**Technical Documentation:** Career Lunch

**1. Overview**

Career Lunch is a recruitment platform designed to connect companies with talented individuals. The platform is built with scalability and ease of use in mind, offering features for both job seekers and employers.

**2. Technologies Used**

**Frontend:**

* **Framework:** ASP.NET MVC
* **Styling:** HTML5, CSS3, Bootstrap
* **Interactivity:** JavaScript, jQuery

**Backend:**

* **Language:** C#
* **Framework:** ASP.NET Core
* **Database:** Microsoft SQL Server

**Hosting & Infrastructure:**

* **Hosting Platform:** Microsoft Azure
* **Storage:** Azure Blob Storage (for files and media).

**Automation (RPA):**

* **Tool:** UiPath
* **Processes Automated:**
  1. Job Applications Management
  2. Contact Management

**3. System Architecture**

**High-Level Architecture:**

* **Client-Side:** Handles user interaction through responsive UI components.
* **Server-Side:** Processes requests, communicates with the database, and performs business logic.
* **Database:** Stores user information, job postings, and platform data.

**Core Components:**

1. **Job Seeker Module:**
   * Profile creation and management.
   * Job search and application.
2. **Employer Module:**
   * Company profile management.
   * Job posting and candidate filtering.
3. **Admin Dashboard:**
   * Manage users, jobs, and platform settings.
4. **Automation:**
   * Application and contact workflows automated for efficiency.

**4. Database Design**

**Key Tables:**

1. **Users Table:**
   * Stores user credentials and roles (e.g., job seeker, employer, admin).
2. **Profiles Table:**
   * Stores additional details for job seekers and employers.
3. **Jobs Table:**
   * Stores job postings, descriptions, and application details.
4. **Applications Table:**
   * Tracks job applications submitted by users.

**Relationships:**

* **One-to-Many:**
  + Employers ↔ Job Postings
  + Job Postings ↔ Applications
* **Many-to-Many:**
  + Users ↔ Skills

**5. Key Features Implementation**

**Frontend:**

* Responsive design for desktop and mobile.
* Dynamic filtering using jQuery.
* Form validation for user input.

**Backend:**

* Role-based authentication and authorization.
* Data validation using Fluent Validation.

**Automation:**

1. **Job Applications Workflow:**
   * Automatically process and track job applications.
2. **Contact Workflow:**
   * Automates communication between employers and job seekers.

**6. Deployment Details**

1. **Environment:**
   * **Development:** Local machine using IIS Express.
   * **Staging/Production:** Azure Web Services.
2. **Deployment Pipeline:**
   * Code changes pushed to GitHub/GitLab.
   * Automated CI/CD pipelines for building and deploying updates.
3. **Database:**
   * Hosted on Azure SQL Database.
   * Regular backups configured for disaster recovery.

**7. Security Measures**

* **Data Protection:**
  + Passwords encrypted using ASP.NET Identity.
  + HTTPS enforced for all traffic.
* **Access Control:**
  + Role-based access implemented (Admin, Job Seeker, Employer).
* **Validation:**
  + Input sanitized to prevent SQL injection and XSS attacks.

**8. Testing**

**Testing Strategy:**

* **Unit Testing:**
  + Validate individual components (e.g., backend logic).
* **Integration Testing:**
  + Ensure seamless interaction between modules (e.g., frontend and backend).
* **UI Testing:**
  + Validate user interface usability and responsiveness.
* **RPA Testing:**
  + Test automation workflows to ensure accuracy and efficiency.

**Tools Used:**

* NUnit for unit testing.
* Selenium for automated UI testing.
* UiPath Testing Suite for RPA.

**9. Maintenance & Scalability**

1. **Maintenance:**
   * Bug tracking using Azure DevOps.
   * Regular updates for dependencies and libraries.
2. **Scalability:**
   * Designed to handle growing numbers of users.
   * Azure services configured for horizontal scaling.

**10. Future Enhancements**

* **Adding AI Features:**
  + AI-powered job recommendations.
  + Resume parsing and candidate matching.
* **E-commerce Integration:**
  + Membership plans and premium job postings.
* **Advanced Analytics:**
  + Provide employers with detailed insights about job applications.

**11. Prepared By**

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