* liệu*  *\**  *\* @param sql là câu lệnh SQL chứa có thể chứa tham số. Nó có thể là một lời*  *\* gọi thủ tục lưu*  *\* @param args là danh sách các giá trị được cung cấp cho các tham số trong*  *\* câu lệnh sql*  *\* @return kết quả câu lệnh truy vấn*  *\*/*  *public static ResultSet executeQuery(String sql, Object... args) {*  *try {*  *PreparedStatement pstm = prepareStatement(sql, args);*  *return pstm.executeQuery();*  *} catch (SQLException e) {*  *e.printStackTrace();*  *}*  *return null;*  *}*    */\*\**  *\* Đóng kết nối*  *\*/*  *public static void closeConnection(){*  *try {*  *connection.close();*  *} catch (SQLException ex) {*  *throw new RuntimeException();*  *}*  *}*  *}* |

##### Lớp tiện ích JDBCMaster

Chứa các phương thức thực hiện các câu lệnh thao tác và truy vấn được thực hiện trên cơ sỡ dữ liệu master của SQLServer

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| --- |
| *package Home.helper;*  *import java.sql.CallableStatement;*  *import java.sql.Connection;*  *import java.sql.DriverManager;*  *import java.sql.PreparedStatement;*  *import java.sql.SQLException;*  *public class JDBCMaster {*  *private static String driver = "com.microsoft.sqlserver.jdbc.SQLServerDriver";*  *private static String dburl = "jdbc:sqlserver://localhost:1433;databaseName=master";*  *private static String username = "sa";*  *private static String password = "fpolyduan1";*  *private static Connection connection;*  *//Nạp driver*  *static {*  *try {*  *Class.forName(driver);*  *} catch (ClassNotFoundException ex) {*  *ex.printStackTrace();*  *}*  *}*    *public static CallableStatement callableStatement(String sql, Object... args) {*  *CallableStatement cstmt = null;*  *try {*  *connection = DriverManager.getConnection(dburl, username, password);*  *cstmt = connection.prepareCall(sql);*  *for (int i = 0; i < args.length; i++) {*  *cstmt.setObject(i + 1, args[i]);*  *}*  *} catch (SQLException ex) {*  *ex.printStackTrace();*  *}*  *return cstmt;*  *}*    */\*\**  *\* Đóng kết nối*  *\*/*  *public static void closeConnection(){*  *try {*  *connection.close();*  *} catch (SQLException ex) {*  *throw new RuntimeException();*  *}*  *}*  *}* |

##### Lớp tiện ích Share

|  |
| --- |
| *package Home.helper;*  *import Home.controller.NhanVienController;*  *import Home.controller.ToChucController;*  *import Home.model.TaiKhoan;*  *import javafx.scene.layout.BorderPane;*  *import javafx.stage.Stage;*  *public class Share {*    *public static Stage mainStage = null;*  *public static BorderPane mainPane;*  *public static NhanVienController nvController;*  *public static ToChucController tcController;*    */\*\**  *\* Đối tượng này chứa thông tin người sử dụng sau khi đăng nhập*  *\*/*  *public static TaiKhoan USER = null;*  */\*\**  *\* Đối tượng này chứa mã Phòng ban mà tài khoản quản lý*  *\*/*  *public static Object MAPB = null;*    */\*\**  *\* Xóa thông tin của người sử dụng khi có yêu cầu đăng xuất*  *\*/*  *public static void logOut() {*  *Share.USER = null;*  *}*  *}* |

##### Lớp tiện ích Picture

|  |
| --- |
| *package Home.helper;*  *import java.io.File;*  *import java.io.IOException;*  *import java.net.MalformedURLException;*  *import java.nio.file.Files;*  *import java.nio.file.Path;*  *import java.nio.file.Paths;*  *import java.nio.file.StandardCopyOption;*  *import javafx.scene.image.Image;*  *import javafx.scene.image.ImageView;*  *public class Picture {*  *public ImageView createImageView(String imageName) {*  *Image image = new Image(this.getClass().getResource("/Libraries/icon/" + imageName).toExternalForm());*  *ImageView imageView = new ImageView(image);*  *return imageView;*  *}*  *public Image createImage(String imageName) {*  *Image image = new Image(this.getClass().getResource("/Libraries/icon/" + imageName).toExternalForm());*  *return image;*  *}*  *public static boolean saveAvatar(File file) {*  *File dir = new File("avatar");*  *// Tạo thư mục nếu chưa tồn tại*  *if (!dir.exists()) {*  *dir.mkdirs();*  *}*  *File newFile = new File(dir, file.getName());*  *try {*  *// Copy vào thư mục logos (đè nếu đã tồn tại)*  *Path source = Paths.get(file.getAbsolutePath());*  *Path destination = Paths.get(newFile.getAbsolutePath());*  *Files.copy(source, destination, StandardCopyOption.REPLACE\_EXISTING);*  *return true;*  *} catch (IOException ex) {*  *return false;*  *}*  *}*  *public static Image readAvatar(String fileName) {*  *try {*  *if (fileName == null) {*  *return null;*  *}*  *File file = new File(new File("avatar"), fileName);*  *String localUrl = file.toURI().toURL().toExternalForm();*    *return new Image(localUrl);*  *} catch (MalformedURLException ex) {*  *ex.printStackTrace();*  *}*  *return null;*  *}*  *}* |

##### Lớp tiện ích CustomDialog

|  |
| --- |
| *package Home.helper;*  *import java.util.Optional;*  *import javafx.scene.control.Alert;*  *import javafx.scene.control.Alert.AlertType;*  *import javafx.scene.control.ButtonType;*  *import javafx.stage.Stage;*  *import javafx.stage.Window;*  *public class CustomDialog {*  *public static void showAlert(Alert.AlertType alertType, Window owner, String title, String message) {*  *Alert alert = new Alert(alertType);*  *Stage stage = (Stage) alert.getDialogPane().getScene().getWindow();*  *stage.getIcons().add(new Picture().createImage("caidat.png"));*  *alert.setTitle(title);*  *alert.setHeaderText(null);*  *alert.setContentText(message);*  *alert.initOwner(owner);*  *alert.showAndWait();*  *}*  *public static void showAlert(Alert.AlertType alertType, String message) {*  *Alert alert = new Alert(alertType);*  *Stage stage = (Stage) alert.getDialogPane().getScene().getWindow();*  *stage.getIcons().add(new Picture().createImage("caidat.png"));*  *alert.setTitle("Management System");*  *alert.setHeaderText(null);*  *alert.setContentText(message);*  *alert.initOwner(Share.mainStage);*  *alert.showAndWait();*  *}*  *public static boolean confirm(String message) {*  *Alert alert = new Alert(AlertType.CONFIRMATION);*  *Stage stage = (Stage) alert.getDialogPane().getScene().getWindow();*  *stage.getIcons().add(new Picture().createImage("caidat.png"));*  *alert.setTitle("Management System");*  *alert.setHeaderText(null);*  *alert.setContentText(message);*  *alert.initOwner(Share.mainStage);*  *Optional<ButtonType> result = alert.showAndWait();*  *return result.get() == ButtonType.OK;*  *}* |

##### Lớp tiện ích FormatNumber

|  |
| --- |
| *package Home.helper;*  *import java.text.DecimalFormat;*  *public class FormatNumber {*    *static String DECIMAL\_FORMAR;*  */\*\**  *\* Định dạng kiểu dữ liệu Double*  *\**  *\* @param num là số được truyền vào*  *\* @param pattern là chuỗi định dạng cho kiểu double*  *\* @return chuỗi đã được định dạng*  *\**  *\*/*  *public static String formatDouble(double num, String...pattern) {*  *if (pattern.length > 0) {*  *DECIMAL\_FORMAR = pattern[0];*  *} else {*  *DECIMAL\_FORMAR = "###,###.##";*  *}*    *DecimalFormat decimalFormat = new DecimalFormat(DECIMAL\_FORMAR);*  *return decimalFormat.format(num);*  *}*    *}* |

##### Lớp tiện ích Validate

|  |
| --- |
| *package Home.helper;*  *import com.jfoenix.validation.RequiredFieldValidator;*  *import javafx.scene.control.Alert;*  *import javafx.scene.control.ComboBox;*  *import javafx.scene.control.PasswordField;*  *import javafx.scene.control.TextField;*  *public class Validate {*  *//Hiện thông báo lỗi của JFX*  *public static RequiredFieldValidator createValidatorJFX(String errMessage) {*  *RequiredFieldValidator validator = new RequiredFieldValidator();*  *validator.setMessage(errMessage);*  *validator.setIcon(new Picture().createImageView("warning16px.png"));*  *return validator;*  *}*  *//Kiểm lỗi TextField not null*  *public static boolean isNull(TextField txt, String errMessage) {*  *try {*  *if (txt.getText().trim().equals("")) {*  *throw new Exception();*  *}*  *} catch (Exception e) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, errMessage);*  *txt.requestFocus();*  *return true;*  *}*  *return false;*  *}*  *//Kiểm lỗi PasswordField not null*  *public static boolean isNull(PasswordField txt, String errMessage) {*  *try {*  *if (txt.getText().trim().equals("")) {*  *throw new Exception();*  *}*  *} catch (Exception e) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, errMessage);*  *txt.requestFocus();*  *return true;*  *}*  *return false;*  *}*  *//Kiểm lỗi Combobox chưa được chọn giá trị*  *public static boolean isNotSelected(ComboBox cbo, String errMessage) {*  *try {*  *if (cbo.getSelectionModel().getSelectedIndex() == -1) {*  *throw new Exception();*  *}*  *} catch (Exception e) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, errMessage);*  *return true;*  *}*  *return false;*  *}*  *//Kiểm lỗi TextField không đúng với mẫu*  *public static boolean isNotMatches(TextField txt, String regex, String errMessage) {*  *try {*  *if (!txt.getText().matches(regex)) {*  *throw new Exception();*  *}*  *} catch (Exception e) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, errMessage);*  *txt.requestFocus();*  *return true;*  *}*  *return false;*  *}*    *//Kiểm lỗi xác nhận Password không giống với password*  *public static boolean isNotMatches(PasswordField pass, PasswordField pass2, String errMessage) {*  *try {*  *if (!pass2.getText().matches(pass.getText())) {*  *throw new Exception();*  *}*  *} catch (Exception e) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, errMessage);*  *pass2.requestFocus();*  *return true;*  *}*  *return false;*  *}*  *}* |

#### Viết mã cho các scene

##### Flash.fxml

**CÀI ĐẶT MÃ NGUỒN**

|  |
| --- |
| *<?xml version="1.0" encoding="UTF-8"?>*  *<?import javafx.geometry.\*?>*  *<?import javafx.scene.effect.\*?>*  *<?import java.lang.\*?>*  *<?import javafx.scene.control.\*?>*  *<?import javafx.scene.image.\*?>*  *<?import javafx.scene.layout.\*?>*  *<?import javafx.scene.control.ProgressIndicator?>*  *<?import javafx.scene.image.Image?>*  *<?import javafx.scene.image.ImageView?>*  *<?import javafx.scene.layout.AnchorPane?>*  *<?import javafx.scene.layout.HBox?>*  *<?import javafx.scene.layout.VBox?>*  *<AnchorPane prefHeight="350.0" prefWidth="500.0" stylesheets="@../../Libraries/CssMenu.css" xmlns="http://javafx.com/javafx/8" xmlns:fx="http://javafx.com/fxml/1" fx:controller="Home.controller.FlashController">*  *<children>*  *<VBox prefHeight="350.0" prefWidth="500.0" style="-fx-background-color: #3FA9F5;" AnchorPane.bottomAnchor="0.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="0.0">*  *<children>*  *<HBox prefHeight="290.0" prefWidth="500.0">*  *<children>*  *<ImageView fitHeight="293.0" fitWidth="500.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/logo500.png" />*  *</image>*  *</ImageView>*  *</children>*  *</HBox>*  *<ProgressIndicator fx:id="progressIndicator" maxHeight="80.0" maxWidth="536.0" prefHeight="70.0" prefWidth="500.0" progress="0.0">*  *<effect>*  *<ColorAdjust brightness="1.0" />*  *</effect>*  *<VBox.margin>*  *<Insets bottom="10.0" />*  *</VBox.margin>*  *</ProgressIndicator>*  *</children>*  *</VBox>*  *</children>*  *</AnchorPane>* |

##### Login.fxml

**CÀI ĐẶT MÃ NGUỒN**

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| --- |
| *<?xml version="1.0" encoding="UTF-8"?>*  *<?import com.jfoenix.controls.\*?>*  *<?import java.lang.\*?>*  *<?import javafx.scene.image.\*?>*  *<?import javafx.scene.layout.\*?>*  *<?import javafx.scene.text.\*?>*  *<?import com.jfoenix.controls.JFXButton?>*  *<?import com.jfoenix.controls.JFXPasswordField?>*  *<?import com.jfoenix.controls.JFXTextField?>*  *<?import java.lang.String?>*  *<?import javafx.scene.image.Image?>*  *<?import javafx.scene.image.ImageView?>*  *<?import javafx.scene.layout.AnchorPane?>*  *<?import javafx.scene.layout.Pane?>*  *<?import javafx.scene.layout.StackPane?>*  *<?import javafx.scene.layout.VBox?>*  *<?import javafx.scene.text.Font?>*  *<AnchorPane id="AnchorPane" prefHeight="600.0" prefWidth="800.0" stylesheets="@../../Libraries/CssMenu.css" xmlns="http://javafx.com/javafx/8" xmlns:fx="http://javafx.com/fxml/1" fx:controller="Home.controller.LoginController">*  *<children>*  *<StackPane layoutX="184.0" layoutY="100.0" prefHeight="600.0" prefWidth="800.0" AnchorPane.bottomAnchor="0.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="0.0">*  *<children>*  *<VBox prefHeight="571.0" prefWidth="800.0">*  *<children>*  *<Pane prefHeight="200.0" prefWidth="200.0" style="-fx-background-color: #2196f3;" />*  *<Pane prefHeight="400.0" prefWidth="800.0" style="-fx-background-color: #EDE7F6;" />*  *</children>*  *</VBox>*  *<AnchorPane prefHeight="586.0" prefWidth="800.0" style="-fx-background-color: transparent;">*  *<children>*  *<AnchorPane layoutX="166.0" layoutY="114.0" prefHeight="342.0" prefWidth="469.0" style="-fx-background-color: WHITE; -fx-effect: dropshadow(gaussian, rgb(0.0, 0.0, 0.0, 0.15), 6.0, 0.7, 0.0,1.5); -fx-background-radius: 4; -fx-border-radius: 4; -fx-padding: 8;" AnchorPane.leftAnchor="166.0" AnchorPane.rightAnchor="165.0" AnchorPane.topAnchor="114.0">*  *<children>*  *<ImageView fitHeight="110.0" fitWidth="110.0" layoutX="188.0" layoutY="8.0" pickOnBounds="true" preserveRatio="true" AnchorPane.leftAnchor="185.0" AnchorPane.rightAnchor="185.0" AnchorPane.topAnchor="6.0">*  *<image>*  *<Image url="@../../Libraries/icon/user128x128.png" />*  *</image>*  *</ImageView>*  *<JFXTextField fx:id="txtTaiKhoan" labelFloat="true" layoutX="75.0" layoutY="140.0" maxWidth="316.0" minWidth="233.0" onKeyPressed="#enterToLogin" prefHeight="31.0" prefWidth="316.0" promptText="Tài khoản" AnchorPane.leftAnchor="76.0" AnchorPane.rightAnchor="76.0" AnchorPane.topAnchor="130.0">*  *<font>*  *<Font size="14.0" />*  *</font>*  *</JFXTextField>*  *<JFXPasswordField fx:id="txtMatKhau" labelFloat="true" layoutX="75.0" layoutY="200.0" maxWidth="316.0" minWidth="235.0" onKeyPressed="#enterToLogin" prefHeight="31.0" prefWidth="316.0" promptText="Mật khẩu" AnchorPane.leftAnchor="76.0" AnchorPane.rightAnchor="76.0" AnchorPane.topAnchor="200.0">*  *<font>*  *<Font size="14.0" />*  *</font>*  *</JFXPasswordField>*  *<JFXButton fx:id="btnLogin" layoutX="121.0" layoutY="281.0" onAction="#login" prefHeight="34.0" prefWidth="126.0" text="Đăng nhập" textFill="WHITE" AnchorPane.bottomAnchor="21.0" AnchorPane.leftAnchor="95.0">*  *<font>*  *<Font size="14.0" />*  *</font>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-primary" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true" translateX="-5.0">*  *<image>*  *<Image url="@../../Libraries/icon/dangnhap.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton layoutX="283.0" layoutY="274.0" onAction="#exit" prefHeight="32.0" prefWidth="126.0" text="Thoát" textFill="WHITE" AnchorPane.bottomAnchor="21.0" AnchorPane.rightAnchor="95.0">*  *<font>*  *<Font size="14.0" />*  *</font>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-danger" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true" translateX="-5.0">*  *<image>*  *<Image url="@../../Libraries/icon/thoat.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *</children>*  *</AnchorPane>*  *</children>*  *</AnchorPane>*  *</children>*  *</StackPane>*  *</children>*  *</AnchorPane>* |

##### Main.fxml

**CÀI ĐẶT MÃ NGUỒN**

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| --- |
| *<?xml version="1.0" encoding="UTF-8"?>*  *<?import java.lang.String?>*  *<?import javafx.geometry.Insets?>*  *<?import javafx.scene.Cursor?>*  *<?import javafx.scene.control.Label?>*  *<?import javafx.scene.control.MenuButton?>*  *<?import javafx.scene.control.MenuItem?>*  *<?import javafx.scene.image.Image?>*  *<?import javafx.scene.image.ImageView?>*  *<?import javafx.scene.layout.BorderPane?>*  *<?import javafx.scene.layout.HBox?>*  *<?import javafx.scene.layout.VBox?>*  *<?import javafx.scene.text.Font?>*  *<BorderPane fx:id="borderPane" maxHeight="-Infinity" maxWidth="-Infinity" minHeight="-Infinity" minWidth="-Infinity" prefHeight="740.0" prefWidth="1366.0" stylesheets="@../../Libraries/CssMenu.css" xmlns="http://javafx.com/javafx/8.0.171" xmlns:fx="http://javafx.com/fxml/1" fx:controller="Home.controller.MainController">*  *<top>*  *<HBox fx:id="topPane" onMouseDragged="#movePanel" onMousePressed="#getCoorMouse" prefHeight="80.0" prefWidth="1366.0" style="-fx-background-color: #2a323c;" BorderPane.alignment="CENTER">*  *<children>*  *<HBox alignment="CENTER" prefHeight="80.0" prefWidth="200.0" style="-fx-background-color: #3FA9F5;">*  *<children>*  *<ImageView fitHeight="80.0" fitWidth="200.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/Untitled-1.png" />*  *</image>*  *</ImageView>*  *</children>*  *</HBox>*  *<HBox alignment="CENTER\_RIGHT" maxWidth="-Infinity" minWidth="-Infinity" prefHeight="80.0" prefWidth="167.0" translateX="1000.0">*  *<children>*  *<VBox prefHeight="80.0" prefWidth="148.0">*  *<HBox.margin>*  *<Insets left="968.0" />*  *</HBox.margin>*  *<children>*  *<HBox alignment="CENTER\_RIGHT" maxHeight="-Infinity" maxWidth="-Infinity" prefHeight="30.0" prefWidth="198.0">*  *<children>*  *<Label id="menu\_taikhoan" alignment="CENTER" contentDisplay="CENTER" onMouseClicked="#minimizeWindow" prefHeight="30.0" prefWidth="50.0" styleClass="hover\_buttonminize">*  *<font>*  *<Font size="14.0" />*  *</font>*  *<padding>*  *<Insets left="5.0" right="5.0" top="5.0" />*  *</padding>*  *<cursor>*  *<Cursor fx:constant="HAND" />*  *</cursor>*  *<graphic>*  *<ImageView id="btn\_minize" fitHeight="12.0" fitWidth="12.0" pickOnBounds="true" preserveRatio="true" translateY="-3.0">*  *<image>*  *<Image url="@../../Libraries/icon/minize.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</Label>*  *<Label id="btn\_close" alignment="CENTER" onMouseClicked="#closeWindow" prefHeight="30.0" prefWidth="50.0" styleClass="hover\_buttonclose">*  *<font>*  *<Font size="14.0" />*  *</font>*  *<padding>*  *<Insets left="5.0" right="5.0" top="5.0" />*  *</padding>*  *<cursor>*  *<Cursor fx:constant="HAND" />*  *</cursor>*  *<graphic>*  *<ImageView id="btn\_power" fitHeight="12.0" fitWidth="12.0" pickOnBounds="true" preserveRatio="true" translateY="-3.0">*  *<image>*  *<Image url="@../../Libraries/icon/close%20(2).png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</Label>*  *</children>*  *</HBox>*  *<MenuButton alignment="BOTTOM\_LEFT" contentDisplay="GRAPHIC\_ONLY" mnemonicParsing="false" prefHeight="42.0" prefWidth="3.0" style="-fx-background-color: transparent;">*  *<items>*  *<MenuItem mnemonicParsing="false" onAction="#setGUIDoimatkhau" text="ĐỔI MẬT KHẨU">*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true" translateX="7.0">*  *<image>*  *<Image url="@../../Libraries/icon/doimatkhau.png" />*  *</image>*  *</ImageView>*  *</graphic></MenuItem>*  *<MenuItem mnemonicParsing="false" text="ĐĂNG XUẤT" />*  *</items>*  *<graphic>*  *<ImageView fitHeight="32.0" fitWidth="32.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/user.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</MenuButton>*  *</children>*  *</VBox>*  *</children>*  *</HBox>*  *</children>*  *<BorderPane.margin>*  *<Insets />*  *</BorderPane.margin>*  *</HBox>*  *</top>*  *<left>*  *<VBox prefHeight="660.0" prefWidth="200.0" style="-fx-background-color: #2a323c;" BorderPane.alignment="CENTER">*  *<children>*  *<HBox layoutX="10.0" layoutY="286.0" prefHeight="34.0" prefWidth="200.0">*  *<children>*  *<Label id="menu\_trangchu" onMouseClicked="#setGUIHome" prefHeight="34.0" prefWidth="200.0" text="TRANG CHỦ">*  *<font>*  *<Font name="Arial" size="15.0" />*  *</font>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true" translateX="-10.0">*  *<image>*  *<Image url="@../../Libraries/icon/home.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<HBox.margin>*  *<Insets />*  *</HBox.margin>*  *<padding>*  *<Insets bottom="15.0" left="30.0" top="15.0" />*  *</padding>*  *<styleClass>*  *<String fx:value="hove\_border" />*  *<String fx:value="hover\_menu" />*  *</styleClass>*  *</Label>*  *</children>*  *<VBox.margin>*  *<Insets top="61.0" />*  *</VBox.margin>*  *</HBox>*  *<HBox prefHeight="37.0" prefWidth="200.0">*  *<children>*  *<Label id="menu\_nhanvien" onMouseClicked="#setGUINhanVien" prefHeight="34.0" prefWidth="200.0" text="NHÂN VIÊN">*  *<font>*  *<Font name="Arial" size="15.0" />*  *</font>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true" translateX="-10.0">*  *<image>*  *<Image url="@../../Libraries/icon/nhanvien.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<padding>*  *<Insets bottom="15.0" left="30.0" top="15.0" />*  *</padding>*  *<HBox.margin>*  *<Insets />*  *</HBox.margin>*  *<styleClass>*  *<String fx:value="hove\_border" />*  *<String fx:value="hover\_menu" />*  *</styleClass>*  *</Label>*  *</children>*  *</HBox>*  *<HBox layoutX="10.0" layoutY="94.0" prefHeight="34.0" prefWidth="200.0">*  *<children>*  *<Label id="menu\_phongban" onMouseClicked="#setGUIToChuc" prefHeight="34.0" prefWidth="200.0" text="TỔ CHỨC">*  *<font>*  *<Font name="Arial" size="15.0" />*  *</font>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true" translateX="-10.0">*  *<image>*  *<Image url="@../../Libraries/icon/tochuc.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<HBox.margin>*  *<Insets />*  *</HBox.margin>*  *<padding>*  *<Insets bottom="15.0" left="30.0" top="15.0" />*  *</padding>*  *<styleClass>*  *<String fx:value="hove\_border" />*  *<String fx:value="hover\_menu" />*  *</styleClass>*  *</Label>*  *</children>*  *</HBox>*  *<HBox layoutX="10.0" layoutY="350.0" prefHeight="34.0" prefWidth="200.0">*  *<children>*  *<Label id="menu\_chamcong" onMouseClicked="#setGUIChamCong" prefHeight="34.0" prefWidth="200.0" text="CHẤM CÔNG">*  *<font>*  *<Font name="Arial" size="15.0" />*  *</font>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true" translateX="-10.0">*  *<image>*  *<Image url="@../../Libraries/icon/chamcong.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<HBox.margin>*  *<Insets />*  *</HBox.margin>*  *<padding>*  *<Insets bottom="15.0" left="30.0" top="15.0" />*  *</padding>*  *<styleClass>*  *<String fx:value="hove\_border" />*  *<String fx:value="hover\_menu" />*  *</styleClass>*  *</Label>*  *</children>*  *</HBox>*  *<HBox layoutX="10.0" layoutY="222.0" prefHeight="34.0" prefWidth="200.0">*  *<children>*  *<Label id="menu\_bangluong" onMouseClicked="#setGUIBangLuong" prefHeight="34.0" prefWidth="200.0" text="BẢNG LƯƠNG">*  *<font>*  *<Font name="Arial" size="15.0" />*  *</font>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true" translateX="-10.0">*  *<image>*  *<Image url="@../../Libraries/icon/luong.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<HBox.margin>*  *<Insets />*  *</HBox.margin>*  *<padding>*  *<Insets bottom="15.0" left="30.0" top="15.0" />*  *</padding>*  *<styleClass>*  *<String fx:value="hove\_border" />*  *<String fx:value="hover\_menu" />*  *</styleClass>*  *</Label>*  *</children>*  *</HBox>*  *<Label id="lblChamcong" onMouseClicked="#setGUITaikhoan" prefHeight="34.0" prefWidth="200.0" text="TÀI KHOẢN">*  *<font>*  *<Font name="Arial" size="15.0" />*  *</font>*  *<graphic>*  *<ImageView id="menu\_taikhoan" fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true" translateX="-10.0">*  *<image>*  *<Image url="@../../Libraries/icon/taikhoan.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<padding>*  *<Insets bottom="15.0" left="30.0" top="15.0" />*  *</padding>*  *<styleClass>*  *<String fx:value="hove\_border" />*  *<String fx:value="hover\_menu" />*  *</styleClass>*  *</Label>*  *<HBox layoutX="10.0" layoutY="380.0" prefHeight="34.0" prefWidth="200.0">*  *<children>*  *<Label id="lblChamcong" onMouseClicked="#setGUIKhoiPhuc" prefHeight="34.0" prefWidth="200.0" text="KHÔI PHỤC">*  *<font>*  *<Font name="Arial" size="15.0" />*  *</font>*  *<graphic>*  *<ImageView id="menu\_taikhoan" fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true" translateX="-10.0">*  *<image>*  *<Image url="@../../Libraries/icon/khoiphuc.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<padding>*  *<Insets bottom="15.0" left="30.0" top="15.0" />*  *</padding>*  *<styleClass>*  *<String fx:value="hove\_border" />*  *<String fx:value="jfx-tab-pane" />*  *<String fx:value="hover\_menu" />*  *</styleClass>*  *<HBox.margin>*  *<Insets />*  *</HBox.margin>*  *</Label>*  *</children>*  *<VBox.margin>*  *<Insets top="70.0" />*  *</VBox.margin>*  *</HBox>*  *<Label id="menu\_gioithieu" prefHeight="34.0" prefWidth="200.0" text="GIỚI THIỆU">*  *<font>*  *<Font name="Arial" size="15.0" />*  *</font>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true" translateX="-10.0">*  *<image>*  *<Image url="@../../Libraries/icon/gioithieu.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<padding>*  *<Insets bottom="15.0" left="30.0" top="15.0" />*  *</padding>*  *<styleClass>*  *<String fx:value="hove\_border" />*  *<String fx:value="hover\_menu" />*  *</styleClass>*  *</Label>*  *<HBox prefHeight="34.0" prefWidth="200.0">*  *<children>*  *<Label id="lblChamcong" alignment="CENTER" onMouseClicked="#setGUIChamCong" prefHeight="34.0" prefWidth="152.0" style="-fx-text-fill: white;" text="Phiên bản 1.1">*  *<HBox.margin>*  *<Insets right="2.0" />*  *</HBox.margin></Label>*  *</children>*  *<VBox.margin>*  *<Insets top="52.0" />*  *</VBox.margin></HBox>*  *</children>*  *</VBox>*  *</left>*  *</BorderPane>* |

##### Home.fxml

**CÀI ĐẶT MÃ NGUỒN**

|  |
| --- |
| *<?xml version="1.0" encoding="UTF-8"?>*  *<?import com.jfoenix.controls.\*?>*  *<?import java.lang.\*?>*  *<?import javafx.geometry.\*?>*  *<?import javafx.scene.chart.\*?>*  *<?import javafx.scene.control.\*?>*  *<?import javafx.scene.image.\*?>*  *<?import javafx.scene.layout.\*?>*  *<?import javafx.scene.text.\*?>*  *<?import com.jfoenix.controls.JFXComboBox?>*  *<?import javafx.geometry.Insets?>*  *<?import javafx.scene.chart.CategoryAxis?>*  *<?import javafx.scene.chart.LineChart?>*  *<?import javafx.scene.chart.NumberAxis?>*  *<?import javafx.scene.control.Label?>*  *<?import javafx.scene.image.Image?>*  *<?import javafx.scene.image.ImageView?>*  *<?import javafx.scene.layout.AnchorPane?>*  *<?import javafx.scene.layout.HBox?>*  *<?import javafx.scene.layout.VBox?>*  *<?import javafx.scene.text.Font?>*  *<AnchorPane prefHeight="640.0" prefWidth="1166.0" style="-fx-background-color: #F0F0F0;" xmlns="http://javafx.com/javafx/8" xmlns:fx="http://javafx.com/fxml/1" fx:controller="Home.controller.HomeController">*  *<children>*  *<HBox alignment="CENTER" prefHeight="100.0" prefWidth="200.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="0.0">*  *<children>*  *<Label alignment="CENTER\_RIGHT" prefHeight="90.0" prefWidth="138.0" text="Năm" textFill="#007fff">*  *<font>*  *<Font name="System Bold" size="36.0" />*  *</font>*  *</Label>*  *<JFXComboBox fx:id="cboNam" focusColor="#f3f3f3" prefHeight="60.0" prefWidth="118.0" styleClass="comboxTitle" stylesheets="@../../Libraries/CssMenu.css" unFocusColor="#f3f3f3" />*  *</children>*  *</HBox>*  *<VBox layoutX="63.0" layoutY="42.0" prefHeight="155.0" prefWidth="310.0" style="-fx-background-color: #F3F3F3;" AnchorPane.leftAnchor="40.0" AnchorPane.topAnchor="100.0">*  *<children>*  *<HBox prefHeight="110.0" prefWidth="310.0" style="-fx-background-color: #e2e2e2;">*  *<children>*  *<Label fx:id="lblSLNhanVien" alignment="CENTER" prefHeight="110.0" prefWidth="200.0" text="0">*  *<font>*  *<Font name="System Bold" size="60.0" />*  *</font>*  *</Label>*  *<ImageView fitHeight="100.0" fitWidth="100.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/nhanvien128x128.png" />*  *</image>*  *<HBox.margin>*  *<Insets bottom="5.0" left="5.0" right="5.0" top="5.0" />*  *</HBox.margin>*  *</ImageView>*  *</children>*  *</HBox>*  *<HBox prefHeight="45.0" prefWidth="450.0" style="-fx-background-color: #3AA757;">*  *<children>*  *<Label alignment="CENTER" prefHeight="45.0" prefWidth="320.0" style="-fx-background-color: #019228;" text="Tổng số lượng nhân viên" textFill="WHITE">*  *<font>*  *<Font name="System Bold" size="20.0" />*  *</font>*  *</Label>*  *</children>*  *</HBox>*  *</children>*  *</VBox>*  *<VBox layoutX="413.0" layoutY="80.0" prefHeight="155.0" prefWidth="340.0" style="-fx-background-color: #F3F3F3;" AnchorPane.leftAnchor="413.0" AnchorPane.rightAnchor="413.0" AnchorPane.topAnchor="100.0">*  *<children>*  *<HBox prefHeight="110.0" prefWidth="320.0" style="-fx-background-color: #e2e2e2;">*  *<children>*  *<Label fx:id="lblSoGIoLamViec" alignment="CENTER" prefHeight="110.0" prefWidth="230.0" text="0">*  *<font>*  *<Font name="System Bold" size="60.0" />*  *</font>*  *</Label>*  *<ImageView fitHeight="100.0" fitWidth="100.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/three-oclock.png" />*  *</image>*  *<HBox.margin>*  *<Insets bottom="5.0" left="5.0" right="5.0" top="5.0" />*  *</HBox.margin>*  *</ImageView>*  *</children>*  *</HBox>*  *<HBox prefHeight="45.0" prefWidth="340.0" style="-fx-background-color: #F37700;">*  *<children>*  *<Label alignment="CENTER" contentDisplay="CENTER" prefHeight="45.0" prefWidth="320.0" text="Tổng số giờ làm việc" textFill="WHITE">*  *<font>*  *<Font name="System Bold" size="20.0" />*  *</font>*  *</Label>*  *</children>*  *</HBox>*  *</children>*  *</VBox>*  *<VBox layoutX="661.0" layoutY="67.0" prefHeight="155.0" prefWidth="310.0" style="-fx-background-color: #F3F3F3;" AnchorPane.rightAnchor="40.0" AnchorPane.topAnchor="100.0">*  *<children>*  *<HBox prefHeight="110.0" prefWidth="310.0" style="-fx-background-color: #e2e2e2;">*  *<children>*  *<Label fx:id="lblThuNhap" alignment="CENTER" prefHeight="110.0" prefWidth="200.0" text="0">*  *<font>*  *<Font name="System Bold" size="60.0" />*  *</font>*  *</Label>*  *<VBox prefHeight="97.0" prefWidth="100.0">*  *<children>*  *<Label fx:id="lblTienLuong1" alignment="CENTER" prefHeight="50.0" prefWidth="100.0" text="TỶ" textFill="#004082">*  *<font>*  *<Font name="System Bold" size="40.0" />*  *</font>*  *</Label>*  *<Label fx:id="lblTienLuong11" alignment="CENTER" prefHeight="50.0" prefWidth="150.0" text="VND" textFill="#004082">*  *<font>*  *<Font name="System Bold" size="23.0" />*  *</font>*  *</Label>*  *</children>*  *<HBox.margin>*  *<Insets bottom="5.0" left="5.0" right="5.0" top="5.0" />*  *</HBox.margin>*  *</VBox>*  *</children>*  *</HBox>*  *<HBox prefHeight="45.0" prefWidth="320.0" style="-fx-background-color: #004082;">*  *<children>*  *<Label alignment="CENTER" contentDisplay="CENTER" prefHeight="45.0" prefWidth="320.0" text="Tổng tiền lương" textFill="WHITE">*  *<font>*  *<Font name="System Bold" size="20.0" />*  *</font>*  *</Label>*  *</children>*  *</HBox>*  *</children>*  *</VBox>*  *<LineChart fx:id="chartTangTruongNV" layoutX="77.0" layoutY="313.0" minHeight="350.0" minWidth="1086.0" prefHeight="350.0" prefWidth="1086.0" AnchorPane.bottomAnchor="10.0" AnchorPane.leftAnchor="40.0" AnchorPane.rightAnchor="40.0" AnchorPane.topAnchor="280.0">*  *<xAxis>*  *<CategoryAxis side="BOTTOM" />*  *</xAxis>*  *<yAxis>*  *<NumberAxis side="LEFT" />*  *</yAxis>*  *</LineChart>*  *</children>*  *</AnchorPane>* |

##### NhanVien.fxml

**CÀI ĐẶT MÃ NGUỒN**

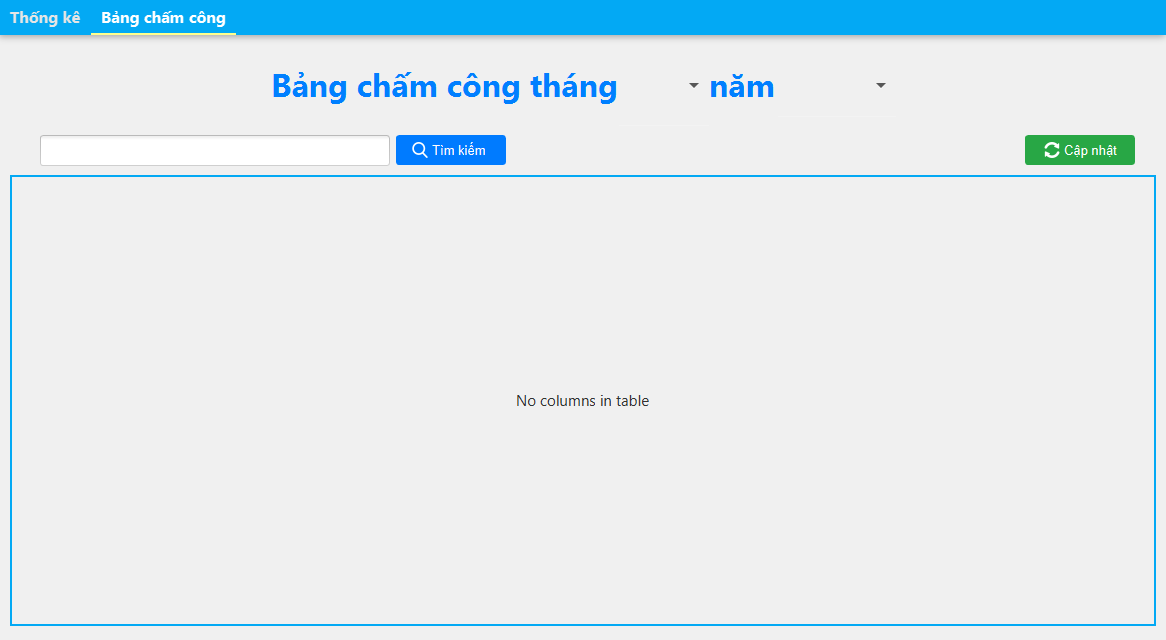
|  |
| --- |
| *<?xml version="1.0" encoding="UTF-8"?>*  *<?import com.jfoenix.controls.\*?>*  *<?import com.jfoenix.validation.\*?>*  *<?import java.lang.\*?>*  *<?import javafx.geometry.\*?>*  *<?import javafx.scene.\*?>*  *<?import javafx.scene.chart.\*?>*  *<?import javafx.scene.control.\*?>*  *<?import javafx.scene.image.\*?>*  *<?import javafx.scene.layout.\*?>*  *<?import javafx.scene.text.\*?>*  *<?import com.jfoenix.controls.JFXButton?>*  *<?import com.jfoenix.controls.JFXComboBox?>*  *<?import com.jfoenix.controls.JFXTabPane?>*  *<?import com.jfoenix.controls.JFXTextField?>*  *<?import com.jfoenix.validation.DoubleValidator?>*  *<?import java.lang.String?>*  *<?import javafx.geometry.Insets?>*  *<?import javafx.scene.Cursor?>*  *<?import javafx.scene.chart.BarChart?>*  *<?import javafx.scene.chart.CategoryAxis?>*  *<?import javafx.scene.chart.NumberAxis?>*  *<?import javafx.scene.chart.PieChart?>*  *<?import javafx.scene.control.DatePicker?>*  *<?import javafx.scene.control.Label?>*  *<?import javafx.scene.control.Tab?>*  *<?import javafx.scene.control.TableView?>*  *<?import javafx.scene.control.TextField?>*  *<?import javafx.scene.effect.DropShadow?>*  *<?import javafx.scene.image.Image?>*  *<?import javafx.scene.image.ImageView?>*  *<?import javafx.scene.layout.AnchorPane?>*  *<?import javafx.scene.layout.HBox?>*  *<?import javafx.scene.layout.VBox?>*  *<?import javafx.scene.text.Font?>*  *<AnchorPane fx:id="anchorpane" prefHeight="640.0" prefWidth="1166.0" style="-fx-background-color: #F0F0F0;" stylesheets="@../../Libraries/CssMenu.css" xmlns="http://javafx.com/javafx/8" xmlns:fx="http://javafx.com/fxml/1" fx:controller="Home.controller.NhanVienController">*  *<children>*  *<JFXTabPane fx:id="tabPane" stylesheets="@../../Libraries/CssMenu.css" AnchorPane.bottomAnchor="0.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="0.0">*  *<tabs>*  *<Tab text="Thống kê">*  *<content>*  *<AnchorPane minHeight="0.0" minWidth="0.0" prefHeight="180.0" prefWidth="200.0">*  *<children>*  *<HBox alignment="CENTER" prefHeight="100.0" prefWidth="200.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="0.0">*  *<children>*  *<Label text="Thống kê thành phần nhân viên" textFill="#007fff">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *</children>*  *</HBox>*  *<PieChart fx:id="chartTyLeNamNu" labelsVisible="false" layoutX="89.0" layoutY="100.0" prefHeight="445.0" prefWidth="366.0" title="Tỷ lệ giới tính" AnchorPane.bottomAnchor="40.0" AnchorPane.leftAnchor="89.0" AnchorPane.topAnchor="100.0" />*  *<BarChart fx:id="chartSLNhanVien" layoutX="512.0" layoutY="46.0" legendVisible="false" prefHeight="340.0" prefWidth="600.0" title="Số lượng nhân viên" AnchorPane.bottomAnchor="40.0" AnchorPane.rightAnchor="40.0" AnchorPane.topAnchor="100.0">*  *<xAxis>*  *<CategoryAxis side="BOTTOM" />*  *</xAxis>*  *<yAxis>*  *<NumberAxis side="LEFT" />*  *</yAxis>*  *</BarChart>*  *</children>*  *</AnchorPane>*  *</content>*  *</Tab>*  *<Tab text="Danh sách">*  *<content>*  *<AnchorPane minHeight="0.0" minWidth="0.0" prefHeight="180.0" prefWidth="200.0" stylesheets="@../../Libraries/CssMenu.css">*  *<children>*  *<TableView fx:id="tblNhanVien" layoutX="51.0" layoutY="84.0" onMouseClicked="#selectNhanVien" AnchorPane.bottomAnchor="10.0" AnchorPane.leftAnchor="10.0" AnchorPane.rightAnchor="10.0" AnchorPane.topAnchor="100.0">*  *<padding>*  *<Insets bottom="10.0" left="10.0" right="10.0" top="10.0" />*  *</padding>*  *</TableView>*  *<JFXButton layoutX="375.0" layoutY="45.0" prefHeight="30.0" prefWidth="110.0" styleClass="btn\_timkiem" text="Tìm kiếm " textFill="#fffefe">*  *<graphic>*  *<ImageView fitHeight="16.0" fitWidth="16.0" pickOnBounds="true" preserveRatio="true" scaleZ="0.0">*  *<image>*  *<Image url="@../../Libraries/icon/search.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<font>*  *<Font name="Arial" size="13.0" />*  *</font>*  *</JFXButton>*  *<TextField fx:id="txtTimKiem" layoutX="14.0" layoutY="45.0" prefHeight="30.0" prefWidth="350.0">*  *<font>*  *<Font name="Arial" size="12.0" />*  *</font></TextField>*  *</children>*  *</AnchorPane>*  *</content>*  *</Tab>*  *<Tab text="Thông tin nhân viên">*  *<content>*  *<AnchorPane minHeight="0.0" minWidth="0.0" prefHeight="180.0" prefWidth="200.0" stylesheets="@../../Libraries/CssMenu.css">*  *<children>*  *<ImageView fx:id="imgHinh" fitHeight="280.0" fitWidth="210.0" layoutX="39.0" layoutY="42.0" onMouseClicked="#chooseImage" pickOnBounds="true" AnchorPane.leftAnchor="30.0" AnchorPane.topAnchor="90.0">*  *<cursor>*  *<Cursor fx:constant="HAND" />*  *</cursor>*  *<image>*  *<Image url="@../../Libraries/icon/MaleEmployee.png" />*  *</image>*  *</ImageView>*  *<Label layoutX="271.0" layoutY="20.0" text="Thông tin nhân viên" textFill="#007fff" AnchorPane.leftAnchor="30.0" AnchorPane.topAnchor="30.0">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *<VBox layoutX="271.0" layoutY="82.0" prefHeight="390.0" prefWidth="260.0" AnchorPane.bottomAnchor="130.0" AnchorPane.leftAnchor="270.0" AnchorPane.topAnchor="90.0">*  *<children>*  *<JFXTextField fx:id="txtMaNV" labelFloat="true" prefHeight="30.0" promptText="Mã nhân viên">*  *<VBox.margin>*  *<Insets top="10.0" />*  *</VBox.margin>*  *<font>*  *<Font size="16.0" />*  *</font>*  *</JFXTextField>*  *<JFXTextField fx:id="txtHoTenNV" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Họ và tên">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="30.0" />*  *</VBox.margin>*  *</JFXTextField>*  *<JFXComboBox fx:id="cboGioiTinh" labelFloat="true" prefHeight="30.0" prefWidth="451.0" promptText="Giới tính">*  *<VBox.margin>*  *<Insets top="36.0" />*  *</VBox.margin>*  *</JFXComboBox>*  *<Label prefHeight="26.0" prefWidth="140.0" text="Ngày sinh">*  *<font>*  *<Font size="13.0" />*  *</font>*  *<VBox.margin>*  *<Insets bottom="1.0" top="12.0" />*  *</VBox.margin>*  *</Label>*  *<DatePicker fx:id="DPickerNgaySinh" prefWidth="450.0" />*  *<JFXTextField fx:id="txtSoCM" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Số CMND">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="30.0" />*  *</VBox.margin>*  *</JFXTextField>*  *</children>*  *</VBox>*  *<VBox layoutX="721.0" layoutY="95.0" prefHeight="385.0" prefWidth="260.0" AnchorPane.bottomAnchor="130.0" AnchorPane.rightAnchor="330.0" AnchorPane.topAnchor="90.0">*  *<children>*  *<JFXTextField fx:id="txtDienThoai" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Số điện thoại">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="10.0" />*  *</VBox.margin>*  *</JFXTextField>*  *<JFXTextField fx:id="txtEmail" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Email">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="30.0" />*  *</VBox.margin>*  *</JFXTextField>*  *<JFXTextField fx:id="txtDiaChi" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Địa chỉ">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="30.0" />*  *</VBox.margin>*  *</JFXTextField>*  *<JFXTextField fx:id="txtTrinhDoHV" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Trình độ học vấn">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="30.0" />*  *</VBox.margin>*  *</JFXTextField>*  *<JFXComboBox fx:id="cboTrangThai" labelFloat="true" prefHeight="30.0" prefWidth="451.0" promptText="Trạng thái">*  *<VBox.margin>*  *<Insets top="40.0" />*  *</VBox.margin>*  *</JFXComboBox>*  *</children>*  *</VBox>*  *<VBox prefHeight="317.0" prefWidth="260.0" AnchorPane.rightAnchor="30.0" AnchorPane.topAnchor="90.0">*  *<children>*  *<JFXTextField fx:id="txtMaHD" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Mã hợp đồng">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="10.0" />*  *</VBox.margin>*  *</JFXTextField>*  *<JFXComboBox fx:id="cboPhongBan" labelFloat="true" prefHeight="30.0" prefWidth="450.0" promptText="Phòng ban">*  *<VBox.margin>*  *<Insets top="36.0" />*  *</VBox.margin>*  *</JFXComboBox>*  *<JFXComboBox fx:id="cboChucVu" labelFloat="true" prefHeight="30.0" prefWidth="450.0" promptText="Chức vụ">*  *<VBox.margin>*  *<Insets top="36.0" />*  *</VBox.margin>*  *</JFXComboBox>*  *<JFXTextField fx:id="txtHeSoLuong" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Hệ số lương">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="30.0" />*  *</VBox.margin>*  *</JFXTextField>*  *<Label prefHeight="26.0" prefWidth="140.0" text="Ngày bắt đầu">*  *<font>*  *<Font size="14.0" />*  *</font>*  *<VBox.margin>*  *<Insets bottom="1.0" top="22.0" />*  *</VBox.margin>*  *</Label>*  *<DatePicker fx:id="DPickerNgayBatDau" prefWidth="450.0" />*  *<Label prefHeight="26.0" prefWidth="140.0" text="Ngày kết thúc">*  *<font>*  *<Font size="14.0" />*  *</font>*  *<VBox.margin>*  *<Insets bottom="1.0" top="12.0" />*  *</VBox.margin>*  *</Label>*  *<DatePicker fx:id="DPickerNgayKetThuc" prefWidth="450.0" />*  *</children>*  *</VBox>*  *<HBox alignment="CENTER" layoutX="520.0" layoutY="486.0" prefHeight="74.0" prefWidth="616.0" AnchorPane.bottomAnchor="0.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="500.0">*  *<children>*  *<JFXButton fx:id="btnThemNV" onAction="#insertNV" prefWidth="124.0" ripplerFill="WHITE" text="Thêm" textAlignment="CENTER" textFill="WHITE">*  *<font>*  *<Font name="System Bold" size="17.0" />*  *</font>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-primary" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/themmoiNV.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton fx:id="btnCapNhatNV" onAction="#updateNV" prefWidth="124.0" ripplerFill="WHITE" text="Cập nhật" textAlignment="CENTER">*  *<font>*  *<Font name="System Bold" size="17.0" />*  *</font>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-success" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/capnhatNV.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton fx:id="btnXoaNV" onAction="#deleteNV" prefWidth="124.0" ripplerFill="WHITE" text="Xóa" textAlignment="CENTER">*  *<font>*  *<Font name="System Bold" size="17.0" />*  *</font>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-danger" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/Xoanv.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton fx:id="btnTaoMoiNV" onAction="#newNV" prefWidth="124.0" ripplerFill="WHITE" text="Tạo mới" textAlignment="CENTER">*  *<font>*  *<Font name="System Bold" size="17.0" />*  *</font>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-info" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/taomoi24x24.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *</children>*  *</HBox>*  *</children>*  *</AnchorPane>*  *</content>*  *</Tab>*  *<Tab text="Thông tin nhân thân">*  *<content>*  *<AnchorPane minHeight="0.0" minWidth="0.0" prefHeight="180.0" prefWidth="200.0">*  *<children>*  *<Label layoutX="281.0" layoutY="30.0" text="Thông tin nhân thân" textFill="#007fff" AnchorPane.leftAnchor="30.0" AnchorPane.topAnchor="30.0">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *<VBox prefHeight="295.0" prefWidth="400.0" AnchorPane.bottomAnchor="200.0" AnchorPane.leftAnchor="50.0" AnchorPane.topAnchor="110.0">*  *<children>*  *<JFXTextField fx:id="txtMaNT" editable="false" focusTraversable="false" labelFloat="true" prefHeight="0.0" prefWidth="400.0" visible="false">*  *<font>*  *<Font size="1.0" />*  *</font>*  *</JFXTextField>*  *<JFXTextField fx:id="txtHoTenNT" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Họ và tên">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets />*  *</VBox.margin>*  *</JFXTextField>*  *<JFXTextField fx:id="txtNgheNghiepNT" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Nghề nghiệp">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="40.0" />*  *</VBox.margin>*  *</JFXTextField>*  *<JFXTextField fx:id="txtMoiQuanHeNT" labelFloat="true" prefHeight="30.0" promptText="Mối quan hệ">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="40.0" />*  *</VBox.margin>*  *</JFXTextField>*  *<JFXComboBox fx:id="cboGiamTruPhuThuoc" labelFloat="true" prefHeight="30.0" prefWidth="451.0" promptText="Giảm trừ phụ thuộc">*  *<VBox.margin>*  *<Insets top="40.0" />*  *</VBox.margin>*  *</JFXComboBox>*  *</children>*  *</VBox>*  *<TableView fx:id="tblNhanThan" layoutX="485.0" layoutY="77.0" onMouseClicked="#selectNhanThan" prefHeight="270.0" prefWidth="620.0" AnchorPane.rightAnchor="50.0" AnchorPane.topAnchor="110.0" />*  *<HBox alignment="CENTER" prefHeight="74.0" prefWidth="616.0" AnchorPane.bottomAnchor="0.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="500.0">*  *<children>*  *<JFXButton fx:id="btnThemNT" onAction="#insertNT" prefWidth="124.0" ripplerFill="WHITE" text="Thêm" textAlignment="CENTER" textFill="WHITE">*  *<font>*  *<Font name="System Bold" size="17.0" />*  *</font>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-primary" />*  *</styleClass>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/themmoiNV.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton fx:id="btnCapNhatNT" onAction="#updateNT" prefWidth="124.0" ripplerFill="#0476c3" text="Cập nhật" textAlignment="CENTER">*  *<font>*  *<Font name="System Bold" size="17.0" />*  *</font>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-success" />*  *</styleClass>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/capnhatNV.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton fx:id="btnXoaNT" onAction="#deleteNT" prefWidth="124.0" ripplerFill="#0476c3" text="Xóa" textAlignment="CENTER">*  *<font>*  *<Font name="System Bold" size="17.0" />*  *</font>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-danger" />*  *</styleClass>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/Xoanv.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton fx:id="btnTaoMoiNT" onAction="#newNT" prefWidth="124.0" ripplerFill="#0476c3" text="Tạo mới" textAlignment="CENTER">*  *<font>*  *<Font name="System Bold" size="17.0" />*  *</font>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-info" />*  *</styleClass>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/taomoi24x24.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *</children>*  *</HBox>*  *</children>*  *</AnchorPane>*  *</content>*  *</Tab>*  *</tabs>*  *</JFXTabPane>*  *<DoubleValidator />*  *</children>*  *</AnchorPane>* |

##### ToChuc.fxml

**CÀI ĐẶT MÃ NGUỒN**

|  |
| --- |
| *<?xml version="1.0" encoding="UTF-8"?>*  *<?import com.jfoenix.controls.JFXButton?>*  *<?import com.jfoenix.controls.JFXTextField?>*  *<?import java.lang.String?>*  *<?import javafx.geometry.Insets?>*  *<?import javafx.scene.control.Label?>*  *<?import javafx.scene.control.TableView?>*  *<?import javafx.scene.image.Image?>*  *<?import javafx.scene.image.ImageView?>*  *<?import javafx.scene.layout.AnchorPane?>*  *<?import javafx.scene.layout.HBox?>*  *<?import javafx.scene.layout.VBox?>*  *<?import javafx.scene.text.Font?>*  *<AnchorPane prefHeight="672.0" prefWidth="1166.0" style="-fx-background-color: #F0F0F0;" stylesheets="@../../Libraries/CssMenu.css" xmlns="http://javafx.com/javafx/8.0.171" xmlns:fx="http://javafx.com/fxml/1" fx:controller="Home.controller.ToChucController">*  *<children>*  *<HBox alignment="CENTER" prefHeight="100.0" prefWidth="200.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="0.0">*  *<children>*  *<Label alignment="CENTER" prefHeight="50.0" prefWidth="583.0" text="Phòng ban" textAlignment="CENTER" textFill="#007fff">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *<Label alignment="CENTER" prefHeight="50.0" prefWidth="583.0" text="Chức vụ" textFill="#007fff">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *</children>*  *</HBox>*  *<VBox layoutX="10.0" layoutY="10.0" prefHeight="148.0" prefWidth="500.0" AnchorPane.leftAnchor="40.0" AnchorPane.topAnchor="130.0">*  *<children>*  *<JFXTextField fx:id="txtMaPB" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Mã phòng ban">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets />*  *</VBox.margin>*  *</JFXTextField>*  *<JFXTextField fx:id="txtTenPB" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Tên phòng ban">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="40.0" />*  *</VBox.margin>*  *</JFXTextField>*  *</children>*  *</VBox>*  *<TableView fx:id="tblPhongBan" layoutX="40.0" layoutY="404.0" onMouseClicked="#selectPhongBan" prefHeight="237.0" prefWidth="500.0" AnchorPane.bottomAnchor="31.0" AnchorPane.leftAnchor="40.0" />*  *<VBox layoutX="20.0" layoutY="20.0" prefHeight="231.0" prefWidth="500.0" AnchorPane.rightAnchor="40.0" AnchorPane.topAnchor="130.0">*  *<children>*  *<JFXTextField fx:id="txtMaCV" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Mã chức vụ">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets />*  *</VBox.margin>*  *</JFXTextField>*  *<JFXTextField fx:id="txtTenCV" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Tên chức vụ">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="40.0" />*  *</VBox.margin>*  *</JFXTextField>*  *<JFXTextField fx:id="txtPhuCap" focusTraversable="false" labelFloat="true" prefHeight="30.0" promptText="Phụ cấp">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="40.0" />*  *</VBox.margin>*  *</JFXTextField>*  *</children>*  *</VBox>*  *<TableView fx:id="tblChucVu" layoutX="626.0" layoutY="404.0" onMouseClicked="#selectChucVu" prefHeight="237.0" prefWidth="500.0" AnchorPane.bottomAnchor="31.0" AnchorPane.rightAnchor="40.0" />*  *<HBox alignment="CENTER\_RIGHT" layoutX="93.0" layoutY="345.0" prefHeight="50.0" prefWidth="395.0" AnchorPane.bottomAnchor="277.0" AnchorPane.leftAnchor="93.0">*  *<children>*  *<JFXButton fx:id="btnInsertPB" onAction="#insertPB" prefHeight="30.0" prefWidth="120.0" ripplerFill="WHITE" text="Thêm" textAlignment="CENTER" textFill="WHITE">*  *<font>*  *<Font name="System Bold" size="15.0" />*  *</font>*  *<graphic>*  *<ImageView fitHeight="16.0" fitWidth="16.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/taomoi.png" />*  *</image></ImageView>*  *</graphic>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-primary" />*  *</styleClass>*  *<HBox.margin>*  *<Insets left="5.0" right="5.0" />*  *</HBox.margin>*  *</JFXButton>*  *<JFXButton fx:id="btnUpdatePB" onAction="#updatePB" prefHeight="30.0" prefWidth="120.0" ripplerFill="WHITE" text="Cập nhật" textAlignment="CENTER">*  *<font>*  *<Font name="System Bold" size="15.0" />*  *</font>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-success" />*  *</styleClass>*  *<HBox.margin>*  *<Insets left="5.0" right="5.0" />*  *</HBox.margin>*  *<graphic>*  *<ImageView fitHeight="16.0" fitWidth="16.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/capnhat.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton fx:id="btnNewPB" onAction="#newPB" prefHeight="30.0" prefWidth="120.0" ripplerFill="WHITE" text="Tạo mới" textAlignment="CENTER">*  *<font>*  *<Font name="System Bold" size="15.0" />*  *</font>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-info" />*  *</styleClass>*  *<HBox.margin>*  *<Insets left="5.0" right="5.0" />*  *</HBox.margin>*  *<graphic>*  *<ImageView fitHeight="16.0" fitWidth="16.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/taomoi16x16.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *</children>*  *</HBox>*  *<HBox alignment="CENTER\_RIGHT" layoutX="679.0" layoutY="346.0" prefHeight="50.0" prefWidth="395.0" AnchorPane.bottomAnchor="276.0" AnchorPane.rightAnchor="92.0">*  *<children>*  *<JFXButton fx:id="btnInsertCV" onAction="#insertCV" prefHeight="30.0" prefWidth="120.0" ripplerFill="WHITE" text="Thêm" textAlignment="CENTER" textFill="WHITE">*  *<font>*  *<Font name="System Bold" size="15.0" />*  *</font>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-primary" />*  *</styleClass>*  *<HBox.margin>*  *<Insets left="5.0" right="5.0" />*  *</HBox.margin>*  *<graphic>*  *<ImageView fitHeight="16.0" fitWidth="16.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/taomoi.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton fx:id="btnUpdateCV" onAction="#updateCV" prefHeight="30.0" prefWidth="120.0" ripplerFill="WHITE" text="Cập nhật" textAlignment="CENTER">*  *<font>*  *<Font name="System Bold" size="15.0" />*  *</font>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-success" />*  *</styleClass>*  *<HBox.margin>*  *<Insets left="5.0" right="5.0" />*  *</HBox.margin>*  *<graphic>*  *<ImageView fitHeight="16.0" fitWidth="16.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/capnhat.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton fx:id="btnNewCV" onAction="#newCV" prefHeight="30.0" prefWidth="120.0" ripplerFill="WHITE" text="Tạo mới" textAlignment="CENTER">*  *<font>*  *<Font name="System Bold" size="15.0" />*  *</font>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-info" />*  *</styleClass>*  *<HBox.margin>*  *<Insets left="5.0" right="5.0" />*  *</HBox.margin>*  *<graphic>*  *<ImageView fitHeight="16.0" fitWidth="16.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/taomoi16x16.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *</children>*  *</HBox>*  *</children>*  *</AnchorPane>* |

##### ChamCong.fxml

**CÀI ĐẶT MÃ NGUỒN**

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| *<?xml version="1.0" encoding="UTF-8"?>*  *<?import java.lang.\*?>*  *<?import javafx.scene.chart.\*?>*  *<?import javafx.scene.control.\*?>*  *<?import javafx.scene.image.\*?>*  *<?import javafx.scene.layout.\*?>*  *<?import javafx.scene.text.\*?>*  *<?import com.jfoenix.controls.JFXButton?>*  *<?import com.jfoenix.controls.JFXComboBox?>*  *<?import com.jfoenix.controls.JFXTabPane?>*  *<?import java.lang.String?>*  *<?import javafx.scene.chart.PieChart?>*  *<?import javafx.scene.control.Label?>*  *<?import javafx.scene.control.Tab?>*  *<?import javafx.scene.control.TableView?>*  *<?import javafx.scene.control.TextField?>*  *<?import javafx.scene.image.Image?>*  *<?import javafx.scene.image.ImageView?>*  *<?import javafx.scene.layout.AnchorPane?>*  *<?import javafx.scene.layout.HBox?>*  *<?import javafx.scene.text.Font?>*  *<AnchorPane prefHeight="640.0" prefWidth="1166.0" style="-fx-background-color: #F0F0F0;" stylesheets="@../../Libraries/CssMenu.css" xmlns="http://javafx.com/javafx/8" xmlns:fx="http://javafx.com/fxml/1" fx:controller="Home.controller.ChamCongController">*  *<children>*  *<JFXTabPane AnchorPane.bottomAnchor="0.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="0.0">*  *<tabs>*  *<Tab text="Thống kê">*  *<content>*  *<AnchorPane minHeight="0.0" minWidth="0.0" prefHeight="180.0" prefWidth="200.0">*  *<children>*  *<HBox alignment="CENTER" prefHeight="100.0" prefWidth="1166.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="0.0">*  *<children>*  *<Label prefHeight="47.0" prefWidth="418.0" text="Thống kê chuyên cần tháng" textFill="#007fff">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *<JFXComboBox fx:id="cboThang1" focusColor="#f3f3f3" prefHeight="78.0" prefWidth="90.0" styleClass="comboxTitle" unFocusColor="#f3f3f3" />*  *<Label prefHeight="47.0" prefWidth="66.0" text="năm" textFill="#007fff">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *<JFXComboBox fx:id="cboNam1" focusColor="#f3f3f3" prefHeight="60.0" prefWidth="118.0" styleClass="comboxTitle" unFocusColor="#f3f3f3" />*  *</children>*  *</HBox>*  *<PieChart fx:id="chuyenCanChart" labelsVisible="false" layoutX="52.0" layoutY="120.0" title="Biểu đồ tỷ lệ nhân viên đi làm đầy đủ" />*  *<PieChart fx:id="soNgayLamViecChart" labelsVisible="false" layoutX="616.0" layoutY="120.0" title="Biểu đồ tỷ lệ ngày làm việc" />*  *</children>*  *</AnchorPane>*  *</content>*  *</Tab>*  *<Tab text="Bảng chấm công">*  *<content>*  *<AnchorPane>*  *<children>*  *<HBox alignment="CENTER" prefHeight="100.0" prefWidth="1166.0">*  *<children>*  *<Label prefHeight="47.0" prefWidth="348.0" text="Bảng chấm công tháng" textFill="#007fff">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *<JFXComboBox fx:id="cboThang2" focusColor="#f3f3f3" prefHeight="78.0" prefWidth="90.0" styleClass="comboxTitle" unFocusColor="#f3f3f3" />*  *<Label prefHeight="47.0" prefWidth="69.0" text="năm" textFill="#007fff">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *<JFXComboBox fx:id="cboNam2" focusColor="#f3f3f3" prefHeight="60.0" prefWidth="118.0" styleClass="comboxTitle" unFocusColor="#f3f3f3" />*  *</children>*  *</HBox>*  *<JFXButton layoutX="396.0" layoutY="100.0" prefHeight="30.0" prefWidth="110.0" styleClass="btn\_timkiem" text="Tìm kiếm " textFill="#fffefe" AnchorPane.leftAnchor="396.0" AnchorPane.topAnchor="100.0">*  *<graphic>*  *<ImageView fitHeight="16.0" fitWidth="16.0" pickOnBounds="true" preserveRatio="true" scaleZ="0.0">*  *<image>*  *<Image url="@../../Libraries/icon/search.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<font>*  *<Font name="Arial" size="13.0" />*  *</font>*  *</JFXButton>*  *<TextField layoutX="14.0" layoutY="100.0" prefHeight="30.0" prefWidth="350.0" AnchorPane.leftAnchor="40.0" AnchorPane.topAnchor="100.0" />*  *<TableView fx:id="tblChamCong" editable="true" layoutX="10.0" layoutY="140.0" prefHeight="451.0" prefWidth="1146.0" AnchorPane.bottomAnchor="14.0" AnchorPane.leftAnchor="10.0" AnchorPane.rightAnchor="10.0" AnchorPane.topAnchor="140.0" />*  *<JFXButton layoutX="1025.0" layoutY="100.0" onAction="#update" prefHeight="30.0" prefWidth="110.0" text="Cập nhật" textFill="#fffefe" AnchorPane.rightAnchor="31.0" AnchorPane.topAnchor="100.0">*  *<font>*  *<Font name="Arial" size="13.0" />*  *</font>*  *<graphic>*  *<ImageView fitHeight="16.0" fitWidth="16.0" pickOnBounds="true" preserveRatio="true" scaleZ="0.0">*  *<image>*  *<Image url="@../../Libraries/icon/capnhat.png" />*  *</image></ImageView>*  *</graphic>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-success" />*  *</styleClass>*  *</JFXButton>*  *</children>*  *</AnchorPane>*  *</content>*  *</Tab>*  *</tabs>*  *</JFXTabPane>*  *</children>*  *</AnchorPane>* |

##### BangLuong.fxml

**CÀI ĐẶT MÃ NGUỒN**

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| *<?xml version="1.0" encoding="UTF-8"?>*  *<?import java.lang.\*?>*  *<?import javafx.scene.chart.\*?>*  *<?import javafx.scene.control.\*?>*  *<?import javafx.scene.image.\*?>*  *<?import javafx.scene.layout.\*?>*  *<?import javafx.scene.text.\*?>*  *<?import com.jfoenix.controls.JFXButton?>*  *<?import com.jfoenix.controls.JFXComboBox?>*  *<?import com.jfoenix.controls.JFXTabPane?>*  *<?import java.lang.String?>*  *<?import javafx.scene.chart.BarChart?>*  *<?import javafx.scene.chart.CategoryAxis?>*  *<?import javafx.scene.chart.NumberAxis?>*  *<?import javafx.scene.control.Label?>*  *<?import javafx.scene.control.Tab?>*  *<?import javafx.scene.control.TableView?>*  *<?import javafx.scene.control.TextField?>*  *<?import javafx.scene.image.Image?>*  *<?import javafx.scene.image.ImageView?>*  *<?import javafx.scene.layout.AnchorPane?>*  *<?import javafx.scene.layout.HBox?>*  *<?import javafx.scene.text.Font?>*  *<AnchorPane prefHeight="640.0" prefWidth="1166.0" style="-fx-background-color: #F4F0F0;" stylesheets="@../../Libraries/CssMenu.css" xmlns="http://javafx.com/javafx/8" xmlns:fx="http://javafx.com/fxml/1" fx:controller="Home.controller.BangLuongController">*  *<children>*  *<JFXTabPane AnchorPane.bottomAnchor="0.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="0.0">*  *<tabs>*  *<Tab text="Thống kê">*  *<content>*  *<AnchorPane minHeight="0.0" minWidth="0.0" prefHeight="180.0" prefWidth="200.0">*  *<children>*  *<HBox alignment="CENTER" prefHeight="100.0" prefWidth="1166.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="0.0">*  *<children>*  *<Label alignment="CENTER\_RIGHT" contentDisplay="CENTER" prefHeight="47.0" prefWidth="406.0" text="Thống kê tiền lương tháng" textFill="#007fff">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *<JFXComboBox fx:id="cboThang1" focusColor="#f3f3f3" prefHeight="78.0" prefWidth="90.0" styleClass="comboxTitle" unFocusColor="#f3f3f3" />*  *<Label prefHeight="47.0" prefWidth="66.0" text="năm" textFill="#007fff">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *<JFXComboBox fx:id="cboNam1" focusColor="#f3f3f3" prefHeight="60.0" prefWidth="118.0" styleClass="comboxTitle" unFocusColor="#f3f3f3" />*  *</children>*  *</HBox>*  *<BarChart fx:id="chartPhanHoaTienLuong" layoutX="101.0" layoutY="134.0" legendVisible="false" prefHeight="485.0" prefWidth="396.0" title="Biểu đồ phân hóa tiền lương" AnchorPane.bottomAnchor="20.0" AnchorPane.leftAnchor="40.0" AnchorPane.topAnchor="100.0">*  *<xAxis>*  *<CategoryAxis prefHeight="40.0" prefWidth="423.0" side="BOTTOM" />*  *</xAxis>*  *<yAxis>*  *<NumberAxis label="Tiền lương" prefHeight="384.0" prefWidth="97.0" side="LEFT" />*  *</yAxis>*  *</BarChart>*  *<BarChart fx:id="chartTienLuongTheoPhongBan" layoutX="35.0" layoutY="141.0" legendVisible="false" prefHeight="450.0" prefWidth="644.0" title="Biểu đồ tiền lương theo phòng ban" AnchorPane.bottomAnchor="20.0" AnchorPane.rightAnchor="40.0" AnchorPane.topAnchor="100.0">*  *<xAxis>*  *<CategoryAxis prefHeight="40.0" prefWidth="500.0" side="BOTTOM" />*  *</xAxis>*  *<yAxis>*  *<NumberAxis label="Tiền lương" prefHeight="314.0" prefWidth="114.0" side="LEFT" />*  *</yAxis>*  *</BarChart>*  *</children>*  *</AnchorPane>*  *</content>*  *</Tab>*  *<Tab text="Bảng lương">*  *<content>*  *<AnchorPane>*  *<children>*  *<JFXButton layoutX="374.0" layoutY="100.0" prefHeight="30.0" prefWidth="110.0" styleClass="btn\_timkiem" text="Tìm kiếm " textFill="#fffefe" AnchorPane.leftAnchor="374.0" AnchorPane.topAnchor="100.0">*  *<graphic>*  *<ImageView fitHeight="16.0" fitWidth="16.0" pickOnBounds="true" preserveRatio="true" scaleZ="0.0">*  *<image>*  *<Image url="@../../Libraries/icon/search.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<font>*  *<Font name="Arial" size="13.0" />*  *</font>*  *</JFXButton>*  *<TextField layoutX="14.0" layoutY="100.0" prefHeight="30.0" prefWidth="350.0" AnchorPane.leftAnchor="14.0" AnchorPane.topAnchor="100.0" />*  *<HBox alignment="CENTER" prefHeight="88.0" prefWidth="1166.0">*  *<children>*  *<Label alignment="CENTER\_RIGHT" contentDisplay="CENTER" prefHeight="47.0" prefWidth="406.0" text="Thống kê tiền lương tháng" textFill="#007fff">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *<JFXComboBox fx:id="cboThang2" focusColor="#f3f3f3" prefHeight="78.0" prefWidth="90.0" styleClass="comboxTitle" unFocusColor="#f3f3f3" />*  *<Label prefHeight="47.0" prefWidth="66.0" text="năm" textFill="#007fff">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *<JFXComboBox fx:id="cboNam2" focusColor="#f3f3f3" prefHeight="60.0" prefWidth="118.0" styleClass="comboxTitle" unFocusColor="#f3f3f3" />*  *</children>*  *</HBox>*  *<TableView fx:id="tblBangLuong" editable="true" layoutX="10.0" layoutY="143.0" prefHeight="442.0" prefWidth="1146.0" AnchorPane.bottomAnchor="20.0" AnchorPane.leftAnchor="10.0" AnchorPane.rightAnchor="10.0" AnchorPane.topAnchor="143.0" />*  *<JFXButton fx:id="btnNew" layoutX="388.0" layoutY="55.0" onAction="#insert" prefHeight="30.0" prefWidth="110.0" text="Tạo mới" textFill="#fffefe" AnchorPane.rightAnchor="130.0" AnchorPane.topAnchor="100.0">*  *<font>*  *<Font name="Arial" size="13.0" />*  *</font>*  *<graphic>*  *<ImageView fitHeight="16.0" fitWidth="16.0" pickOnBounds="true" preserveRatio="true" scaleZ="0.0">*  *<image>*  *<Image url="@../../Libraries/icon/taomoi.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-primary" />*  *</styleClass>*  *</JFXButton>*  *<JFXButton layoutX="398.0" layoutY="65.0" onAction="#update" prefHeight="30.0" prefWidth="110.0" text="Cập nhật" textFill="#fffefe" AnchorPane.rightAnchor="10.0" AnchorPane.topAnchor="100.0">*  *<font>*  *<Font name="Arial" size="13.0" />*  *</font>*  *<graphic>*  *<ImageView fitHeight="16.0" fitWidth="16.0" pickOnBounds="true" preserveRatio="true" scaleZ="0.0">*  *<image>*  *<Image url="@../../Libraries/icon/capnhat.png" />*  *</image></ImageView>*  *</graphic>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-success" />*  *</styleClass>*  *</JFXButton>*  *</children>*  *</AnchorPane>*  *</content>*  *</Tab>*  *</tabs>*  *</JFXTabPane>*  *</children>*  *</AnchorPane>* |

##### TaiKhoan.fxml

**CÀI ĐẶT MÃ NGUỒN**

|  |
| --- |
| *<?xml version="1.0" encoding="UTF-8"?>*  *<?import com.jfoenix.controls.JFXButton?>*  *<?import com.jfoenix.controls.JFXComboBox?>*  *<?import com.jfoenix.controls.JFXPasswordField?>*  *<?import com.jfoenix.controls.JFXTextField?>*  *<?import java.lang.String?>*  *<?import javafx.geometry.Insets?>*  *<?import javafx.scene.control.Label?>*  *<?import javafx.scene.control.TableView?>*  *<?import javafx.scene.image.Image?>*  *<?import javafx.scene.image.ImageView?>*  *<?import javafx.scene.layout.AnchorPane?>*  *<?import javafx.scene.layout.HBox?>*  *<?import javafx.scene.layout.VBox?>*  *<?import javafx.scene.text.Font?>*  *<AnchorPane id="AnchorPane" prefHeight="640.0" prefWidth="1166.0" stylesheets="@../../Libraries/CssMenu.css" xmlns="http://javafx.com/javafx/8.0.171" xmlns:fx="http://javafx.com/fxml/1" fx:controller="Home.controller.TaiKhoanController">*  *<children>*  *<Label layoutX="45.0" layoutY="67.0" prefHeight="54.0" prefWidth="159.0" text="Tài khoản" textFill="#007fff" AnchorPane.leftAnchor="30.0" AnchorPane.topAnchor="30.0">*  *<font>*  *<Font name="System Bold" size="32.0" />*  *</font>*  *</Label>*  *<VBox layoutX="30.0" layoutY="84.0" prefHeight="400.0" prefWidth="400.0" AnchorPane.leftAnchor="50.0" AnchorPane.topAnchor="120.0">*  *<children>*  *<JFXTextField fx:id="txtTaikhoan" labelFloat="true" prefHeight="30.0" prefWidth="400.0" promptText="Tài khoản">*  *<font>*  *<Font size="16.0" />*  *</font>*  *</JFXTextField>*  *<JFXPasswordField fx:id="txtMatKhau" labelFloat="true" prefHeight="30.0" prefWidth="400.0" promptText="Mật khẩu">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="40.0" />*  *</VBox.margin>*  *</JFXPasswordField>*  *<JFXPasswordField fx:id="txtXacNhanMatKhau" labelFloat="true" prefHeight="30.0" prefWidth="400.0" promptText="Xác nhận mật khẩu">*  *<font>*  *<Font size="16.0" />*  *</font>*  *<VBox.margin>*  *<Insets top="40.0" />*  *</VBox.margin>*  *</JFXPasswordField>*  *<JFXComboBox fx:id="cboPhongBan" labelFloat="true" prefHeight="30.0" prefWidth="400.0" promptText="Phòng ban">*  *<VBox.margin>*  *<Insets top="40.0" />*  *</VBox.margin>*  *</JFXComboBox>*  *<JFXComboBox fx:id="cboNhanVien" prefHeight="30.0" prefWidth="400.0" promptText="Nhân viên">*  *<VBox.margin>*  *<Insets top="40.0" />*  *</VBox.margin>*  *</JFXComboBox>*  *</children>*  *</VBox>*  *<TableView fx:id="tblTaiKhoan" layoutX="405.0" layoutY="110.0" onMouseClicked="#selectTaiKhoan" prefHeight="300.0" prefWidth="600.0" AnchorPane.rightAnchor="50.0" AnchorPane.topAnchor="160.0" />*  *<HBox alignment="CENTER" layoutY="545.0" prefHeight="96.0" prefWidth="1166.0">*  *<children>*  *<JFXButton fx:id="btnThem" onAction="#InsertTK" prefWidth="124.0" ripplerFill="WHITE" text="Thêm" textAlignment="CENTER" textFill="WHITE">*  *<font>*  *<Font name="System Bold" size="17.0" />*  *</font>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-primary" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/themmoiNV.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton fx:id="btnCapNhat" onAction="#updateTK" prefWidth="124.0" ripplerFill="WHITE" text="Cập nhật" textAlignment="CENTER">*  *<font>*  *<Font name="System Bold" size="17.0" />*  *</font>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-success" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/capnhatNV.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton fx:id="btnXoa" onAction="#DeleteTK" prefWidth="124.0" ripplerFill="WHITE" text="Xóa" textAlignment="CENTER">*  *<font>*  *<Font name="System Bold" size="17.0" />*  *</font>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-danger" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/Xoanv.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton fx:id="btnTaoMoi" onAction="#clearTK" prefWidth="124.0" ripplerFill="WHITE" text="Tạo mới" textAlignment="CENTER" translateX="1.0">*  *<font>*  *<Font name="System Bold" size="17.0" />*  *</font>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-info" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/taomoi.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *</children>*  *</HBox>*  *</children>*  *</AnchorPane>* |

##### KhoiPhuc.fxml

**CÀI ĐẶT MÃ NGUỒN**

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| --- |
| *<?xml version="1.0" encoding="UTF-8"?>*  *<?import javafx.geometry.\*?>*  *<?import com.jfoenix.controls.\*?>*  *<?import java.lang.\*?>*  *<?import javafx.scene.control.\*?>*  *<?import javafx.scene.image.\*?>*  *<?import javafx.scene.layout.\*?>*  *<?import javafx.scene.text.\*?>*  *<?import com.jfoenix.controls.JFXButton?>*  *<?import java.lang.String?>*  *<?import javafx.scene.control.Label?>*  *<?import javafx.scene.control.TableView?>*  *<?import javafx.scene.image.Image?>*  *<?import javafx.scene.image.ImageView?>*  *<?import javafx.scene.layout.AnchorPane?>*  *<?import javafx.scene.layout.HBox?>*  *<?import javafx.scene.layout.VBox?>*  *<?import javafx.scene.text.Font?>*  *<AnchorPane prefHeight="640.0" prefWidth="1166.0" stylesheets="@../../Libraries/CssMenu.css" xmlns="http://javafx.com/javafx/8" xmlns:fx="http://javafx.com/fxml/1" fx:controller="Home.controller.KhoiPhucController">*  *<children>*  *<HBox alignment="CENTER" prefHeight="100.0" prefWidth="200.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="0.0">*  *<children>*  *<Label alignment="CENTER" prefHeight="50.0" prefWidth="583.0" text="Khôi phục cơ sở dữ liệu" textFill="#007fff">*  *<font>*  *<Font name="System Bold" size="36.0" />*  *</font>*  *</Label>*  *</children>*  *</HBox>*  *<VBox alignment="CENTER" layoutX="150.0" layoutY="216.0" prefHeight="130.0" prefWidth="866.0" AnchorPane.leftAnchor="80.0" AnchorPane.rightAnchor="80.0" AnchorPane.topAnchor="216.0">*  *<children>*  *<HBox alignment="CENTER" prefHeight="40.0" prefWidth="500.0">*  *<children>*  *<Label alignment="CENTER" prefHeight="35.0" prefWidth="220.0" text="Full backup" textFill="#ff1600">*  *<font>*  *<Font name="System Bold" size="24.0" />*  *</font>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *</Label>*  *<TextField fx:id="txtFullBackup" editable="false" focusTraversable="false" prefHeight="35.0" prefWidth="430.0" style="-fx-text-fill: #ff1600;">*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *</TextField>*  *<JFXButton alignment="CENTER" onAction="#chooseFullBackupFile" prefHeight="35.0" prefWidth="130.0" text="Chọn File">*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-primary" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="26.0" fitWidth="26.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/folder%20-%20blue.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *</JFXButton>*  *<JFXButton alignment="CENTER" onAction="#deleteFullBackupFile" prefHeight="35.0" prefWidth="150.0" text="Bỏ chọn File">*  *<graphic>*  *<ImageView fitHeight="26.0" fitWidth="26.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/folder%20-%20blue.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-danger" />*  *</styleClass>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *</JFXButton>*  *</children>*  *</HBox>*  *<HBox alignment="CENTER" prefHeight="40.0" prefWidth="500.0">*  *<children>*  *<Label alignment="CENTER" prefHeight="35.0" prefWidth="220.0" text="Differential backup" textFill="#ff6000">*  *<font>*  *<Font name="System Bold" size="24.0" />*  *</font>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *</Label>*  *<TextField fx:id="txtDiffBackup" editable="false" focusTraversable="false" prefHeight="35.0" prefWidth="430.0" style="-fx-text-fill: #ff6000;">*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *</TextField>*  *<JFXButton alignment="CENTER" onAction="#chooseDiffBackupFile" prefHeight="35.0" prefWidth="130.0" text="Chọn File">*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-primary" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="26.0" fitWidth="26.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/folder%20-%20blue.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *</JFXButton>*  *<JFXButton alignment="CENTER" onAction="#deleteDiffBackupFile" prefHeight="35.0" prefWidth="150.0" text="Bỏ chọn File">*  *<graphic>*  *<ImageView fitHeight="26.0" fitWidth="26.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/folder%20-%20blue.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-danger" />*  *</styleClass>*  *<HBox.margin>*  *<Insets left="10.0" right="10.0" />*  *</HBox.margin>*  *</JFXButton>*  *</children>*  *<VBox.margin>*  *<Insets top="50.0" />*  *</VBox.margin>*  *</HBox>*  *</children></VBox>*  *<JFXButton alignment="CENTER" layoutX="488.0" layoutY="438.0" onAction="#restore" prefHeight="57.0" prefWidth="190.0" style="-fx-font-weight: bold; -fx-font-size: 18;" text="Khôi phục" AnchorPane.leftAnchor="488.0" AnchorPane.rightAnchor="488.0" AnchorPane.topAnchor="430.0">*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-danger" />*  *</styleClass>*  *<font>*  *<Font size="18.0" />*  *</font>*  *<graphic>*  *<ImageView fitHeight="32.0" fitWidth="32.0" pickOnBounds="true" preserveRatio="true">*  *<image>*  *<Image url="@../../Libraries/icon/restore.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *</children>*  *</AnchorPane>* |

##### DoiMatKhau.fxml

**CÀI ĐẶT MÃ NGUỒN**

|  |
| --- |
| *<?xml version="1.0" encoding="UTF-8"?>*  *<?import com.jfoenix.controls.\*?>*  *<?import java.lang.\*?>*  *<?import javafx.scene.image.\*?>*  *<?import javafx.scene.layout.\*?>*  *<?import javafx.scene.text.\*?>*  *<?import com.jfoenix.controls.JFXButton?>*  *<?import com.jfoenix.controls.JFXPasswordField?>*  *<?import com.jfoenix.controls.JFXTextField?>*  *<?import java.lang.String?>*  *<?import javafx.scene.image.Image?>*  *<?import javafx.scene.image.ImageView?>*  *<?import javafx.scene.layout.AnchorPane?>*  *<?import javafx.scene.layout.Pane?>*  *<?import javafx.scene.layout.StackPane?>*  *<?import javafx.scene.layout.VBox?>*  *<?import javafx.scene.text.Font?>*  *<AnchorPane id="AnchorPane" prefHeight="600.0" prefWidth="800.0" stylesheets="@../../Libraries/CssMenu.css" xmlns="http://javafx.com/javafx/8" xmlns:fx="http://javafx.com/fxml/1" fx:controller="Home.controller.LoginController">*  *<children>*  *<StackPane layoutX="184.0" layoutY="100.0" prefHeight="600.0" prefWidth="800.0" AnchorPane.bottomAnchor="0.0" AnchorPane.leftAnchor="0.0" AnchorPane.rightAnchor="0.0" AnchorPane.topAnchor="0.0">*  *<children>*  *<VBox prefHeight="571.0" prefWidth="800.0">*  *<children>*  *<Pane prefHeight="200.0" prefWidth="200.0" style="-fx-background-color: #2196f3;" />*  *<Pane prefHeight="400.0" prefWidth="800.0" style="-fx-background-color: #EDE7F6;" />*  *</children>*  *</VBox>*  *<AnchorPane prefHeight="586.0" prefWidth="800.0" style="-fx-background-color: transparent;">*  *<children>*  *<AnchorPane layoutX="166.0" layoutY="114.0" prefHeight="400.0" prefWidth="469.0" style="-fx-background-color: WHITE; -fx-effect: dropshadow(gaussian, rgb(0.0, 0.0, 0.0, 0.15), 6.0, 0.7, 0.0,1.5); -fx-background-radius: 4; -fx-border-radius: 4; -fx-padding: 8;" AnchorPane.leftAnchor="166.0" AnchorPane.rightAnchor="165.0" AnchorPane.topAnchor="80.0">*  *<children>*  *<ImageView fitHeight="110.0" fitWidth="110.0" layoutX="188.0" layoutY="8.0" pickOnBounds="true" preserveRatio="true" AnchorPane.leftAnchor="185.0" AnchorPane.rightAnchor="185.0" AnchorPane.topAnchor="6.0">*  *<image>*  *<Image url="@../../Libraries/icon/user128x128.png" />*  *</image>*  *</ImageView>*  *<JFXPasswordField fx:id="txtMatKhau1" labelFloat="true" layoutX="85.0" layoutY="210.0" maxWidth="316.0" minWidth="235.0" onKeyPressed="#enterToLogin" prefHeight="31.0" prefWidth="316.0" promptText="Mật khẩu cũ" AnchorPane.leftAnchor="84.0" AnchorPane.rightAnchor="84.0" AnchorPane.topAnchor="130.0">*  *<font>*  *<Font size="14.0" />*  *</font>*  *</JFXPasswordField>*  *<JFXPasswordField fx:id="txtMatKhau" labelFloat="true" layoutX="84.0" layoutY="210.0" maxWidth="316.0" minWidth="235.0" onKeyPressed="#enterToLogin" prefHeight="31.0" prefWidth="316.0" promptText="Mật khẩu" AnchorPane.leftAnchor="84.0" AnchorPane.rightAnchor="84.0" AnchorPane.topAnchor="190.0">*  *<font>*  *<Font size="14.0" />*  *</font>*  *</JFXPasswordField>*  *<JFXPasswordField fx:id="txtMatKhau2" labelFloat="true" layoutX="94.0" layoutY="220.0" maxWidth="316.0" minWidth="235.0" onKeyPressed="#enterToLogin" prefHeight="31.0" prefWidth="316.0" promptText="Xác nhân mật khẩu" AnchorPane.leftAnchor="84.0" AnchorPane.rightAnchor="84.0" AnchorPane.topAnchor="250.0">*  *<font>*  *<Font size="14.0" />*  *</font>*  *</JFXPasswordField>*  *<JFXButton fx:id="btnLogin" layoutX="121.0" layoutY="281.0" onAction="#login" prefHeight="34.0" prefWidth="126.0" text="Xác nhận" textFill="WHITE" AnchorPane.bottomAnchor="25.0" AnchorPane.leftAnchor="95.0">*  *<font>*  *<Font size="14.0" />*  *</font>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-primary" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true" translateX="-5.0">*  *<image>*  *<Image url="@../../Libraries/icon/dangnhap.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *<JFXButton layoutX="283.0" layoutY="274.0" onAction="#exit" prefHeight="32.0" prefWidth="126.0" text="Hủy" textFill="WHITE" AnchorPane.bottomAnchor="25.0" AnchorPane.rightAnchor="95.0">*  *<font>*  *<Font size="14.0" />*  *</font>*  *<styleClass>*  *<String fx:value="btn" />*  *<String fx:value="btn-danger" />*  *</styleClass>*  *<graphic>*  *<ImageView fitHeight="24.0" fitWidth="24.0" pickOnBounds="true" preserveRatio="true" translateX="-5.0">*  *<image>*  *<Image url="@../../Libraries/icon/thoat.png" />*  *</image>*  *</ImageView>*  *</graphic>*  *</JFXButton>*  *</children>*  *</AnchorPane>*  *</children>*  *</AnchorPane>*  *</children>*  *</StackPane>*  *</children>*  *</AnchorPane>* |

##### GioiThieu.fxml

**CÀI ĐẶT MÃ NGUỒN**

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#### Viết mã cho các chức năng

##### Màn hình chào

**MÔ TẢ HOẠT ĐỘNG**

|  |  |
| --- | --- |
| **Sự kiện** | **Công việc** |
| initialize | progressIndicator.setProgress(ProgressIndicator.  INDETERMINATE\_PROGRESS);  Thread thread = new Thread(this);  thread.start(); |

**CÀI ĐẶT MÃ NGUỒN**

|  |
| --- |
| *@Override*  *public void run() {*  *try {*  *Thread.sleep(3000);*  *} catch (InterruptedException ex) {*  *ex.printStackTrace();*  *}*  *//Tất cả sự kiện trong UI muốn chạy bằng Thread phải đặt trong Platform.runLater*  *Platform.runLater(new Runnable() {*  *@Override*  *public void run() {*  *try {*  *Share.mainStage.close();*  *Scene scene = new Scene(FXMLLoader.load(getClass().getResource("/Home/gui/Login.fxml")));*  *Share.mainStage.setScene(scene);*  *Share.mainStage.show();*  *} catch (IOException ex) {*  *ex.printStackTrace();*  *}*  *}*  *});*  *}* |

##### Đăng nhập

**MÔ TẢ HOẠT ĐỘNG**

|  |  |
| --- | --- |
| **Sự kiện** | **Công việc** |
| initialize | try {  tkdao = new TaiKhoanDAO();  validatorInit();  } catch (Exception ex) {  ex.printStackTrace();  } |

**CÀI ĐẶT MÃ NGUỒN**

|  |
| --- |
| *public void validatorInit() {*  *txtTaiKhoan.getValidators().add(Validate.createValidatorJFX("Vui lòng nhập tài khoản"));*  *txtTaiKhoan.focusedProperty().addListener(new ChangeListener<Boolean>() {*  *@Override*  *public void changed(ObservableValue<? extends Boolean> observable, Boolean oldValue, Boolean newValue) {*  *if (!newValue) {*  *txtTaiKhoan.validate();*  *}*  *}*  *});*    *txtMatKhau.getValidators().add(Validate.createValidatorJFX("Vui lòng nhập mật khẩu"));*  *txtMatKhau.focusedProperty().addListener(new ChangeListener<Boolean>() {*  *@Override*  *public void changed(ObservableValue<? extends Boolean> observable, Boolean oldValue, Boolean newValue) {*  *if (!newValue) {*  *txtMatKhau.validate();*  *}*  *}*  *});*  *}*  *@FXML*  *void login() {*  *if (!txtTaiKhoan.validate() || !txtMatKhau.validate()) {*  *CustomDialog.showAlert(AlertType.ERROR, "Vui lòng nhập đầy đủ");*  *return;*  *}*  *int kq = tkdao.checkAccount(txtTaiKhoan.getText(), txtMatKhau.getText());//Biến lưu kết quả trả về*  *switch (kq) {*  *case 0:*  *CustomDialog.showAlert(AlertType.ERROR, "Sai tên đăng nhập");*  *break;*  *case 1:*  *CustomDialog.showAlert(AlertType.ERROR, "Sai mật khẩu");*  *break;*  *case 2:*  *CustomDialog.showAlert(AlertType.INFORMATION, "Đăng nhập thành công");*  *openMain();*  *break;*  *default:*  *CustomDialog.showAlert(AlertType.ERROR, "Có lỗi xảy ra, không thể đăng nhập");*  *break;*  *}*  *}*  *@FXML*  *void enterToLogin(KeyEvent event) {*  *if (event.getCode() == KeyCode.ENTER) {*  *btnLogin.fire();*  *}*  *}*    *@FXML*  *void exit() {*  *if (CustomDialog.confirm("Bạn có muốn thoát chương trình")){*  *Share.mainStage.close();*  *}*  *}*    *public void openMain() {*  *try {*  *Share.mainStage.close();*  *Scene scene = new Scene(FXMLLoader.load(getClass().getResource("/Home/gui/Main.fxml")));*  *Share.mainStage.setScene(scene);*  *Share.mainStage.show();*  *} catch (IOException ex) {*  *ex.printStackTrace();*  *}*  *}*  *private TaiKhoanDAO tkdao;* |

##### Giao diện chính

**MÔ TẢ HOẠT ĐỘNG**

|  |  |
| --- | --- |
| **Sự kiện** | **Công việc** |
| initialize | Share.mainPane = borderPane;  setGUIHome(); |

**CÀI ĐẶT MÃ NGUỒN**

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| --- |
| *@FXML*  *public void setGUIHome() {*  *try { Share.mainPane.setCenter(FXMLLoader.load(getClass().getResource("/Home/gui/Home.fxml")));*  *} catch (IOException ex) {*  *ex.printStackTrace();*  *}*  *}*  *@FXML*  *public void setGUINhanVien() {*  *try { Share.mainPane.setCenter(FXMLLoader.load(getClass().getResource("/Home/gui/NhanVien.fxml")));*  *} catch (IOException ex) {*  *ex.printStackTrace();*  *}*  *}*  *@FXML*  *public void setGUIToChuc() {*  *try {*  *Share.mainPane.setCenter(FXMLLoader.load(getClass().getResource("/Home/gui/ToChuc.fxml")));*  *} catch (IOException ex) {*  *ex.printStackTrace();*  *}*  *}*  *@FXML*  *public void setGUIChamCong() {*  *try { Share.mainPane.setCenter(FXMLLoader.load(getClass().getResource("/Home/gui/ChamCong.fxml")));*  *} catch (IOException ex) {*  *ex.printStackTrace();*  *}*  *}*  *@FXML*  *public void setGUIBangLuong() {*  *try { Share.mainPane.setCenter(FXMLLoader.load(getClass().getResource("/Home/gui/BangLuong.fxml")));*  *} catch (IOException ex) {*  *ex.printStackTrace();*  *}*  *}*  *@FXML*  *public void setGUIKhoiPhuc() {*  *try { Share.mainPane.setCenter(FXMLLoader.load(getClass().getResource("/Home/gui/KhoiPhuc.fxml")));*  *} catch (IOException ex) {*  *ex.printStackTrace();*  *}*  *}*  *@FXML*  *public void setGUITaikhoan() {*  *try { Share.mainPane.setCenter(FXMLLoader.load(getClass().getResource("/Home/gui/TaiKhoan.fxml")));*  *} catch (IOException ex) {*  *ex.printStackTrace();*  *}*  *}*  *@FXML*  *public void setGUIDoimatkhau() {*        *}*  *@FXML*  *void getCoorMouse(MouseEvent event) {*  *xMouse = event.getSceneX();*  *yMouse = event.getSceneY();*  *}*  *@FXML*  *public void movePanel(MouseEvent event) {*  *double x = event.getScreenX();*  *double y = event.getScreenY();*  *//set tọa độ mới cho JDialog khi rê chuột*  *Share.mainStage.setX(x - xMouse);*  *Share.mainStage.setY(y - yMouse);*  *}*  *@FXML*  *public void logOut() {*  *try {*  *Share.logOut();*  *Share.mainPane.setCenter(FXMLLoader.load(getClass().getResource("/Home/gui/TaiKhoan.fxml")));*  *} catch (IOException ex) {*  *ex.printStackTrace();*  *}*  *}*  *@FXML*  *public void setGUIGioithieu() {*  *try {*  *Share.logOut();*  *Share.mainPane.setCenter(FXMLLoader.load(getClass().getResource("/Home/gui/GioiThieu.fxml")));*  *} catch (IOException ex) {*  *ex.printStackTrace();*  *}*  *}*  *@FXML*  *public void closeWindow() {*  *Share.mainStage.close();*  *}*  *@FXML*  *public void minimizeWindow() {*  *Share.mainStage.setIconified(true);*  *}*  *//tọa độ con trỏ chuột*  *double xMouse;*  *double yMouse;* |

##### Trang chủ

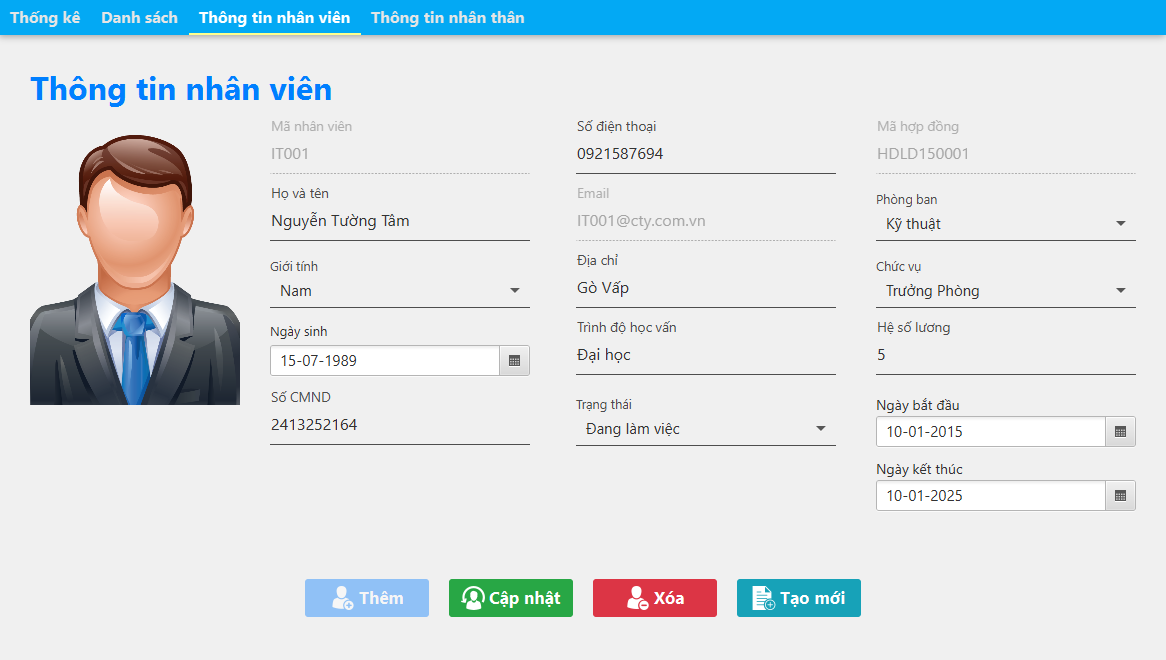
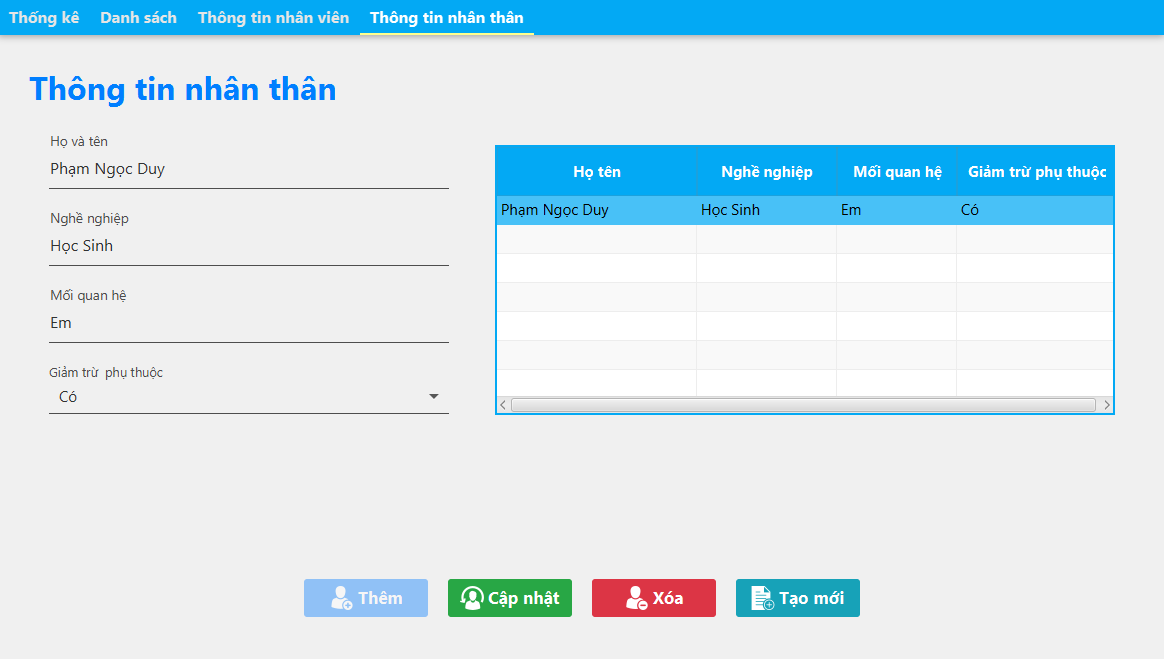
**MÔ TẢ HOẠT ĐỘNG**

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| **Sự kiện** | **Công việc** |
| initialize | try {  nvdao = new NhanVienDAO();  ccdao = new ChamCongDAO();  bldao = new BangLuongDAO();    runThread();  loadCboNam();  yearStatistic = cboNam.getSelectionModel().getSelectedItem();  loadChartTangTruongNV();  } catch (Exception ex) {  ex.printStackTrace();  } |

**CÀI ĐẶT MÃ NGUỒN**

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| *private void runThread() {*  *Thread thread = new Thread(this);*  *thread.start();*  *}*  *private void loadCboNam() {*  *cboNam.setItems(ccdao.getListYear());*  *cboNam.getSelectionModel().select(0);*  *//Sự kiện khi chọn combobox*  *cboNam.valueProperty().addListener(new ChangeListener<Integer>() {*  *@Override*  *public void changed(ObservableValue ov, Integer oldValue, Integer newValue) {*  *yearStatistic = newValue;*  *runThread();*  *loadChartTangTruongNV();*  *}*  *});*  *}*  *private void loadChartTangTruongNV() {*  *chartTangTruongNV.getData().clear();*  *chartTangTruongNV.setTitle("Biểu đồ số lượng nhân viên năm " + yearStatistic);*  *XYChart.Series series1 = new XYChart.Series<>();*  *series1.setName("Giám đốc");*  *series1.setData(nvdao.getSLNVTheoPBVaThang("GD", yearStatistic));*  *XYChart.Series series2 = new XYChart.Series<>();*  *series2.setName("Kỹ thuật");*  *series2.setData(nvdao.getSLNVTheoPBVaThang("IT", yearStatistic));*  *XYChart.Series series3 = new XYChart.Series<>();*  *series3.setName("Kế toán");*  *series3.setData(nvdao.getSLNVTheoPBVaThang("KT", yearStatistic));*  *XYChart.Series series4 = new XYChart.Series<>();*  *series4.setName("Marketing");*  *series4.setData(nvdao.getSLNVTheoPBVaThang("MK", yearStatistic));*  *XYChart.Series series5 = new XYChart.Series<>();*  *series5.setName("Nhân sự");*  *series5.setData(nvdao.getSLNVTheoPBVaThang("NS", yearStatistic));*  *XYChart.Series series6 = new XYChart.Series<>();*  *series6.setName("Bán hàng");*  *series6.setData(nvdao.getSLNVTheoPBVaThang("SL", yearStatistic));*  *XYChart.Series series7 = new XYChart.Series<>();*  *series7.setName("Tất cả");*  *series7.setData(nvdao.getSLNVTheoPBVaThang(null, yearStatistic));*  *//add series to chart*  *chartTangTruongNV.getData().addAll(series1, series2, series3, series4, series5, series6, series7);*  *}*  *private NhanVienDAO nvdao;*  *private ChamCongDAO ccdao;*  *private BangLuongDAO bldao;*  *private int yearStatistic;* |

##### Nhân viên

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**MÔ TẢ HOẠT ĐỘNG**

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| **Sự kiện** | **Công việc** |
| initialize | try {  Share.nvController = this;  nvdao = new NhanVienDAO();  pbdao = new PhongBanDAO();  cvdao = new ChucVuDAO();  tbl\_nvdao = new TableNhanVienDAO();  tbl\_ntdao = new TableThanNhanDAO();  ntdao = new NhanThanDAO();  //tab 1  loadCharts();  //tab 2  setTableNVColumn();  loadDataToTableNV();  //tab 3  loadComboboxs();  //tab4  setTableNTcolumm();  //định dạng ngày kiểu dd/MM/yyyy cho DatePicker  DPickerNgaySinh.setConverter(XDate.converter);  DPickerNgayBatDau.setConverter(XDate.converter);  DPickerNgayKetThuc.setConverter(XDate.converter);  newNV();  setDisableTextFields();  setDefaultValueForDisableTextFields();  addListener();  } catch (Exception ex) {  ex.printStackTrace();  } |

**CÀI ĐẶT MÃ NGUỒN**

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| *private void loadCharts() {*  *chartTyLeNamNu.setData(nvdao.getDataForPieChart());*  *chartSLNhanVien.getData().add(nvdao.getDataForBarChart());*  *}*  *private void setTableNVColumn() {*  *//Khai bao cot*  *deleteColumn = new TableColumn<>("");*  *deleteColumn.setCellValueFactory(new PropertyValueFactory<>("Delete"));*  *deleteColumn.setStyle( "-fx-alignment: CENTER-RIGHT; "*  *+ "-fx-border-width: 1 0 1 1; "*  *+ "-fx-border-color: transparent");*    *updateColumn = new TableColumn<>("");*  *updateColumn.setCellValueFactory(new PropertyValueFactory<>("Update"));*  *updateColumn.setStyle("-fx-alignment: CENTER-LEFT;"*  *+ "-fx-border-color: transparent");*    *col1 = new TableColumn<>("Mã nhân viên");*  *col1.setCellValueFactory(new PropertyValueFactory<>("MaNV"));*    *col2 = new TableColumn<>("Họ tên");*  *col2.setCellValueFactory(new PropertyValueFactory<>("HoTen"));*    *col3 = new TableColumn<>("Giới tính");*  *col3.setCellValueFactory(new PropertyValueFactory<>("GioiTinh"));*    *col4 = new TableColumn<>("Ngày sinh");*  *col4.setCellValueFactory(new PropertyValueFactory<>("NgaySinh"));*    *col5 = new TableColumn<>("Số CMND");*  *col5.setCellValueFactory(new PropertyValueFactory<>("SoCM"));*    *col6 = new TableColumn<>("Điện thoại");*  *col6.setCellValueFactory(new PropertyValueFactory<>("DienThoai"));*    *col7 = new TableColumn<>("Email");*  *col7.setCellValueFactory(new PropertyValueFactory<>("Email"));*    *col8 = new TableColumn<>("Địa chỉ");*  *col8.setCellValueFactory(new PropertyValueFactory<>("DiaChi"));*    *col9 = new TableColumn<>("Trình độ học vấn");*  *col9.setCellValueFactory(new PropertyValueFactory<>("TrinhDoHV"));*    *col10 = new TableColumn<>("Mã hợp đồng");*  *col10.setCellValueFactory(new PropertyValueFactory<>("MaHD"));*    *col11 = new TableColumn<>("Phòng ban");*  *col11.setCellValueFactory(new PropertyValueFactory<>("PhongBan"));*    *col12 = new TableColumn<>("Chức vụ");*  *col12.setCellValueFactory(new PropertyValueFactory<>("ChucVu"));*    *col13 = new TableColumn<>("Ngày vào làm");*  *col13.setCellValueFactory(new PropertyValueFactory<>("NgayVaoLam"));*    *col14 = new TableColumn<>("Ngày kết thúc");*  *col14.setCellValueFactory(new PropertyValueFactory<>("NgayKetThuc"));*    *col15 = new TableColumn<>("Hệ số lương");*  *col15.setCellValueFactory(new PropertyValueFactory<>("HeSoLuong"));*    *col16 = new TableColumn<>("Trạng thái");*  *col16.setCellValueFactory(new PropertyValueFactory<>("TrangThai"));*  *tblNhanVien.getColumns().addAll(deleteColumn, updateColumn, col1, col2, col3, col4, col5, col6, col7, col8, col9, col10,*  *col11, col12, col13, col14, col15, col16);*  *}*  *private void setTableNTcolumm() {*  *HotenNT = new TableColumn<>("Họ tên");*  *HotenNT.setCellValueFactory(new PropertyValueFactory<>("HoTen"));*  *HotenNT.setPrefWidth(200);*  *NgheNghiep = new TableColumn<>("Nghề nghiệp");*  *NgheNghiep.setCellValueFactory(new PropertyValueFactory<>("NgheNghiep"));*  *NgheNghiep.setPrefWidth(140);*  *Moiquanhe = new TableColumn<>("Mối quan hệ");*  *Moiquanhe.setCellValueFactory(new PropertyValueFactory<>("MoiQuanHe"));*  *Moiquanhe.setPrefWidth(120);*  *giamtruphuthuoc = new TableColumn<>("Giảm trừ phụ thuộc");*  *giamtruphuthuoc.setCellValueFactory(new PropertyValueFactory<>("GiamTruPhuThuoc"));*  *giamtruphuthuoc.setPrefWidth(160);*  *tblNhanThan.getColumns().addAll(HotenNT, NgheNghiep, Moiquanhe, giamtruphuthuoc);*  *}*  *public void loadDataToTableNV() {*  *tblNhanVien.setItems(tbl\_nvdao.getData());*  *}*  *public void loadDataToTableNT() {*  *tblNhanThan.setItems(tbl\_ntdao.getDATA(txtMaNV.getText()));*  *}*  *private void loadComboboxs() {*  *listGioiTinh = FXCollections.observableArrayList("Nam", "Nữ");*  *cboGioiTinh.setItems(listGioiTinh);*  *listTrangThai = FXCollections.observableArrayList("Đang làm việc", "Đã nghỉ việc");*  *cboTrangThai.setItems(listTrangThai);*  *listPhongBan = pbdao.findByCode(null);*  *cboPhongBan.setItems(listPhongBan);*  *listChucVu = cvdao.findByCode(null);*  *cboChucVu.setItems(listChucVu);*  *listGiamTruPhuThuoc = FXCollections.observableArrayList("Có", "Không");*  *cboGiamTruPhuThuoc.setItems(listGiamTruPhuThuoc);*  *}*  *private void setDisableTextFields() {*  *txtMaNV.setDisable(true);*  *txtMaHD.setDisable(true);*  *txtEmail.setDisable(true);*  *}*    *private void setDefaultValueForDisableTextFields() {*  *txtMaNV.setText("Tự động tạo khi chọn phòng ban");*  *txtMaHD.setText(createNewMaHD(LocalDate.now().getYear()));*  *txtEmail.setText("@cty.com.vn");*  *}*  *private void addListener() {*  *txtMaNV.textProperty().addListener(new ChangeListener<String>() {*  *@Override*  *public void changed(ObservableValue<? extends String> observable, String oldValue, String newValue) {*  *if (newValue == null || newValue.equals("")) {*  *txtMaNV.setText("Tự động tạo khi chọn phòng ban");*  *}*  *txtEmail.setText(newValue + "@cty.com.vn");*  *}*  *});*  *DPickerNgayBatDau.valueProperty().addListener(new ChangeListener<LocalDate>() {*  *@Override*  *public void changed(ObservableValue<? extends LocalDate> observable, LocalDate oldValue, LocalDate newValue) {*  *DPickerNgayKetThuc.setValue(newValue.plusYears(10));*  *txtMaHD.setText(createNewMaHD(newValue.getYear()));*  *}*  *});*  *cboPhongBan.valueProperty().addListener(new ChangeListener<PhongBan>() {*  *@Override*  *public void changed(ObservableValue<? extends PhongBan> observable, PhongBan oldValue, PhongBan newValue) {*  *if (newValue != null) {*  *txtMaNV.setText(createNewMaNV(newValue));*  *}*  *}*  *});*  *}*  *private String createNewMaHD(int year) {*  *String maxMaHD = nvdao.getMaxMaHDOfYear(year);*  *String suffix = maxMaHD.substring(6, 10);*  *//Thêm số không vào trước suffix và tổng cộng chỉ có 4 chữ số*  *String newsuffix = String.format("%04d", Integer.parseInt(suffix) + 1);*  *String newMaHD = maxMaHD.substring(0, 6) + newsuffix;*  *return newMaHD;*  *}*  *private String createNewMaNV(PhongBan pb) {*  *String maxMaNV = nvdao.getMaxNaNVByPhongBan(pb.getMaPB());*  *String suffix = maxMaNV.substring(2, 5);*  *//Thêm số không vào trước suffix và tổng cộng chỉ có 3 chữ số*  *String newsuffix = String.format("%03d", Integer.parseInt(suffix) + 1);*  *String newMaNV = maxMaNV.substring(0, 2) + newsuffix;*  *return newMaNV;*  *}*  *//Sự kiện click vào bảng nhan vien*  *@FXML*  *private void selectNhanVien(MouseEvent event) {*  *try {*  *TableNhanVien tableNhanVien = tblNhanVien.getSelectionModel().getSelectedItem();*  *if (tableNhanVien != null) {*  *NhanVien nv = nvdao.findByCode(tableNhanVien.getMaNV());*  *setModelNhanVien(nv);*  *loadDataToTableNT();*  *setStatusNV(false);*  *if (event.getClickCount() == 2 && nv != null) {*  *changeTabPane(2);*  *}*  *}*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *}*  *}*  *@FXML*  *public void newNV() {*  *setModelNhanVien(new NhanVien());*  *setStatusNV(true);*  *tblNhanVien.getSelectionModel().clearSelection();*  *imageFile = null;*  *imageName = "";*  *}*  *@FXML*  *private void insertNV() {*  *NhanVien nv = getModelNhanVien();*  *if (checkNullFormNhanVien() && checkContentFormNhanvien() && checkDuplicationFormNhanvien(nv) && copyImageToAvatarFolder()) {*  *try {*  *nvdao.insert(nv);*  *loadDataToTableNV();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "Managemnet System", "Thêm nhân viên thành công ");*  *setStatusNV(false);*  *} catch (Exception e) {*  *e.printStackTrace();*  *CustomDialog.showAlert(Alert.AlertType.ERROR, Share.mainStage, "Management System", "Thêm nhân viên thất bại! vui lòng kiểm tra lại ");*  *}*  *}*  *}*  *@FXML*  *private void updateNV() {*  *NhanVien nv = getModelNhanVien();*  *if (checkNullFormNhanVien() && checkContentFormNhanvien() && checkDuplicationFormNhanvien(nv) && copyImageToAvatarFolder()) {*  *try {*  *if (nvdao.update(nv) > 0) {*  *loadDataToTableNV();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "Managemnet System", "Cập nhật thông tin nhân viên thành công ");*  *} else {*  *throw new Exception();*  *}*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *CustomDialog.showAlert(Alert.AlertType.ERROR, Share.mainStage, "Management System", "Cập nhật thông tin nhân viên thất bại! vui lòng kiểm tra lại ");*  *}*  *}*  *}*  *@FXML*  *public void deleteNV() {*  *NhanVien nv = getModelNhanVien();*  *if (!CustomDialog.confirm("Bạn chắc chắn muốn xóa nhân viên " + nv.getHoTen())) {*  *return;*  *}*  *try {*  *nvdao.delete(nv);*  *loadDataToTableNV();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "Managemnet System", "Xóa nhân viên thành công");*  *newNV();*  *tblNhanVien.getSelectionModel().clearSelection();*  *} catch (Exception e) {*  *e.printStackTrace();*  *CustomDialog.showAlert(Alert.AlertType.ERROR, Share.mainStage, "Management System", "Xóa nhân viên thất bại! vui lòng kiểm tra lại ");*  *}*  *}*  *private NhanVien getModelNhanVien() {*  *NhanVien nv = new NhanVien();*  *nv.setMaNV(txtMaNV.getText());*  *nv.setHoTen(txtHoTenNV.getText());*  *nv.setGioiTinh(cboGioiTinh.getSelectionModel().getSelectedIndex() == 0);*  *nv.setNgaySinh(XDate.toDate(DPickerNgaySinh.getValue()));*  *nv.setHinh(imageName);*  *nv.setSoCM(txtSoCM.getText());*  *nv.setDienThoai(txtDienThoai.getText());*  *nv.setEmail(txtEmail.getText());*  *nv.setDiaChi(txtDiaChi.getText());*  *nv.setTrinhDoHV(txtTrinhDoHV.getText());*  *nv.setTrangThai(cboTrangThai.getSelectionModel().getSelectedIndex() == 0);*  *nv.setMaHD(txtMaHD.getText());*  *nv.setMaPB(cboPhongBan.getSelectionModel().getSelectedItem().getMaPB());*  *nv.setMaCV(cboChucVu.getSelectionModel().getSelectedItem().getMaCV());*  *nv.setHeSoLuong(Double.parseDouble(txtHeSoLuong.getText()));*  *nv.setNgayVaoLam(XDate.toDate(DPickerNgayBatDau.getValue()));*  *nv.setNgayKetThuc(XDate.toDate(DPickerNgayKetThuc.getValue()));*  *return nv;*  *}*  *public void setModelNhanVien(NhanVien nv) {*  *imageName = nv.getHinh();*  *displayAvatar(imageName);*  *txtMaNV.setText(nv.getMaNV());*  *txtHoTenNV.setText(nv.getHoTen());*  *if (nv.getGioiTinh() == null) {*  *cboGioiTinh.getSelectionModel().clearSelection();*  *} else {*  *cboGioiTinh.getSelectionModel().select(nv.getGioiTinh() ? 0 : 1);*  *}*  *DPickerNgaySinh.setValue(XDate.toLocalDate(nv.getNgaySinh()));*  *txtSoCM.setText(nv.getSoCM());*  *txtDienThoai.setText(nv.getDienThoai());*  *txtEmail.setText(nv.getEmail());*  *txtDiaChi.setText(nv.getDiaChi());*  *txtTrinhDoHV.setText(nv.getTrinhDoHV());*  *if (nv.getTrangThai() == null) {*  *cboTrangThai.getSelectionModel().clearSelection();*  *} else {*  *cboTrangThai.getSelectionModel().select(nv.getTrangThai() ? 0 : 1);*  *}*  *txtMaHD.setText(nv.getMaHD());*  *if (nv.getMaPB() == null) {*  *cboPhongBan.getSelectionModel().clearSelection();*  *} else {*  *for (PhongBan phongBan : listPhongBan) {*  *if (phongBan.getMaPB().equals(nv.getMaPB())) {*  *cboPhongBan.getSelectionModel().select(phongBan);*  *}*  *}*  *}*  *if (nv.getMaCV() == null) {*  *cboChucVu.getSelectionModel().clearSelection();*  *} else {*  *for (ChucVu chucvu : listChucVu) {*  *if (chucvu.getMaCV().equals(nv.getMaCV())) {*  *cboChucVu.getSelectionModel().select(chucvu);*  *}*  *}*  *}*  *txtHeSoLuong.setText(FormatNumber.formatDouble(nv.getHeSoLuong()));*  *DPickerNgayBatDau.setValue(XDate.toLocalDate(nv.getNgayVaoLam()));*  *DPickerNgayKetThuc.setValue(XDate.toLocalDate(nv.getNgayKetThuc()));*  *}*  *public void setStatusNV(boolean insertableNV) {*  *this.insertableNV = insertableNV;*  *btnCapNhatNV.setDisable(insertableNV);*  *btnXoaNV.setDisable(insertableNV);*  *btnTaoMoiNV.setDisable(insertableNV);*  *btnThemNV.setDisable(!insertableNV);*  *if (insertableNV) {*  *clearFormThanNhan();*  *} else {*  *newNT();*  *}*  *}*  *private void clearFormThanNhan() {*  *newNT();*  *btnThemNT.setDisable(true);*  *tblNhanThan.getSelectionModel().clearSelection();*  *tblNhanThan.setItems(null);*  *}*  *private boolean checkNullFormNhanVien() {*  *if (Validate.isNull(txtMaNV, "Vui lòng nhập mã nhân viên")) {*  *return false;*  *}*  *if (Validate.isNull(txtHoTenNV, "Vui lòng nhập họ tên nhân viên")) {*  *return false;*  *}*  *if (Validate.isNotSelected(cboGioiTinh, "Vui lòng chọn giới tính")) {*  *return false;*  *}*  *if (DPickerNgaySinh.getValue() == null) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, "Vui lòng chọn ngày sinh ");*  *DPickerNgaySinh.requestFocus();*  *return false;*  *}*  *if (Validate.isNull(txtSoCM, "Vui lòng nhập số CMND")) {*  *return false;*  *}*  *if (Validate.isNull(txtDienThoai, "Vui lòng nhập số điện thoại")) {*  *return false;*  *}*  *if (Validate.isNull(txtEmail, "Vui lòng nhập địa chỉ email")) {*  *return false;*  *}*  *if (Validate.isNull(txtDiaChi, "Vui lòng nhập địa chỉ")) {*  *return false;*  *}*  *if (Validate.isNull(txtTrinhDoHV, "Vui lòng nhập trình độ học vấn ")) {*  *return false;*  *}*  *if (Validate.isNotSelected(cboTrangThai, "Vui lòng chọn trạng thái")) {*  *return false;*  *}*  *if (Validate.isNull(txtMaHD, "Vui lòng nhập mã hợp đồng")) {*  *return false;*  *}*  *if (Validate.isNotSelected(cboPhongBan, "Vui lòng chọn phòng ban")) {*  *return false;*  *}*  *if (Validate.isNotSelected(cboChucVu, "Vui lòng chọn chức vụ")) {*  *return false;*  *}*  *if (Validate.isNull(txtHeSoLuong, "Vui lòng nhập hệ số lương")) {*  *return false;*  *}*  *if (DPickerNgayBatDau.getValue() == null) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, "Vui lòng chọn ngày bắt đầu ");*  *DPickerNgaySinh.requestFocus();*  *return false;*  *}*  *if (DPickerNgayKetThuc.getValue() == null) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, "Vui lòng chọn ngày kết thúc");*  *DPickerNgaySinh.requestFocus();*  *return false;*  *}*  *return true;*  *}*  *private boolean checkContentFormNhanvien() {*  *//kiểm tra họ và tên*  *String regexVietnamese = "[\\p{L}\\p{M} ]+";*  *// \\p{L} matches any kind of letter from any language*  *// \\p{M} matches a character intended to be combined with another character (e.g. accents, umlauts, enclosing boxes, etc.)*  *if (Validate.isNotMatches(txtHoTenNV, regexVietnamese, "Họ tên không được chứa số và các ký tự đặc biệt")) {*  *return false;*  *}*  *//Kiểm tra số CMND*  *if (Validate.isNotMatches(txtSoCM, "[0-9]{9,10}", "Số CMND chỉ có 9 hoặc 10 chữ số")) {*  *return false;*  *}*  *//Kiểm tra ngày sinh*  *if (ChronoUnit.YEARS.between(DPickerNgaySinh.getValue(), LocalDate.now()) < 18) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, "Nhân viên phải lớn hơn 18 tuổi");*  *DPickerNgaySinh.requestFocus();*  *return false;*  *}*  *//Kiểm tra số điện thoại*  *if (Validate.isNotMatches(txtDienThoai, "[0-9]{10}", "Số điện thoại chỉ có 10 chữ số")) {*  *return false;*  *}*  *//Kiểm tra email*  *if (Validate.isNotMatches(txtEmail, "\\w+@\\w+(\\.\\w+){1,2}", "Email không đúng định dạng")) {*  *return false;*  *}*  *//Kiểm tra hệ số lương*  *if (Validate.isNotMatches(txtHeSoLuong, "[0-9]+(\\.[0-9]+)?", "Hệ số lương không hợp lệ")) {*  *return false;*  *}*  *//Kiểm tra ngày kết thúc hợp đồng lao động*  *if (DPickerNgayKetThuc.getValue().isBefore(DPickerNgayBatDau.getValue())) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, "Ngày kết thúc hợp đồng không được sớm hơn ngày bắt đầu hợp đồng");*  *DPickerNgayKetThuc.requestFocus();*  *return false;*  *}*  *return true;*  *}*  *private boolean checkDuplicationFormNhanvien(NhanVien nv) {*  *if (insertableNV && nvdao.findByCode(txtMaNV.getText().trim()) != null) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, "Mã nhân viên đã tồn tại");*  *txtMaNV.requestFocus();*  *return false;*  *}*  *if (nvdao.findbyCMND(txtSoCM.getText().trim()) != null && !nv.getSoCM().equals(txtSoCM.getText().trim())) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, "Số CMND đã tồn tại");*  *txtSoCM.requestFocus();*  *return false;*  *}*  *if (nvdao.findbyMaHD(txtMaHD.getText().trim()) != null && !nv.getMaHD().equals(txtMaHD.getText().trim())) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, "Mã hợp đồng đã tồn tại");*  *txtMaHD.requestFocus();*  *return false;*  *}*  *return true;*  *}*  *//Chọn ảnh khi click vào ImageView Avatar*  *@FXML*  *private void chooseImage() {*  *//loc file ảnh*  *FileChooser.ExtensionFilter imageFilter = new FileChooser.ExtensionFilter("Image files", "\*.jpg", "\*.jpeg", "\*.png", "\*.gif");*  *FileChooser selectImage = new FileChooser();*  *selectImage.getExtensionFilters().add(imageFilter);*  *imageFile = selectImage.showOpenDialog(Share.mainStage);*  *displayAvatar(imageFile);*  *}*  *//Hiển thị ảnh lên ImageView nếu có file ảnh được chọn*  *private void displayAvatar(File imageFile) {*  *if (imageFile != null) {*  *imageName = imageFile.getName();*  *try {*  *imgHinh.setImage(new Image(imageFile.toURI().toURL().toExternalForm()));*  *} catch (MalformedURLException ex) {*  *ex.printStackTrace();*  *CustomDialog.showAlert(Alert.AlertType.ERROR, "File ảnh không hợp lệ");*  *}*  *}*  *}*  *//Hiển thị ảnh lên ImageView từ Avatar folder*  *private void displayAvatar(String imageName) {*  *try {*  *imgHinh.setImage(Picture.readAvatar(imageName));*  *} catch (Exception ex) {*  *CustomDialog.showAlert(Alert.AlertType.ERROR, "Lỗi hiển thị ảnh");*  *}*  *}*  *private boolean copyImageToAvatarFolder() {*  *try {*  *if (imageFile != null) {*  *Picture.saveAvatar(imageFile);*  *}*  *return true;*  *} catch (Exception e) {*  *CustomDialog.showAlert(Alert.AlertType.ERROR, "Lỗi khi copy file ảnh");*  *return false;*  *}*  *}*  *//su kien click vao bang nhan than*  *@FXML*  *private void selectNhanThan() {*  *TableNhanThan tableModel = tblNhanThan.getSelectionModel().getSelectedItem();*  *if (tableModel != null) {*  *ThanNhan nt = ntdao.findByCode(tableModel.getMaTN()).get(0);*  *setModelThanNhan(nt);*  *setStatusNT(false);*  *}*  *}*  *@FXML*  *public void newNT() {*  *setModelThanNhan(new ThanNhan());*  *setStatusNT(true);*  *}*  *@FXML*  *private void insertNT() {*  *if (checkNullFormNhanThan() && checkContentFormNhanThan()) {*  *ThanNhan nt = getModelThanThan();*  *try {*  *ntdao.insert(nt);*  *loadDataToTableNT();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "Managemnet System", "Thêm thông tin nhân thân thành công ");*  *newNT();*  *} catch (Exception e) {*  *e.printStackTrace();*  *CustomDialog.showAlert(Alert.AlertType.ERROR, Share.mainStage, "Management System", "Thêm thông tin nhân thân thất bại! vui lòng kiểm tra lại ");*  *}*  *}*  *}*  *@FXML*  *private void updateNT() {*  *ThanNhan nt = getModelThanThan();*  *if (checkNullFormNhanThan() && checkContentFormNhanThan()) {*  *try {*  *ntdao.update(nt);*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "Managemnet System", "Cập nhật thông tin nhân thân thành công ");*  *loadDataToTableNT();*  *} catch (Exception e) {*  *e.printStackTrace();*  *CustomDialog.showAlert(Alert.AlertType.ERROR, Share.mainStage, "Management System", "Cập nhật thông tin nhân thân thất bại! Vui lòng kiểm tra lại ");*  *}*  *}*  *}*  *@FXML*  *public void deleteNT() {*  *ThanNhan nt = getModelThanThan();*  *if (!CustomDialog.confirm("Bạn chắc chắn muốn xóa nhân thân " + nt.getHoTen())) {*  *return;*  *}*  *try {*  *ntdao.delete(nt);*  *loadDataToTableNT();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "Managemnet System", "Xóa nhân thân thành công");*  *newNT();*  *tblNhanThan.getSelectionModel().clearSelection();*  *} catch (Exception e) {*  *e.printStackTrace();*  *CustomDialog.showAlert(Alert.AlertType.ERROR, Share.mainStage, "Management System", "Xóa nhân thân thất bại! Vui lòng kiểm tra lại ");*  *}*  *}*  *private ThanNhan getModelThanThan() {*  *ThanNhan TTNT = new ThanNhan();*  *TTNT.setMaTN(Integer.parseInt(txtMaNT.getText()));*  *TTNT.setHoTen(txtHoTenNT.getText());*  *TTNT.setNgheNghiep(txtNgheNghiepNT.getText());*  *TTNT.setMoiQuanHe(txtMoiQuanHeNT.getText());*  *TTNT.setGiamTruPhuThuoc(cboGiamTruPhuThuoc.getSelectionModel().getSelectedIndex() == 0);*  *TTNT.setMaNV(txtMaNV.getText());*  *return TTNT;*  *}*  *private void setModelThanNhan(ThanNhan TTNT) {*  *txtMaNT.setText(TTNT.getMaTN() + "");*  *txtHoTenNT.setText(TTNT.getHoTen());*  *txtNgheNghiepNT.setText(TTNT.getNgheNghiep());*  *txtMoiQuanHeNT.setText(TTNT.getMoiQuanHe());*  *if (TTNT.getGiamTruPhuThuoc() == null) {*  *cboGiamTruPhuThuoc.getSelectionModel().clearSelection();*  *} else {*  *cboGiamTruPhuThuoc.getSelectionModel().select(TTNT.getGiamTruPhuThuoc() ? 0 : 1);*  *}*  *}*  *public void setStatusNT(boolean insertableNT) {*  *this.insertableNT = insertableNT;*  *btnCapNhatNT.setDisable(insertableNT);*  *btnXoaNT.setDisable(insertableNT);*  *btnTaoMoiNT.setDisable(insertableNT);*  *btnThemNT.setDisable(!insertableNT);*  *}*  *private boolean checkNullFormNhanThan() {*  *if (Validate.isNull(txtHoTenNT, "Vui lòng nhập họ tên nhân thân")) {*  *return false;*  *}*  *if (Validate.isNull(txtNgheNghiepNT, "Vui lòng nhập nghề nghiệp của nhân thân")) {*  *return false;*  *}*  *if (Validate.isNull(txtMoiQuanHeNT, "Vui lòng nhập mối quan hệ nhân thân ")) {*  *return false;*  *}*  *if (Validate.isNotSelected(cboGiamTruPhuThuoc, "Vui lòng chọn giảm trừ phụ thuộc")) {*  *return false;*  *}*  *return true;*  *}*  *private boolean checkContentFormNhanThan() {*  *String regexVietnamese = "[\\p{L}\\p{M} ]+";*  *if (Validate.isNotMatches(txtHoTenNT, regexVietnamese, "Họ tên không được chứa số và các ký tự đặc biệt")) {*  *return false;*  *}*  *return true;*  *}*  *public void changeTabPane(int tabIndex) {*  *tabPane.getSelectionModel().select(tabIndex);*  *}*  *private NhanThanDAO ntdao;*  *private NhanVienDAO nvdao;*  *private PhongBanDAO pbdao;*  *private TableThanNhanDAO tbl\_ntdao;*  *private TableNhanVienDAO tbl\_nvdao;*  *private ChucVuDAO cvdao;*  *private ObservableList listGiamTruPhuThuoc;*  *private ObservableList listGioiTinh;*  *private ObservableList listTrangThai;*  *private ObservableList<PhongBan> listPhongBan;*  *private ObservableList<ChucVu> listChucVu;*  *private Boolean insertableNV;*  *private Boolean insertableNT;*  *private String imageName;*  *private File imageFile;*  *private TableColumn<TableNhanVien, Button> deleteColumn;*  *private TableColumn<TableNhanVien, Button> updateColumn;*  *private TableColumn<TableNhanVien, String> col1;*  *private TableColumn<TableNhanVien, String> col2;*  *private TableColumn<TableNhanVien, String> col3;*  *private TableColumn<TableNhanVien, Date> col4;*  *private TableColumn<TableNhanVien, String> col5;*  *private TableColumn<TableNhanVien, String> col6;*  *private TableColumn<TableNhanVien, String> col7;*  *private TableColumn<TableNhanVien, String> col8;*  *private TableColumn<TableNhanVien, String> col9;*  *private TableColumn<TableNhanVien, String> col10;*  *private TableColumn<TableNhanVien, String> col11;*  *private TableColumn<TableNhanVien, String> col12;*  *private TableColumn<TableNhanVien, Date> col13;*  *private TableColumn<TableNhanVien, Date> col14;*  *private TableColumn<TableNhanVien, Integer> col15;*  *private TableColumn<TableNhanVien, String> col16;*  *private TableColumn<TableNhanThan, String> HotenNT;*  *private TableColumn<TableNhanThan, String> NgheNghiep;*  *private TableColumn<TableNhanThan, String> Moiquanhe;*  *private TableColumn<TableNhanThan, String> giamtruphuthuoc;* |

##### Tổ chức

**MÔ TẢ HOẠT ĐỘNG**

|  |  |
| --- | --- |
| **Sự kiện** | **Công việc** |
| initialize | *try {*  *Share.tcController = this;*  *//tạo các đối tượng DAO*  *pbdao = new PhongBanDAO();*  *cvdao = new ChucVuDAO();*  *tbl\_PBdao = new TablePhongBanDAO();*  *tbl\_CVdao = new TableChucVuDAO();*  *//chạy các phương thức khi khởi tạo*  *setTableColumn\_PB();*  *setTableColumn\_CV();*  *loadDataToTblPhongBan();*  *loadDataToTblChucVu();*  *newPB();*  *newCV();*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *}* |

**CÀI ĐẶT MÃ NGUỒN**

|  |
| --- |
| *private void setTableColumn\_PB() {*  *//Tạo và định dạng cột*  *deleteColumn\_PB = new TableColumn<>("");*  *deleteColumn\_PB.setCellValueFactory(new PropertyValueFactory<>("Delete"));*  *deleteColumn\_PB.setStyle( "-fx-alignment: CENTER-RIGHT; "*  *+ "-fx-border-width: 1 0 1 1; "*  *+ "-fx-border-color: transparent");*  *updateColumn\_PB = new TableColumn<>("");*  *updateColumn\_PB.setCellValueFactory(new PropertyValueFactory<>("Update"));*  *updateColumn\_PB.setStyle("-fx-alignment: CENTER-LEFT;");*  *col1\_PB = new TableColumn<>("Mã PB");*  *col1\_PB.setCellValueFactory(new PropertyValueFactory<>("MaPB"));*  *col1\_PB.setPrefWidth(190);*  *col2\_PB = new TableColumn<>("Tên PB");*  *col2\_PB.setCellValueFactory(new PropertyValueFactory<>("TenPB"));*  *col2\_PB.setPrefWidth(190);*  *//thêm các cột vào table*  *tblPhongBan.getColumns().addAll(deleteColumn\_PB, updateColumn\_PB, col1\_PB, col2\_PB);*  *}*  *private void setTableColumn\_CV() {*  *//Tạo và định dạng cột*  *deleteColumn\_CV = new TableColumn<>("");*  *deleteColumn\_CV.setCellValueFactory(new PropertyValueFactory<>("Delete"));*  *deleteColumn\_CV.setStyle( "-fx-alignment: CENTER-RIGHT; "*  *+ "-fx-border-width: 1 0 1 1; "*  *+ "-fx-border-color: transparent");*  *updateColumn\_CV = new TableColumn<>("");*  *updateColumn\_CV.setCellValueFactory(new PropertyValueFactory<>("Update"));*  *updateColumn\_CV.setStyle("-fx-alignment: CENTER-LEFT;");*  *col1\_CV = new TableColumn<>("Mã CV");*  *col1\_CV.setCellValueFactory(new PropertyValueFactory<>("MaCV"));*  *col1\_CV.setPrefWidth(100);*  *col2\_CV = new TableColumn<>("Tên CV");*  *col2\_CV.setCellValueFactory(new PropertyValueFactory<>("TenCV"));*  *col2\_CV.setPrefWidth(100);*  *col3\_CV = new TableColumn<>("Phụ cấp");*  *col3\_CV.setCellValueFactory(new PropertyValueFactory<>("PhuCap"));*  *col3\_CV.setPrefWidth(180);*  *//thêm các cột vào table*  *tblChucVu.getColumns().addAll(deleteColumn\_CV, updateColumn\_CV, col1\_CV, col2\_CV, col3\_CV);*  *}*  *private void loadDataToTblPhongBan() {*  *tblPhongBan.setItems(tbl\_PBdao.getData());*  *}*  *private void loadDataToTblChucVu() {*  *tblChucVu.setItems(tbl\_CVdao.getData());*  *}*  *public void setStatusPB(boolean insertablePB) {*  *this.insertablePB = insertablePB;*  *txtMaPB.setDisable(!insertablePB);*  *btnInsertPB.setDisable(!insertablePB);*  *btnUpdatePB.setDisable(insertablePB);*  *btnNewPB.setDisable(insertablePB);*  *}*  *public void setStatusCV(boolean insertableCV) {*  *this.insertableCV = insertableCV;*  *txtMaCV.setDisable(!insertableCV);*  *btnInsertCV.setDisable(!insertableCV);*  *btnUpdateCV.setDisable(insertableCV);*  *btnNewCV.setDisable(insertableCV);*  *}*  *private boolean checknullPB() {*  *if (Validate.isNull(txtMaPB, "Chưa nhập mã phòng ban")) {*  *return false;*  *}*  *if (Validate.isNull(txtTenPB, "Chưa nhập tên phòng ban")) {*  *return false;*  *}*  *return true;*  *}*  *private boolean checknullCV() {*  *if (Validate.isNull(txtMaCV, "Chưa nhập mã chức vụ")) {*  *return false;*  *}*  *if (Validate.isNull(txtTenCV, "Chưa nhập tên chức vụ")) {*  *return false;*  *}*  *return true;*  *}*  *private boolean checkDuplication() {*  *if (!insertablePB && pbdao.findByCode(txtMaPB.getText().trim()) != null) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, "Mã phòng ban đã tồn tại");*  *txtMaPB.requestFocus();*  *return false;*  *}*  *if (!insertableCV && cvdao.findByCode(txtMaCV.getText().trim()) != null) {*  *CustomDialog.showAlert(Alert.AlertType.WARNING, "Mã chức vụ đã tồn tại");*  *txtMaCV.requestFocus();*  *return false;*  *}*  *return true;*  *}*  *private boolean checkContent() {*  *//Kiểm tra hệ số lương*  *return !Validate.isNotMatches(txtPhuCap, "[0-9]+(\\.[0-9]+)?", "Phụ cấp không hợp lệ");*  *}*  *public void setModel(PhongBan pb) {*  *txtMaPB.setText(pb.getMaPB());*  *txtTenPB.setText(pb.getTenPB());*  *}*  *private PhongBan getModelPhongBan() {*  *PhongBan pb = new PhongBan();*  *pb.setMaPB(txtMaPB.getText());*  *pb.setTenPB(txtTenPB.getText());*  *return pb;*  *}*  *public void setModel(ChucVu cv) {*  *txtMaCV.setText(cv.getMaCV());*  *txtTenCV.setText(cv.getTenCV());*  *if (cv.getPhuCap() != null) {*  *txtPhuCap.setText(FormatNumber.formatDouble(cv.getPhuCap()));*  *} else {*  *txtPhuCap.setText(null);*  *}*  *}*  *public ChucVu getModelChucVu() {*  *ChucVu cv = new ChucVu();*  *cv.setMaCV(txtMaCV.getText());*  *cv.setTenCV(txtMaCV.getText());*  *cv.setPhuCap(Double.valueOf(txtPhuCap.getText()));*  *return cv;*  *}*  *@FXML*  *private void selectPhongBan(MouseEvent event) {*  *TablePhongBan tableModel = tblPhongBan.getSelectionModel().getSelectedItem();*  *PhongBan pb = pbdao.findByCode(tableModel.getMaPB()).get(0);*  *setModel(pb);*  *setStatusPB(false);*  *}*  *@FXML*  *private void selectChucVu(MouseEvent event) {*  *TableChucVu tableModel = tblChucVu.getSelectionModel().getSelectedItem();*  *ChucVu cv = cvdao.findByCode(tableModel.getMaCV()).get(0);*  *setModel(cv);*  *setStatusCV(false);*  *}*  *@FXML*  *private void newPB() {*  *setModel(new PhongBan());*  *setStatusPB(true);*  *}*  *@FXML*  *private void insertPB() {*  *if (checknullPB() && checkDuplication()) {*  *PhongBan pb = getModelPhongBan();*  *try {*  *pbdao.insert(pb);*  *loadDataToTblPhongBan();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "Managemnet System", "Thêm mới phòng ban thành công ");*  *newPB();*  *} catch (Exception e) {*  *CustomDialog.showAlert(Alert.AlertType.ERROR, Share.mainStage, "Managemnet System", "Thêm mới phòng ban thất bại! vui lòng kiểm tra lại ");*  *e.printStackTrace();*  *}*  *}*  *}*  *@FXML*  *private void updatePB() {*  *PhongBan pb = getModelPhongBan();*  *try {*  *pbdao.update(pb);*  *loadDataToTblPhongBan();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "Managemnet System", "Cập nhật phòng ban thành công ");*  *} catch (Exception e) {*  *CustomDialog.showAlert(Alert.AlertType.ERROR, Share.mainStage, "Managemnet System", "Cập nhật phòng ban thất bại! vui lòng kiểm tra lại ");*  *e.printStackTrace();*  *}*  *}*  *public void deletePB(PhongBan pb) {*  *try {*  *if (pbdao.delete(pb) > 0) {*  *loadDataToTblPhongBan();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, "Xóa phòng ban thành công ");*  *newPB();*  *}*  *} catch (Exception ex) {*  *CustomDialog.showAlert(Alert.AlertType.ERROR, "Xóa phòng ban thất bại ! vui lòng kiểm tra lại ");*  *ex.printStackTrace();*  *}*  *}*  *@FXML*  *private void newCV() {*  *setModel(new ChucVu());*  *setStatusCV(true);*  *}*  *@FXML*  *private void insertCV() {*  *if (checknullCV() && checkDuplication() && checkContent()) {*  *ChucVu cv = getModelChucVu();*  *try {*  *cvdao.insert(cv);*  *loadDataToTblChucVu();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "Managemnet System", "Thêm mới chức vụ thành công ");*  *newCV();*  *} catch (Exception e) {*  *CustomDialog.showAlert(Alert.AlertType.ERROR, Share.mainStage, "Managemnet System", "Thêm mới chức vụ thất bại ! vui lòng kiểm tra lại ");*  *e.printStackTrace();*  *}*  *}*  *}*  *@FXML*  *private void updateCV() {*  *if (checkContent()) {*  *ChucVu cv = getModelChucVu();*  *try {*  *cvdao.update(cv);*  *loadDataToTblChucVu();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "Managemnet System", "Cập nhật chức vụ thành công ");*  *} catch (Exception e) {*  *CustomDialog.showAlert(Alert.AlertType.ERROR, Share.mainStage, "Managemnet System", "Cập nhật chức vụ thất bại ! vui lòng kiểm tra lại");*  *e.printStackTrace();*  *}*  *}*  *}*  *public void deleteCV(ChucVu cv) {*  *try {*  *if (cvdao.delete(cv) > 0) {*  *loadDataToTblChucVu();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "Management System", "Xóa chức vụ thành công ");*  *newCV();*  *}*  *} catch (Exception ex) {*  *CustomDialog.showAlert(Alert.AlertType.ERROR, Share.mainStage, "Management System", "Xóa chức vụ thất bại! vui lòng kiểm tra lại ");*  *ex.printStackTrace();*  *}*  *}*  *//Khai báo các lớp DAO*  *private PhongBanDAO pbdao;*  *private ChucVuDAO cvdao;*  *private TablePhongBanDAO tbl\_PBdao;*  *private TableChucVuDAO tbl\_CVdao;*  *private Boolean insertablePB;*  *private Boolean insertableCV;*  *//Khai báo các cột cho bảng Phòng ban*  *private TableColumn<TablePhongBan, Button> deleteColumn\_PB;*  *private TableColumn<TablePhongBan, Button> updateColumn\_PB;*  *private TableColumn<TablePhongBan, String> col1\_PB;*  *private TableColumn<TablePhongBan, String> col2\_PB;*  *//Khai báo các cột cho bảng Chức vụ*  *private TableColumn<TableChucVu, Button> deleteColumn\_CV;*  *private TableColumn<TableChucVu, Button> updateColumn\_CV;*  *private TableColumn<TableChucVu, String> col1\_CV;*  *private TableColumn<TableChucVu, String> col2\_CV;*  *private TableColumn<TableChucVu, String> col3\_CV;* |

##### Chấm công

**MÔ TẢ HOẠT ĐỘNG**

|  |  |
| --- | --- |
| **Sự kiện** | **Công việc** |
| initialize | *try {*  *tbl\_ccdao = new TableChamCongDAO();*  *ccdao = new ChamCongDAO();*  *nvdao = new NhanVienDAO();*  *listUpdate = new ArrayList<>();*  *//load Tabpane1*  *loadCboNam1();*  *year1 = cboNam1.getSelectionModel().getSelectedItem();*  *loadCboThang1();*  *month1 = cboThang1.getSelectionModel().getSelectedItem();*  *loadChart();*  *//Loadtabpanel2*  *loadCboNam2();*  *year2 = cboNam2.getSelectionModel().getSelectedItem();*  *loadCboThang2();*  *month2 = cboThang2.getSelectionModel().getSelectedItem();*  *setColumnModel();*  *loadTable();*  *//load sự kiện*  *addListener();*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *}* |

**CÀI ĐẶT MÃ NGUỒN**

|  |
| --- |
| *private void loadCboNam1() {*  *cboNam1.getItems().clear();*  *cboNam1.setItems(ccdao.getListYear());*  *cboNam1.getSelectionModel().select(0);*  *}*  *private void loadCboThang1() {*  *cboThang1.getItems().clear();*  *for (int i = 1; i <= XDate.monthOfYear(year1); i++) {*  *cboThang1.getItems().add(i);*  *}*  *//mặc định cboThang chọn tháng hiện tại nếu năm đang chọn là năm hiện tại*  *//nếu không chọn tháng 1*  *if (year1 == LocalDate.now().getYear()) {*  *cboThang1.getSelectionModel().select(XDate.monthOfYear(year1) - 1);*  *} else {*  *cboThang1.getSelectionModel().select(0);*  *}*  *}*  *private void loadCboNam2() {*  *cboNam2.getItems().clear();*  *cboNam2.setItems(ccdao.getListYear());*  *cboNam2.getSelectionModel().select(0);*  *}*  *private void loadCboThang2() {*  *cboThang2.getItems().clear();*  *for (int i = 1; i <= XDate.monthOfYear(year2); i++) {*  *cboThang2.getItems().add(i);*  *}*  *//mặc định cboThang chọn tháng hiện tại nếu năm đang chọn là năm hiện tại*  *//nếu không chọn tháng 1*  *if (year2 == LocalDate.now().getYear()) {*  *cboThang2.getSelectionModel().select(XDate.monthOfYear(year2) - 1);*  *} else {*  *cboThang2.getSelectionModel().select(0);*  *}*  *}*  *private void addListener() {*  *//load lại cboThang1 khi thay đổi cboNam1*  *cboNam1.valueProperty().addListener(new ChangeListener<Integer>() {*  *@Override*  *public void changed(ObservableValue ov, Integer oldValue, Integer newValue) {*  *year1 = newValue;*  *loadCboThang1();*  *}*  *});*  *//load lại chart khi thay đổi cboThang1*  *cboThang1.valueProperty().addListener(new ChangeListener<Integer>() {*  *@Override*  *public void changed(ObservableValue ov, Integer oldValue, Integer newValue) {*  *try {*  *month1 = newValue;*  *} catch (Exception e) {*  *}*  *loadChart();*  *}*  *});*  *//load lại cboThang2 khi thay đổi cboNam2*  *cboNam2.valueProperty().addListener(new ChangeListener<Integer>() {*  *@Override*  *public void changed(ObservableValue ov, Integer oldValue, Integer newValue) {*  *year2 = newValue;*  *loadCboThang2();*  *}*  *});*  *//load lại table khi thay đổi cboThang1*  *cboThang2.valueProperty().addListener(new ChangeListener<Integer>() {*  *@Override*  *public void changed(ObservableValue ov, Integer oldValue, Integer newValue) {*  *try {*  *month2 = newValue;*  *} catch (Exception e) {*  *}*  *loadTable();*  *}*  *});*  *}*  *private void loadChart() {*  *chuyenCanChart.setData(ccdao.getDataForChuyenCanChart(year1, month1));*  *soNgayLamViecChart.setData(ccdao.getDataForSoNgayLamViecChart(year1, month1));*  *}*  *private void loadTable() {*  *tblChamCong.getItems().clear();*  *tblChamCong.setItems(tbl\_ccdao.getData(year2, month2));*  *disableCells();*  *}*  *private void setColumnModel() {*  *//Khai bao cot*  *maNVCol = new TableColumn<>("Mã nhân viên");*  *maNVCol.setCellValueFactory(new PropertyValueFactory<>("maNV"));*  *hoTenCol = new TableColumn<>("Họ tên");*  *hoTenCol.setCellValueFactory(new PropertyValueFactory<>("hoTen"));*  *phongBanCol = new TableColumn<>("Phòng ban");*  *phongBanCol.setCellValueFactory(new PropertyValueFactory<>("phongBan"));*  *col1 = new TableColumn<>("Ngày 1");*  *col2 = new TableColumn<>("Ngày 2");*  *col3 = new TableColumn<>("Ngày 3");*  *col4 = new TableColumn<>("Ngày 4");*  *col5 = new TableColumn<>("Ngày 5");*  *col6 = new TableColumn<>("Ngày 6");*  *col7 = new TableColumn<>("Ngày 7");*  *col8 = new TableColumn<>("Ngày 8");*  *col9 = new TableColumn<>("Ngày 9");*  *col10 = new TableColumn<>("Ngày 10");*  *col11 = new TableColumn<>("Ngày 11");*  *col12 = new TableColumn<>("Ngày 12");*  *col13 = new TableColumn<>("Ngày 13");*  *col14 = new TableColumn<>("Ngày 14");*  *col15 = new TableColumn<>("Ngày 15");*  *col16 = new TableColumn<>("Ngày 16");*  *col17 = new TableColumn<>("Ngày 17");*  *col18 = new TableColumn<>("Ngày 18");*  *col19 = new TableColumn<>("Ngày 19");*  *col20 = new TableColumn<>("Ngày 20");*  *col21 = new TableColumn<>("Ngày 21");*  *col22 = new TableColumn<>("Ngày 22");*  *col23 = new TableColumn<>("Ngày 23");*  *col24 = new TableColumn<>("Ngày 24");*  *col25 = new TableColumn<>("Ngày 25");*  *col26 = new TableColumn<>("Ngày 26");*  *col27 = new TableColumn<>("Ngày 27");*  *col28 = new TableColumn<>("Ngày 28");*  *col29 = new TableColumn<>("Ngày 29");*  *col30 = new TableColumn<>("Ngày 30");*  *col31 = new TableColumn<>("Ngày 31");*  *//them cot 32 de cot 31 ko bi thieu do dai*  *col32 = new TableColumn<>(" ");*  *//dinh dang CheckBox cho cac cot*  *col1.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay1());*  *addCheckBoxCellListener(booleanProp, obj, 1);*  *return booleanProp;*  *}*  *});*  *col2.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay2());*  *addCheckBoxCellListener(booleanProp, obj, 2);*  *return booleanProp;*  *}*  *});*  *col3.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay3());*  *addCheckBoxCellListener(booleanProp, obj, 3);*  *return booleanProp;*  *}*  *});*  *col4.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay4());*  *addCheckBoxCellListener(booleanProp, obj, 4);*  *return booleanProp;*  *}*  *});*  *col5.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay5());*  *addCheckBoxCellListener(booleanProp, obj, 5);*  *return booleanProp;*  *}*  *});*  *col6.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay6());*  *addCheckBoxCellListener(booleanProp, obj, 6);*  *return booleanProp;*  *}*  *});*  *col7.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay7());*  *addCheckBoxCellListener(booleanProp, obj, 7);*  *return booleanProp;*  *}*  *});*  *col8.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay8());*  *addCheckBoxCellListener(booleanProp, obj, 8);*  *return booleanProp;*  *}*  *});*  *col9.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay9());*  *addCheckBoxCellListener(booleanProp, obj, 9);*  *return booleanProp;*  *}*  *});*  *col10.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay10());*  *addCheckBoxCellListener(booleanProp, obj, 10);*  *return booleanProp;*  *}*  *});*  *col11.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay11());*  *addCheckBoxCellListener(booleanProp, obj, 11);*  *return booleanProp;*  *}*  *});*  *col12.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay12());*  *addCheckBoxCellListener(booleanProp, obj, 12);*  *return booleanProp;*  *}*  *});*  *col13.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay13());//khi thay đổi*  *addCheckBoxCellListener(booleanProp, obj, 13);*  *return booleanProp;*  *}*  *});*  *col14.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay14());*  *addCheckBoxCellListener(booleanProp, obj, 14);*  *return booleanProp;*  *}*  *});*  *col15.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay15());//khi thay đổi*  *addCheckBoxCellListener(booleanProp, obj, 15);*  *return booleanProp;*  *}*  *});*  *col16.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay16());*  *addCheckBoxCellListener(booleanProp, obj, 16);*  *return booleanProp;*  *}*  *});*  *col17.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay17());*  *addCheckBoxCellListener(booleanProp, obj, 17);*  *return booleanProp;*  *}*  *});*  *col18.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay18());*  *addCheckBoxCellListener(booleanProp, obj, 18);*  *return booleanProp;*  *}*  *});*  *col19.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay19());*  *addCheckBoxCellListener(booleanProp, obj, 19);*  *return booleanProp;*  *}*  *});*  *col20.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay20());*  *addCheckBoxCellListener(booleanProp, obj, 20);*  *return booleanProp;*  *}*  *});*  *col21.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay21());*  *addCheckBoxCellListener(booleanProp, obj, 21);*  *return booleanProp;*  *}*  *});*  *col22.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay22());*  *addCheckBoxCellListener(booleanProp, obj, 22);*  *return booleanProp;*  *}*  *});*  *col23.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay23());*  *addCheckBoxCellListener(booleanProp, obj, 23);*  *return booleanProp;*  *}*  *});*  *col24.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay24());*  *addCheckBoxCellListener(booleanProp, obj, 24);*  *return booleanProp;*  *}*  *});*  *col25.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay25());*  *addCheckBoxCellListener(booleanProp, obj, 25);*  *return booleanProp;*  *}*  *});*  *col26.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay26());*  *addCheckBoxCellListener(booleanProp, obj, 26);*  *return booleanProp;*  *}*  *});*  *col27.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay27());*  *addCheckBoxCellListener(booleanProp, obj, 27);*  *return booleanProp;*  *}*  *});*  *col28.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay28());*  *addCheckBoxCellListener(booleanProp, obj, 28);*  *return booleanProp;*  *}*  *});*  *col29.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay29());*  *addCheckBoxCellListener(booleanProp, obj, 29);*  *return booleanProp;*  *}*  *});*  *col30.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay30());*  *addCheckBoxCellListener(booleanProp, obj, 30);*  *return booleanProp;*  *}*  *});*  *col31.setCellValueFactory(new Callback<CellDataFeatures<TableChamCong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableChamCong, Boolean> param) {*  *TableChamCong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getNgay31());*  *addCheckBoxCellListener(booleanProp, obj, 31);*  *return booleanProp;*  *}*  *});*  *tblChamCong.getColumns().addAll(maNVCol, hoTenCol, phongBanCol, col1, col2, col3, col4, col5, col6, col7, col8, col9,*  *col10, col11, col12, col13, col14, col15, col16, col17, col18, col19, col20, col21, col22, col23, col24,*  *col25, col26, col27, col28, col29, col30, col31, col32);*  *for (int colIndex = 3; colIndex < tblChamCong.getColumns().size() - 1; colIndex++) {*  *TableColumn<TableChamCong, Boolean> BooleanCol = (TableColumn<TableChamCong, Boolean>) tblChamCong.getColumns().get(colIndex);*  *setCellFactor(BooleanCol);*  *}*  *}*  *private void setCellFactor(TableColumn<TableChamCong, Boolean> column) {*  *column.setCellFactory(new Callback<TableColumn<TableChamCong, Boolean>, TableCell<TableChamCong, Boolean>>() {*  *@Override*  *public TableCell<TableChamCong, Boolean> call(TableColumn<TableChamCong, Boolean> p) {*  *CheckBoxTableCell<TableChamCong, Boolean> cell = new CheckBoxTableCell<>();*  *return cell;*  *}*  *});*  *column.setStyle("-fx-alignment: CENTER;");*  *}*  *private void addCheckBoxCellListener(SimpleBooleanProperty booleanProp, TableChamCong obj, int dayOfMonth) {*  *booleanProp.addListener(new ChangeListener<Boolean>() {*  *@Override*  *public void changed(ObservableValue<? extends Boolean> observable, Boolean oldValue, Boolean newValue) {*  *listUpdate.add(new ChamCong(obj.getMaNV(), XDate.toDate(dayOfMonth + "/" + month2 + "/" + year2), newValue));*  *}*  *});*  *}*  *//Phuong thuc disable các ô là ngày lễ, CN, không tồn tại trong tháng*  *//hoặc trước ngày nhân viên bắt đầu đi làm*  *private void disableCells() {*  *ObservableList<TableColumn<TableChamCong, ?>> colList = tblChamCong.getColumns();*  *int maxDay = XDate.maxDaysOfMonth(year2, month2);*    *for (int dayOfMonth = 1; dayOfMonth <= 31; dayOfMonth++) {*  *Date date = XDate.toDate(dayOfMonth + "/" + month2 + "/" + year2);*  *//disable các ô là ngày lễ, CN và không tồn tại trong tháng*  *if (XDate.isHoliday(date) || dayOfMonth > maxDay) {*  *colList.get(dayOfMonth + 2).setEditable(false);*  *} else {*  *colList.get(dayOfMonth + 2).setEditable(true);*  *disableCellsBeforeStartWorking(dayOfMonth + 2);*  *}*  *}*  *}*  *private void disableCellsBeforeStartWorking(int colIndex) {*  *TableColumn<TableChamCong, Boolean> column = (TableColumn<TableChamCong, Boolean>) tblChamCong.getColumns().get(colIndex);*  *ArrayList<Integer> listDisableRowIndex = new ArrayList<>();*  *ObservableList<NhanVien> listNV = nvdao.findNVStartWorkingInMonth(year2, month2);*  *for (NhanVien nv : listNV) {*  *for (TableChamCong row : tblChamCong.getItems()) {*  *if (row.getMaNV().equals(nv.getMaNV())) {*  *LocalDate ngayVaoLam = XDate.toLocalDate(nv.getNgayVaoLam());*  *if (ngayVaoLam.getDayOfMonth() > (colIndex - 2)) {*  *listDisableRowIndex.add(tblChamCong.getItems().indexOf(row));*  *}*  *}*  *}*  *}*  *disableCellInColum(listDisableRowIndex, column);*  *}*  *private void disableCellInColum(ArrayList<Integer> listDisableRowIndex, TableColumn<TableChamCong, Boolean> column) {*  *column.setCellFactory(new Callback<TableColumn<TableChamCong, Boolean>, TableCell<TableChamCong, Boolean>>() {*  *@Override*  *public TableCell<TableChamCong, Boolean> call(TableColumn<TableChamCong, Boolean> param) {*  *return new CheckBoxTableCell<TableChamCong, Boolean>() {*  *@Override*  *public void updateItem(Boolean item, boolean empty) {*  *super.updateItem(item, empty);*  *try {*  *for (Integer rowIndex : listDisableRowIndex) {*  *if (getIndex() == rowIndex) {*  *setEditable(false);*  *}*  *}*  *} catch (Exception ex) {*  *}*  *}*  *};*  *}*  *});*  *}*  *@FXML*  *private void update() {*  *// for (TableChamCong tableChamCong : tblChamCong.getItems()) {*  *// for (int i = 0; i < 31; i++) {*  *// Date ngay = XDate.toDate((i + 1) + "/" + month2 + "/" + year2);*  *// if (!XDate.isHoliday(ngay) && (i + 1) <= XDate.maxDaysOfMonth(year2, month2)) {*  *// ChamCong cc = new ChamCong(tableChamCong.getMaNV(), ngay, true);*  *// if (ccdao.findByCode(cc.getMaNV(), cc.getNgay()) == null) {*  *// //Bản ghi không tồn tại -> insert*  *// ccdao.insert(cc);*  *// } else {*  *// //Bản ghi đã tồn tại -> update*  *// ccdao.update(cc);*  *// }*  *// }*  *// }*  *// }*  *for (ChamCong cc : listUpdate) {*  *//kiểm tra bản ghi có tồn tại hay không*  *if (ccdao.findByCode(cc.getMaNV(), cc.getNgay()) == null) {*  *//Bản ghi không tồn tại -> insert*  *ccdao.insert(cc);*  *} else {*  *//Bản ghi đã tồn tại -> update*  *ccdao.update(cc);*  *}*  *}*  *loadTable();*  *listUpdate.clear();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, "Cập nhật thành công");*  *}*  *private TableChamCongDAO tbl\_ccdao;*  *private ChamCongDAO ccdao;*  *private NhanVienDAO nvdao;*  *private int year1;//bien cua tab1*  *private int month1;*  *private int year2;//bien cua tab2*  *private int month2;*  *private ArrayList<ChamCong> listUpdate;*  *private TableColumn<TableChamCong, String> maNVCol;*  *private TableColumn<TableChamCong, String> hoTenCol;*  *private TableColumn<TableChamCong, String> phongBanCol;*  *private TableColumn<TableChamCong, Boolean> col1;*  *private TableColumn<TableChamCong, Boolean> col2;*  *private TableColumn<TableChamCong, Boolean> col3;*  *private TableColumn<TableChamCong, Boolean> col4;*  *private TableColumn<TableChamCong, Boolean> col5;*  *private TableColumn<TableChamCong, Boolean> col6;*  *private TableColumn<TableChamCong, Boolean> col7;*  *private TableColumn<TableChamCong, Boolean> col8;*  *private TableColumn<TableChamCong, Boolean> col9;*  *private TableColumn<TableChamCong, Boolean> col10;*  *private TableColumn<TableChamCong, Boolean> col11;*  *private TableColumn<TableChamCong, Boolean> col12;*  *private TableColumn<TableChamCong, Boolean> col13;*  *private TableColumn<TableChamCong, Boolean> col14;*  *private TableColumn<TableChamCong, Boolean> col15;*  *private TableColumn<TableChamCong, Boolean> col16;*  *private TableColumn<TableChamCong, Boolean> col17;*  *private TableColumn<TableChamCong, Boolean> col18;*  *private TableColumn<TableChamCong, Boolean> col19;*  *private TableColumn<TableChamCong, Boolean> col20;*  *private TableColumn<TableChamCong, Boolean> col21;*  *private TableColumn<TableChamCong, Boolean> col22;*  *private TableColumn<TableChamCong, Boolean> col23;*  *private TableColumn<TableChamCong, Boolean> col24;*  *private TableColumn<TableChamCong, Boolean> col25;*  *private TableColumn<TableChamCong, Boolean> col26;*  *private TableColumn<TableChamCong, Boolean> col27;*  *private TableColumn<TableChamCong, Boolean> col28;*  *private TableColumn<TableChamCong, Boolean> col29;*  *private TableColumn<TableChamCong, Boolean> col30;*  *private TableColumn<TableChamCong, Boolean> col31;*  *private TableColumn<TableChamCong, String> col32;* |

##### Bảng lương

**MÔ TẢ HOẠT ĐỘNG**

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| --- | --- |
| **Sự kiện** | **Công việc** |
| initialize | *try {*  *bldao = new BangLuongDAO();*  *tbl\_bldao = new TableBangLuongDAO();*  *listUpdate = new ArrayList<>();*  *//TabPane1*  *loadCboNam1();*  *year1 = cboNam1.getSelectionModel().getSelectedItem();*  *loadCboThang1();*  *month1 = cboThang1.getSelectionModel().getSelectedItem();*  *loadChart();*  *//TabPane2*  *loadCboNam2();*  *year2 = cboNam2.getSelectionModel().getSelectedItem();*  *loadCboThang2();*  *month2 = cboThang2.getSelectionModel().getSelectedItem();*  *setColumnModel();*  *loadTable(year2, month2);*  *setBtnNewStatus();*  *//Them su kien*  *addListener();*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *}* |

**CÀI ĐẶT MÃ NGUỒN**

|  |
| --- |
| *private void loadCboNam1() {*  *cboNam1.getItems().clear();*  *cboNam1.setItems(bldao.getListYear());*  *cboNam1.getSelectionModel().select(0);*  *}*  *private void loadCboThang1() {*  *cboThang1.getItems().clear();*  *int monthOfYear = XDate.monthOfYear(year1);*  *if (LocalDate.now().getDayOfMonth() < 5) {*  *monthOfYear = monthOfYear - 2;*  *} else {*  *monthOfYear = monthOfYear - 1;*  *}*  *for (int i = 1; i <= monthOfYear; i++) {*  *cboThang1.getItems().add(i);*  *}*    *//mặc định cboThang1 chọn tháng hiện tại nếu năm đang chọn là năm hiện tại*  *//nếu không chọn tháng 1*  *if (year1 == LocalDate.now().getYear()) {*  *cboThang1.getSelectionModel().select(monthOfYear - 1);*  *} else {*  *cboThang1.getSelectionModel().select(0);*  *}*  *}*  *private void loadCboNam2() {*  *cboNam2.getItems().clear();*  *cboNam2.setItems(bldao.getListYear());*  *cboNam2.getSelectionModel().select(0);*  *}*  *private void loadCboThang2() {*  *cboThang2.getItems().clear();*  *int monthOfYear = XDate.monthOfYear(year2);*  *if (LocalDate.now().getDayOfMonth() < 5) {*  *monthOfYear = monthOfYear - 2;*  *} else {*  *monthOfYear = monthOfYear - 1;*  *}*  *for (int i = 1; i <= monthOfYear; i++) {*  *cboThang2.getItems().add(i);*  *}*  *//mặc định cboThang chọn tháng hiện tại nếu năm đang chọn là năm hiện tại*  *//nếu không chọn tháng 1*  *if (year2 == LocalDate.now().getYear()) {*  *cboThang2.getSelectionModel().select(monthOfYear - 1);*  *} else {*  *cboThang2.getSelectionModel().select(0);*  *}*  *}*  *private void addListener() {*  *cboNam1.valueProperty().addListener(new ChangeListener<Integer>() {*  *@Override*  *public void changed(ObservableValue ov, Integer oldValue, Integer newValue) {*  *year1 = newValue;*  *loadCboThang1();*  *}*  *});*  *cboThang1.valueProperty().addListener(new ChangeListener<Integer>() {*  *@Override*  *public void changed(ObservableValue ov, Integer oldValue, Integer newValue) {*  *try {*  *month1 = newValue;*  *} catch (Exception e) {*  *}*  *loadChart();*  *}*  *});*  *cboNam2.valueProperty().addListener(new ChangeListener<Integer>() {*  *@Override*  *public void changed(ObservableValue ov, Integer oldValue, Integer newValue) {*  *year2 = newValue;*  *loadCboThang2();*  *}*  *});*  *cboThang2.valueProperty().addListener(new ChangeListener<Integer>() {*  *@Override*  *public void changed(ObservableValue ov, Integer oldValue, Integer newValue) {*  *try {*  *month2 = newValue;*  *} catch (Exception e) {*  *}*  *loadTable(year2, month2);*  *setBtnNewStatus();*  *}*  *});*  *}*  *private void loadChart() {*  *chartPhanHoaTienLuong.getData().clear();*  *chartPhanHoaTienLuong.getData().add(bldao.getDataForChartPhanHoaTienLuong(year1, month1));*  *chartTienLuongTheoPhongBan.getData().clear();*  *chartTienLuongTheoPhongBan.getData().add(bldao.getDataForChartTienLuongTheoPhongBan(year1, month1));*  *}*  *private void setColumnModel() {*  *//Khai bao cot*  *col1 = new TableColumn<>("Mã nhân viên");*  *col1.setCellValueFactory(new PropertyValueFactory<>("MaNV"));*  *col2 = new TableColumn<>("Họ tên");*  *col2.setCellValueFactory(new PropertyValueFactory<>("HoTen"));*  *col3 = new TableColumn<>("Phòng ban");*  *col3.setCellValueFactory(new PropertyValueFactory<>("TenPB"));*  *col4 = new TableColumn<>("Chức vụ");*  *col4.setCellValueFactory(new PropertyValueFactory<>("TenCV"));*  *col5 = new TableColumn<>("Ngày phát lương");*  *col5.setCellValueFactory(new PropertyValueFactory<>("NgayPhatLuong"));*  *col6 = new TableColumn<>("Lương chính");*  *col6.setCellValueFactory(new PropertyValueFactory<>("LuongChinh"));*  *col7 = new TableColumn<>("Ngày công");*  *col7.setCellValueFactory(new PropertyValueFactory<>("NgayCong"));*  *col8 = new TableColumn<>("Phụ cấp trách nhiệm");*  *col8.setCellValueFactory(new PropertyValueFactory<>("PC\_TrachNhiem"));*  *col9 = new TableColumn<>("Thu nhập");*  *col9.setCellValueFactory(new PropertyValueFactory<>("ThuNhap"));*  *col10 = new TableColumn<>("BHXH");*  *col10.setCellValueFactory(new PropertyValueFactory<>("BHXH"));*  *col11 = new TableColumn<>("BHYT");*  *col11.setCellValueFactory(new PropertyValueFactory<>("BHYT"));*  *col12 = new TableColumn<>("BHTN");*  *col12.setCellValueFactory(new PropertyValueFactory<>("BHTN"));*  *col13 = new TableColumn<>("Phụ thuộc");*  *col13.setCellValueFactory(new PropertyValueFactory<>("PhuThuoc"));*  *col14 = new TableColumn<>("Thuế TNCN");*  *col14.setCellValueFactory(new PropertyValueFactory<>("TNCN"));*  *col15 = new TableColumn<>("Thực lãnh");*  *col15.setCellValueFactory(new PropertyValueFactory<>("ThucLanh"));*  *col16 = new TableColumn<>("Trạng thái");*  *//dinh dang CheckBox*  *col16.setCellValueFactory(new Callback<CellDataFeatures<TableBangLuong, Boolean>, ObservableValue<Boolean>>() {*  *@Override*  *public ObservableValue<Boolean> call(CellDataFeatures<TableBangLuong, Boolean> param) {*  *TableBangLuong obj = param.getValue();*  *SimpleBooleanProperty booleanProp = new SimpleBooleanProperty(obj.getTrangThai());*  *//khi thay đổi*  *booleanProp.addListener(new ChangeListener<Boolean>() {*  *@Override*  *public void changed(ObservableValue<? extends Boolean> observable, Boolean oldValue,*  *Boolean newValue) {*  *listUpdate.add(new BangLuong(obj.getMaNV(), obj.getNgayPhatLuong(), newValue));*  *}*  *});*  *return booleanProp;*  *}*  *});*  *col16.setCellFactory(new Callback<TableColumn<TableBangLuong, Boolean>, TableCell<TableBangLuong, Boolean>>() {*  *@Override*  *public TableCell<TableBangLuong, Boolean> call(TableColumn<TableBangLuong, Boolean> p) {*  *CheckBoxTableCell<TableBangLuong, Boolean> cell = new CheckBoxTableCell<>();*  *return cell;*  *}*  *});*  *col16.setStyle("-fx-alignment: CENTER;");*    *tblBangLuong.getColumns().addAll(col1, col2, col3, col4, col5, col6, col7, col8, col9, col10, col11, col12, col13,*  *col14, col15, col16);*  *}*  *private void loadTable(int year, int month) {*  *tblBangLuong.setItems(tbl\_bldao.getData(year, month));*  *}*  *private void setBtnNewStatus() {*  *if (tblBangLuong.getItems().isEmpty()) {*  *btnNew.setDisable(false);*  *} else {*  *btnNew.setDisable(true);*  *}*  *}*  *@FXML*  *private void insert() {*  *ObservableList<NhanVien> data = new NhanVienDAO().findByMonth(year2, month2);*  *try {*  *for (NhanVien nv : data) {*  *BangLuong bl = new BangLuong(nv.getMaNV(), XDate.toDate("5/" + (month2 + 1) + "/" + year2), true);*  *if (bldao.insert(bl) == 0) {*  *throw new Exception();*  *}*  *}*  *loadTable(year2, month2);*  *setBtnNewStatus();*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "", "Tạo mới thành công");*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *}*  *}*  *@FXML*  *private void update() {*  *try {*  *for (BangLuong bangLuong : listUpdate) {*  *if (bldao.update(bangLuong) == 0) {*  *throw new Exception();*  *}*  *}*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, Share.mainStage, "", "Cập nhật thành công");*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *}*  *}*    *private BangLuongDAO bldao;*  *private TableBangLuongDAO tbl\_bldao;*  *private int year1;*  *private int month1;*  *private int year2;*  *private int month2;*  *private ArrayList<BangLuong> listUpdate;*  *private TableColumn<TableBangLuong, String> col1;*  *private TableColumn<TableBangLuong, String> col2;*  *private TableColumn<TableBangLuong, String> col3;*  *private TableColumn<TableBangLuong, String> col4;*  *private TableColumn<TableBangLuong, Date> col5;*  *private TableColumn<TableBangLuong, Integer> col6;*  *private TableColumn<TableBangLuong, Integer> col7;*  *private TableColumn<TableBangLuong, Integer> col8;*  *private TableColumn<TableBangLuong, Integer> col9;*  *private TableColumn<TableBangLuong, Integer> col10;*  *private TableColumn<TableBangLuong, Integer> col11;*  *private TableColumn<TableBangLuong, Integer> col12;*  *private TableColumn<TableBangLuong, Integer> col13;*  *private TableColumn<TableBangLuong, Integer> col14;*  *private TableColumn<TableBangLuong, Integer> col15;*  *private TableColumn<TableBangLuong, Boolean> col16;* |

##### Screenshot_23Tài Khoản

**MÔ TẢ HOẠT ĐỘNG**

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| **Sự kiện** | **Công việc** |
| initialize | *try {*  *tbl\_tkDAO = new TableTaiKhoanDAO();*  *tkDAO = new TaiKhoanDAO();*  *pbDAO = new PhongBanDAO();*  *nvDAO = new NhanVienDAO();*  *setTableColumn();*  *loadCboPhongBan();*  *loadCboNhanVien("");*  *loadDataToTable();*  *newTK();*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *}* |

**CÀI ĐẶT MÃ NGUỒN**

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| *private void loadCboPhongBan() {*  *cboPhongBan.setItems(pbDAO.findByCode(null));*  *cboPhongBan.valueProperty().addListener(new ChangeListener<PhongBan>() {*  *@Override*  *public void changed(ObservableValue<? extends PhongBan> observable, PhongBan oldValue, PhongBan newValue) {*  *if (newValue != null) {*  *loadCboNhanVien(newValue.getMaPB());*  *}*    *}*  *});*  *}*  *private void loadCboNhanVien(String maPB) {*  *cboNhanVien.setItems(nvDAO.findByMaPB(maPB));*  *}*  *private void setTableColumn() {*  *taiKhoanCol = new TableColumn<>("Tài khoản");*  *taiKhoanCol.setCellValueFactory(new PropertyValueFactory<>("tenTaiKhoan"));*  *taiKhoanCol.setPrefWidth(200);*  *nhanVienCol = new TableColumn<>("Nhân viên");*  *nhanVienCol.setCellValueFactory(new PropertyValueFactory<>("nhanVien"));*  *nhanVienCol.setPrefWidth(200);*  *phongBanCol = new TableColumn<>("Phòng ban");*  *phongBanCol.setCellValueFactory(new PropertyValueFactory<>("phongBan"));*  *phongBanCol.setPrefWidth(200);*  *tblTaiKhoan.getColumns().addAll(taiKhoanCol, nhanVienCol, phongBanCol);*  *}*  *private void loadDataToTable() {*  *tblTaiKhoan.setItems(tbl\_tkDAO.getData());*  *}*  *@FXML*  *private void selectTaiKhoan() {*  *try {*  *TableTaiKhoan tableTaiKhoan = tblTaiKhoan.getSelectionModel().getSelectedItem();*  *if (tableTaiKhoan != null) {*  *setStatus(false);*  *TaiKhoan tk = tkDAO.findByCode(tableTaiKhoan.getTenTaiKhoan());*  *setModel(tk);*  *}*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *}*  *}*  *private void setModel(TaiKhoan tk) {*  *txtTaikhoan.setText(tk.getTaiKhoan());*  *txtMatKhau.setText(tk.getMatKhau());*  *txtXacNhanMatKhau.setText(tk.getMatKhau());*  *if (tk.getMaNV() == null) {*  *cboPhongBan.getSelectionModel().clearSelection();*  *loadCboNhanVien("");*  *} else {*  *String maPB = nvDAO.findByCode(tk.getMaNV()).getMaPB();*  *for (PhongBan pb : cboPhongBan.getItems()) {*  *if (maPB.equals(pb.getMaPB())) {*  *cboPhongBan.getSelectionModel().select(pb);*  *}*  *}*  *for (NhanVien nv : cboNhanVien.getItems()) {*  *if (tk.getMaNV().equals(nv.getMaNV())) {*  *cboNhanVien.getSelectionModel().select(nv);*  *}*  *}*  *}*  *}*  *private TaiKhoan getModel() {*  *TaiKhoan tk = new TaiKhoan();*  *tk.setTaiKhoan(txtTaikhoan.getText());*  *tk.setMatKhau(txtMatKhau.getText());*  *tk.setMaNV(cboNhanVien.getSelectionModel().getSelectedItem().getMaNV());*  *return tk;*  *}*  *private void setStatus(boolean insertable) {*  *this.insertable = insertable;*  *btnThem.setDisable(!insertable);*  *btnCapNhat.setDisable(insertable);*  *btnXoa.setDisable(insertable);*  *btnTaoMoi.setDisable(insertable);*  *}*  *private boolean checknull() {*  *if (Validate.isNull(txtTaikhoan, "Chưa nhập tên tài khoản")) {*  *return false;*  *}*  *if (Validate.isNull(txtMatKhau, "Chưa nhập mật khẩu")) {*  *return false;*  *}*  *if (Validate.isNull(txtXacNhanMatKhau, "Chưa xác nhận mật khẩu")) {*  *return false;*  *}*  *if (Validate.isNotMatches(txtXacNhanMatKhau, txtMatKhau, "Mật khẩu xác nhận không đúng")) {*  *return false;*  *}*  *return true;*  *}*  *private boolean checkDuplication() {*  *if (insertable && tkDAO.findByCode(txtTaikhoan.getText().trim()) != null) {*  *CustomDialog.showAlert(Alert.AlertType.ERROR, "Tài khoản đã tồn tại");*  *txtTaikhoan.requestFocus();*  *return false;*  *}*  *return true;*  *}*  *public void newTK() {*  *setModel(new TaiKhoan());*  *setStatus(true);*  *}*  *private TableTaiKhoanDAO tbl\_tkDAO;*  *private TaiKhoanDAO tkDAO;*  *private PhongBanDAO pbDAO;*  *private NhanVienDAO nvDAO;*  *private boolean insertable;*  *private TableColumn<TableTaiKhoan, String> taiKhoanCol;*  *private TableColumn<TableTaiKhoan, NhanVien> nhanVienCol;*  *private TableColumn<TableTaiKhoan, PhongBan> phongBanCol;* |

##### Khôi phục

**MÔ TẢ HOẠT ĐỘNG**

|  |  |
| --- | --- |
| **Sự kiện** | **Công việc** |
| initialize | *try {*  *kpdao = new KhoiPhucDAO();*  *txtFullBackup.setText("Vui lòng chọn File");*  *txtDiffBackup.setText("Vui lòng chọn File");*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *}* |

**CÀI ĐẶT MÃ NGUỒN**

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| *@FXML*  *private void chooseFullBackupFile(ActionEvent event) {*  *File temporaryFile = openFolder();*  *if (temporaryFile != null) {*  *fullBackupFile = temporaryFile;*  *txtFullBackup.setText(fullBackupFile.getAbsolutePath());*  *}*  *if (fullBackupFile == null) {*  *txtFullBackup.setText("Vui lòng chọn File");*  *}*  *}*  *@FXML*  *private void chooseDiffBackupFile(ActionEvent event) {*  *File temporaryFile = openFolder();*  *if (temporaryFile != null) {*  *diffBackupFile = temporaryFile;*  *txtDiffBackup.setText(diffBackupFile.getAbsolutePath());*  *}*  *if (diffBackupFile == null) {*  *txtDiffBackup.setText("Vui lòng chọn File");*  *}*  *}*  *@FXML*  *private void deleteFullBackupFile(ActionEvent event) {*  *if (fullBackupFile != null) {*  *if (CustomDialog.confirm("Bạn chắc chắn muốn bỏ chọn File Full Backup này")) {*  *fullBackupFile = null;*  *txtFullBackup.setText("Vui lòng chọn File");*  *}*  *}*  *}*  *@FXML*  *private void deleteDiffBackupFile(ActionEvent event) {*  *if (diffBackupFile != null) {*  *if (CustomDialog.confirm("Bạn chắc chắn muốn bỏ chọn File Differential Backup này")) {*  *diffBackupFile = null;*  *txtDiffBackup.setText("Vui lòng chọn File");*  *}*  *}*  *}*  *private File openFolder() {*  *//loc file .bak*  *FileChooser.ExtensionFilter imageFilter = new FileChooser.ExtensionFilter("Local Backup File", "\*.bak");*  *FileChooser fileChooser = new FileChooser();*  *fileChooser.getExtensionFilters().add(imageFilter);*  *return fileChooser.showOpenDialog(Share.mainStage);*  *}*  *@FXML*  *private void restore(ActionEvent event) {*  *if (fullBackupFile == null) {*  *CustomDialog.showAlert(Alert.AlertType.ERROR, "Bạn chưa chọn file backup nào");*  *return;*  *}*  *if (fullBackupFile != null && diffBackupFile == null) {*  *restoreDBOnlyFullBackup(txtFullBackup.getText());*  *}*  *if (fullBackupFile != null && diffBackupFile != null) {*  *restoreDBWithDifferential(txtFullBackup.getText(), txtDiffBackup.getText());*  *}*  *}*  *private void restoreDBOnlyFullBackup(String fullPath) {*  *if (CustomDialog.confirm("Bạn chắc chắn muốn khôi phục Cơ sở dữ liệu chỉ với file Full backup")) {*  *try {*  *if (kpdao.restoreDBOnlyFullBackup(fullPath)) {*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, "Khôi phục thành công");*  *} else {*  *throw new Exception();*  *}*  *} catch (Exception ex) {*  *CustomDialog.showAlert(Alert.AlertType.ERROR, "Khôi phục thất bại. Vui lòng kiểm tra lại");*  *ex.printStackTrace();*  *}*  *}*  *}*  *private void restoreDBWithDifferential(String fullPath, String diffPath) {*  *if (CustomDialog.confirm("Bạn chắc chắn muốn khôi phục Cơ sở dữ liệu với file Differential backup")) {*  *try {*  *if (kpdao.restoreDBWithDifferential(fullPath, diffPath)) {*  *CustomDialog.showAlert(Alert.AlertType.INFORMATION, "Khôi phục thành công");*  *} else {*  *throw new Exception();*  *}*  *} catch (Exception ex) {*  *CustomDialog.showAlert(Alert.AlertType.ERROR, "Khôi phục thất bại. Vui lòng kiểm tra lại");*  *ex.printStackTrace();*  *}*  *}*  *}*  *private KhoiPhucDAO kpdao;*  *private File fullBackupFile = null;*  *private File diffBackupFile = null;* |

##### Đổi mật khẩu

**MÔ TẢ HOẠT ĐỘNG**

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| **Sự kiện** | **Công việc** |
| initialize | *try {*  *tkdao = new TaiKhoanDAO();*  *validatorInit();*  *} catch (Exception ex) {*  *ex.printStackTrace();*  *}* |

**CÀI ĐẶT MÃ NGUỒN**

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| *public void validatorInit() {*  *txtMatKhauCu.getValidators().add(Validate.createValidatorJFX("Vui lòng nhập tài khoản"));*  *txtMatKhauCu.focusedProperty().addListener(new ChangeListener<Boolean>() {*  *@Override*  *public void changed(ObservableValue<? extends Boolean> observable, Boolean oldValue, Boolean newValue) {*  *if (!newValue) {*  *txtMatKhauCu.validate();*  *}*  *}*  *});*    *txtMatKhauMoi.getValidators().add(Validate.createValidatorJFX("Vui lòng nhập mật khẩu"));*  *txtMatKhauMoi.focusedProperty().addListener(new ChangeListener<Boolean>() {*  *@Override*  *public void changed(ObservableValue<? extends Boolean> observable, Boolean oldValue, Boolean newValue) {*  *if (!newValue) {*  *txtMatKhauMoi.validate();*  *}*  *}*  *});*    *txtXacNhanMatKhau.getValidators().add(Validate.createValidatorJFX("Vui lòng nhập mật khẩu"));*  *txtXacNhanMatKhau.focusedProperty().addListener(new ChangeListener<Boolean>() {*  *@Override*  *public void changed(ObservableValue<? extends Boolean> observable, Boolean oldValue, Boolean newValue) {*  *if (!newValue) {*  *txtXacNhanMatKhau.validate();*  *}*  *}*  *});*  *}*  *@FXML*  *void changePassword() {*  *if (!txtMatKhauCu.validate() || !txtMatKhauMoi.validate() || !txtXacNhanMatKhau.validate()) {*  *CustomDialog.showAlert(AlertType.ERROR, Share.secondStage, "Vui lòng nhập đầy đủ");*  *return;*  *}*  *if (!txtMatKhauCu.getText().equals(Share.USER.getMatKhau())) {*  *CustomDialog.showAlert(AlertType.ERROR, Share.secondStage, "Mật khẩu cũ không chính xác");*  *txtXacNhanMatKhau.requestFocus();*  *return;*  *}*  *if (!txtMatKhauMoi.getText().equals(txtXacNhanMatKhau.getText())) {*  *CustomDialog.showAlert(AlertType.ERROR, Share.secondStage, "Xác nhận mật khẩu phải trùng với mật khẩu mới");*  *txtXacNhanMatKhau.requestFocus();*  *return;*  *}*  *TaiKhoan tk = new TaiKhoan();*  *tk.setMaNV(Share.USER.getMaNV());*  *tk.setTaiKhoan(Share.USER.getTaiKhoan());*  *tk.setMatKhau(txtMatKhauMoi.getText());*  *int kq = tkdao.update(tk);*  *if (kq == 0) {*  *CustomDialog.showAlert(AlertType.ERROR, Share.secondStage, "Có lỗi xảy ra, không thể đổi mật khẩu");*  *} else {*  *CustomDialog.showAlert(AlertType.INFORMATION, Share.secondStage, "Đổi mật khẩu thành công");*  *Share.USER = tk;*  *}*  *}*  *@FXML*  *void enterToChange(KeyEvent event) {*  *if (event.getCode() == KeyCode.ENTER) {*  *btnLogin.fire();*  *}*  *}*    *@FXML*  *void cancel(ActionEvent event) {*  *Share.secondStage.close();*  *}*  *private TaiKhoanDAO tkdao;*  *@FXML*  *private JFXButton btnLogin;*  *@FXML*  *private JFXPasswordField txtMatKhauCu;*  *@FXML*  *private JFXPasswordField txtXacNhanMatKhau;*  *@FXML*  *private JFXPasswordField txtMatKhauMoi;* |

## Kiểm thử

### Kiểm thử Scene NhanVien

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| **Thuộc tính** | **Thao tác** | | |
| **Thêm mới** | **Cập nhật** | **Xóa** |
| **Mã nhân viên** | Không cho chỉnh sửa | Không cho chỉnh sửa |  |
| **Họ tên** | Không được để trống  Không chứa số và các ký tự đặc biệt | Không được để trống  Không chứa số và các ký tự đặc biệt |  |
| **Giới tính** | Phải được chọn | Phải được chọn |  |
| **Ngày sinh** | Trước năm hiện tại ít nhất 16 năm | Trước năm hiện tại ít nhất 16 năm |  |
| **CMND** | Chỉ được nhập từ 9 đến 10 chữ số  Không được trùng số CMND  Không được để trống | Không được để trống |  |
| **Số điện thoại** | Chỉ được nhập từ 9-10 chữ số  Không được để trống | Không được để trống |  |
| **Địa chỉ** | Không được để trống | Không được để trống |  |
| **Trình độ học vấn** | Không được để trống | Không được để trống |  |
| **Trạng thái** | Phải được chọn | Phải được chọn |  |
| **Mã hợp đồng** | Không cho chỉnh sửa | Không cho chỉnh sửa |  |
| **Hệ số lương** | Không được để trống  Chỉ được nhập chữ số | Không được để trống  Chỉ được nhập chữ số |  |
| **Kỹ thuật** | Phải được chọn | Phải được chọn |  |
| **Trưởng phòng** | Phải được chọn | Phải được chọn |  |
| **Ngày bắt đầu** | Không được trùng ngày kết thúc | Không được trùng ngày kết thúc |  |
| **Ngày kết thúc** | Không được trùng ngày kết thúc | Không được trùng ngày kết thúc |  |

### Kiểm thử Scene ToChuc

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| **Thuộc tính** | **Thao tác** | | |
| **Thêm mới** | **Cập nhật** | **Xóa** |
| **Mã phòng ban** | Không được để trống  Chỉ chứa 2 chữ cái in hoa  Không được trùng lặp | Không được để trống  Chỉ chứa 2 chữ cái in hoa |  |
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### Kiểm thử Scene TaiKhoan

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| **Thuộc tính** | **Thao tác** | | |
| **Thêm mới** | **Cập nhật** | **Xóa** |
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### Kiểm thử Scene DoiMatKhau

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| **Thuộc tính** | **Thao tác** | | |
| **Thêm mới** | **Cập nhật** | **Xóa** |
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### Kiểm thử Scene KhoiPhuc

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| **Thuộc tính** | **Thao tác** | | |
| **Thêm mới** | **Cập nhật** | **Xóa** |
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