

Application Report

StudifyALLin1

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This application was created as part of the Business Data Management (BDM) capstone project. The company I chose is a B2C medium-sized private company named "Studify Consultants.". The third problem statement for the project is: "**Developing a way to access a person's data easily and in a time-efficient manner.**", here, the term "person" refers to an applicant or customer. After brainstorming, I decided to develop a web application for the company to address this issue by streamlining the process of managing applicant data, including creation, updating, and accessing records.

Description of the Application:

The application, named **StudifyALLin1**, was developed with the following technology stack:

Backend:

- **Flask:** Used as the backend framework for handling requests and application logic.
- **SQLAlchemy:** Employed as the Object Relational Mapper (ORM).

Database:

- **PostgreSQL:** Chosen as the database for storing and managing data.

Frontend:

- **HTML, Bootstrap, JavaScript:** For designing and building the user interface.
- **Jinja2 Templates:** Used for dynamic content rendering.

The application's functionality is tailored to align with the company's assessment form. It can be hosted locally over the company's Wi-Fi network, with a single computer (either the Director's or another administrator's) serving as the server.

Core Functionalities

1. **Roles:** Three distinct roles—Admin, Employee, and Applicant.
2. **Admin Capabilities:**
 - Create employee accounts.
 - Update employee details (excluding passwords).
 - View all applicant data associated with their employees.
 - Change their password.
 - Create and update applicant data.
3. **Employee Capabilities:**
 - Change their password.
 - Create and update applicant data.
4. **Data Management:** Admins and employees can create and update applicant data.
5. **File Export:** A feature to download filled forms in Word or PDF format.

Technologies and Libraries Used:

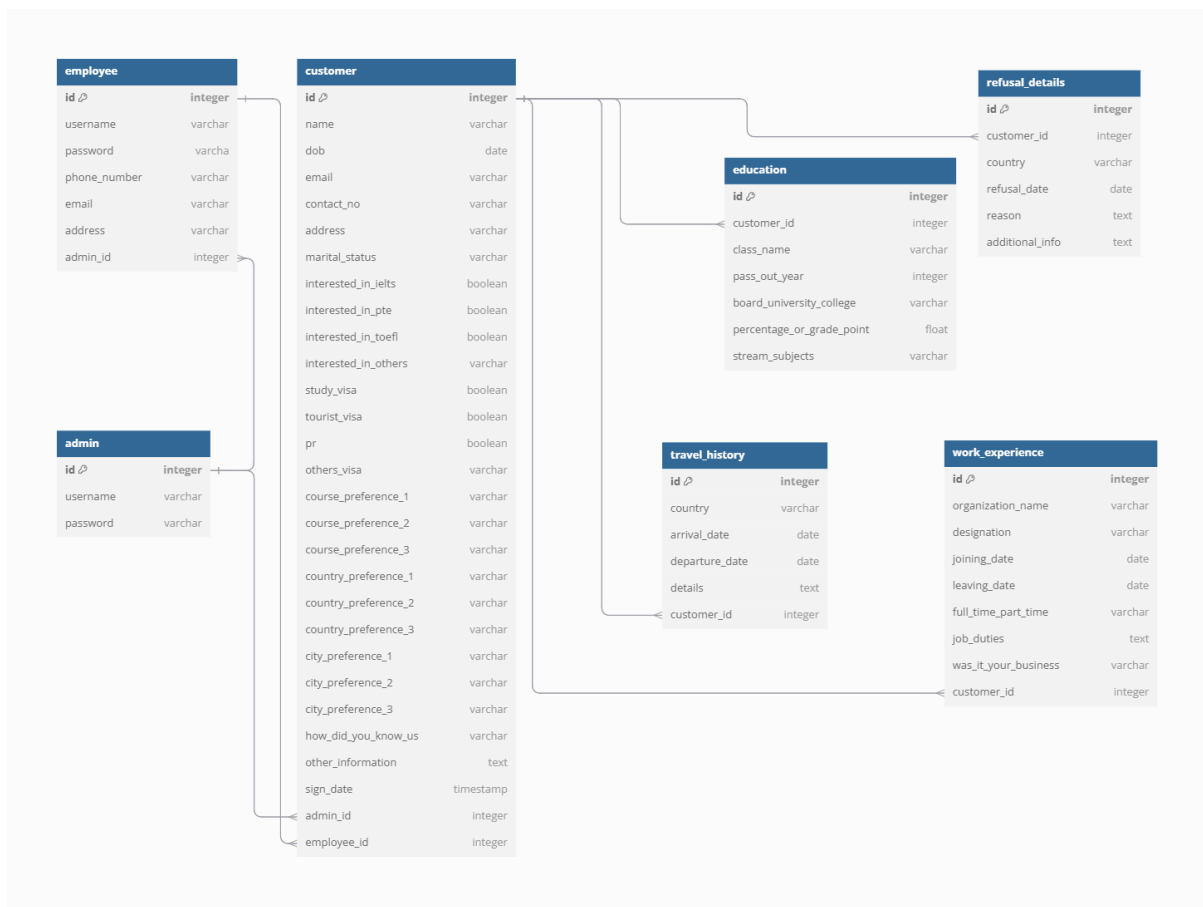
1. **Flask:** For backend development and application logic.
2. **SQLAlchemy:** ORM for seamless database operations.
3. **Flask-SQLAlchemy:** Extension for managing database connections.
4. **Flask-Migrate:** Tool for managing database migrations.
5. **Flask-Login:** For user authentication and session management.
6. **Flask-WTF:** Facilitates form handling with validation.
7. **Jinja2 Templates:** Enables dynamic HTML rendering.
8. **Bootstrap:** For responsive and visually appealing UI.
9. **PostgreSQL:** Reliable database management system.
10. **Python-docx:** For generating Word documents.
11. **ReportLab:** For PDF generation.
12. **Werkzeug:** Handles routing, debugging, and security.
13. **WTForms:** Simplifies form creation and validation.

Architecture and Structure

The project folder, **StudifyALLin1**, contains the following key components:

- **app Folder:** Contains essential application logic and subdirectories:
 - **__init__.py:** Initializes the Flask app, configures it, and connects to the database.
 - **models.py:** Defines database schema.
 - **routes.py:** Manages routing and logic.
 - **forms.py:** Handles form structures and validation.
 - **templates Folder:** Stores HTML templates categorized into admin, employee, and applicant folders.
- **run.py:** Entry point for starting the application.
- **migrations Folder:** Manages database migrations.
- **static Folder:** Contains PDF and Word files for export and other static assets.
- **Virtual Environment:** Separate venv folder outside the project for dependency management, like libraries, scripts, etc.

Database Schema Design:



Video:

Google Drive Links:

Demo Video –

https://drive.google.com/file/d/19QV_5FdE40UxUdWzIrGK09R4PMc3DFGx/view?usp=drive_link

Conclusion

The StudifyALLin1 application focuses on efficiency, scalability, and meeting the company's specific needs. It allows employees to input applicant data directly through a user-friendly form, removing reliance on Excel files or manual hard copy entries. This ensures easy access, better data management, and significant time savings, providing a reliable local solution for managing applicants, employees, and admin workflows.