



Business Template

Recruitment Agency

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1 Business Description

1.1 Business Background

Our company is a Recruitment Agency that offers a complete range of services to both candidates and employers. We specialize in managing job listings, candidate registrations, and tracking applications. Our system matches candidates with job listings based on specific criteria such as skills, experience, location, and preferences, ensuring the best fit between job seekers and employers.

In addition to our core services, we provide value-added services like resume writing, interview coaching, and skills development. These additional services are designed to help candidates improve their job prospects by enhancing their resumes, preparing for interviews, and acquiring new skills.

1.2 Problems, Current Situation

Currently, the recruitment process can be time-consuming, with job seekers struggling to match their skills and experience to the right opportunities. Employers face difficulty in filtering through large pools of applicants and often miss out on ideal candidates due to inefficient matching systems.

Our recruitment process can be enhanced by a more integrated database and an efficient data warehouse (DWH) system that can store, manage, and analyze data from both candidates and employers in real-time.

1.3 The Benefits of Implementing a Database. Project Vision

Implementing a dedicated database system will streamline the recruitment process, automate job matching, and enhance candidate experience by providing them with personalized job recommendations. It will also help employers by providing a fast and reliable way to find the best candidates based on key criteria.

Additionally, having a database to manage candidate profiles, job listings, and application status will allow our team to improve tracking, reporting, and decision-making processes. The implementation of a data warehouse (DWH) will allow for more robust analysis of recruitment trends, candidate success, and overall performance.

2 Model Description

2.1 Definitions & Acronyms

- **DWH** – Data Warehouse
- **ETL** – Extract, Transform, Load
- **Candidate** – A job seeker who registers on the platform.
- **Company** – An entity posting job listings and hiring candidates.
- **Recruiter** – A person that operates within a specific company on a specific position.
- **Job Listing** – A job vacancy posted by an employer.
- **Application** – A record of a candidate applying for a job.
- **Interview** – A scheduled meeting between a candidate and an employer.
- **Placement** – A candidate hired for a specific job.
- **Service** – Additional services availed by candidates, such as resume writing or interview coaching.

2.2 Logical Scheme

The database will be designed with the following key tables and their relationships:

- **Candidate:** Stores details of job seekers.
- **Job Listing:** Stores job postings from companies.
- **Company:** Stores details of hiring companies.
- **Application:** Tracks applications submitted by candidates.
- **Interview:** Tracks interviews scheduled between candidates and employers.
- **Placement:** Stores placement records for successful candidates.
- **Service:** Tracks additional services used by candidates (e.g., resume writing, interview coaching).
- **Recruiter:** Stores information about recruiters managing job postings and candidate applications.
- **Payment:** Tracks payments made by candidates for premium services.
- **Job Alert:** Stores job alert subscriptions for candidates.
- **Resume:** Stores uploaded resumes.

2.3 Objects

Name	Field	Field Description	Data Type
Candidate	candidate_id	Unique Identifier for Candidate (PK)	INT
	name	Candidate's Name	VARCHAR
	email	Candidate's Email Address (Unique)	VARCHAR
	phone	Candidate's Phone Number (Unique)	VARCHAR
	experience	Candidate's Experience(Unique)	INT
	location	Candidate's location(Unique)	VARCHAR
	resume	Path to Candidate's Resume File	VARCHAR
Skill	skill_id	Unique Identifier for Skill (PK)	INT
	skill_name	Name of the skill	VARCHAR
Skill_Candidate	(candidate_id, skill_id)	Unique Identifier for Skill (PK)	INT
	candidate_id	identifier for a candidate(FK)	INT
	skill_id	identifier for Skill(FK)	INT
	skill_level	Proficiency level (e.g., Beginner, Intermediate, Expert)	ENUM
Preference_Candidate	(candidate_id, preference_id)	Unique Identifier for Skill (PK)	INT
	preference_id	identifier for preference(FK)	
	candidate_id	identifier for a candidate(FK)	INT
	preference_level	The level of satisfaction (e.g., highly satisfied,satisfied, standard)	ENUM
Preference	preference_id	Unique Identifier for Preference (PK)	INT
	desired_salary	Expected Salary	DECIMAL
	preferred_location	Preferred Job Location	VARCHAR
	preferred_job_type	Type of Job (ENUM: 'Part-Time', 'Full-Time', 'Remote')	ENUM
	preferred_industry	Preferred Industry	VARCHAR

Name	Field	Field Description	Data Type
Skill_Listing	(skill_id, job_id)	Unique Identifier for Skill Listing (PK)	
	skill_id	identifier for Skill (FK)	
	job_id	Identifier for job	
	skill_level_required	Proficiency level required(e.g., Beginner, Intermediate, Expert)	ENUM
Job_Listing	job_id	Unique Identifier for Job Listing (PK)	INT
	company_id	Company ID posting the job (FK)	
	recruiter_id	Recruiter ID posting the job (FK)	
	title	Job Title	VARCHAR
	description	Job Description	TEXT
	job_location	Job Location	VARCHAR
	posted_date	Date the Job was Posted	DATE
	experience_required	Years of experience	INT
	job_type	Type of job(e.g."Part-time","Full-time", "Remote")	ENUM
Application	job_status	Job Status (e.g.'Open', 'Closed', 'Filled')	ENUM
	application_id	Unique Identifier for Application (PK)	INT
	candidate_id	Candidate applying for the job (FK)	
	job_id	Job applied for (FK)	
	application_status	Application Status (e.g. 'Applied', 'Under Review', 'Rejected', 'Hired')	ENUM
Interview	applied_date	Date the Application was submitted	DATE
	interview_id	Unique Identifier for Interview (PK)	INT
	candidate_id	Candidate being interviewed (FK)	
	job_id	Job associated with interview (FK)	
	interview_status	Interview Status (e.g. 'Scheduled', 'Completed', 'Canceled')	ENUM
	interview_date	Date and Time of Interview	TIMESTAMP
Placement	feedback	Feedback from the Interviewer	TEXT
	placement_id	Unique Identifier for Placement (PK)	INT
	candidate_id	Candidate placed in the job (FK)	
	job_id	Job in which candidate was placed (FK)	
Service	company_id	Company that hired the candidate (FK)	
	placement_date	Date of Placement	DATE
	salary	Salary for the job placement	DECIMAL
Service	service_id	Unique Identifier for Service (PK)	INT
	candidate_id	Candidate availing the service (FK)	
	service_type	Type of Service (e.g. 'Resume Writing', 'Interview Coaching', 'Skills Development')	ENUM
	service_status	Service Status (e.g. 'Pending', 'Completed')	ENUM
Recruiter	recruiter_id	Unique Identifier for Recruiter (PK)	INT
	company_id	Company associated with the recruiter (FK)	INT
	recruiter_name	Recruiter's Name	VARCHAR
	recruiter_email	Recruiter's Email Address (Unique)	VARCHAR
	recruiter_phone	Recruiter's Phone Number (Unique)	VARCHAR
Payment	payment_id	Unique Identifier for Payment (PK)	INT
	candidate_id	Candidate making the payment (FK)	

Name	Field	Field Description	Data Type
	service_id	The type of service, the payment was made to (FK)	
	amount	Amount Paid for the service	DECIMAL
	payment_date	Date the payment was made	DATE
	payment_status	Payment Status (e.g. 'Pending', 'Completed')	ENUM
Job_alert	alert_id	Unique Identifier for Job Alert (PK)	INT
	candidate_id	Candidate subscribed to the job alert (FK)	
	job_category	Job Category for Alert	VARCHAR
	frequency	Alert Frequency (e.g. 'Daily', 'Weekly')	ENUM
	alert_status	Alert Status (e.g. 'Active', 'Inactive')	ENUM
Company	company_id	Unique Identifier for company (PK)	INT
	company_name	Name of the company	VARCHAR
	company_industry	The industry the company is in	VARCHAR
	headquarters	The main offices of the company	VARCHAR
	contact_email	email of the company	VARCHAR
	contact_phone	the phone of the company	VARCHAR

2.4 Relationships

Table 2: Entity-Relationship Table

Entity A	Entity B	Type	Description
Candidate	Job_Listing	Many-to-Many(via Application and via Interview)	A candidate can apply to multiple jobs and multiple candidates can apply for a job position
Candidate	Interview	One-to-Many	A candidate can have multiple interviews.
Candidate	Skill	Many-to-Many (via Skill_Candidate)	A candidate can have multiple skills (programming, qualifications, etc.) and a skill can be owned by multiple candidates
Candidate	Preference	Many-to-Many(via Preference_Candidate)	A candidate can have multiple job preferences (salary, industry, etc.). and multiple candidates can have the same job preference
Candidate	Payment	One-to-Many	A candidate can make multiple payments for different services.
Candidate	Service	One-to-Many	A candidate can use multiple services.
Candidate	Placement	One-to-one	A candidate can be hired(placed) in only one position at a time.
Candidate	Job_alert	One-to-Many	A candidate can be subscribed to multiple types of job alerts.
Recruiter	Job_Listing	One-to-Many	A recruiter manages multiple job listings.
Company	Job_Listing	One-to-Many	A company posts multiple job listings.
Company	Recruiter	One-to-Many	A company can have multiple recruiters for different job listings.
Company	Placement	One-to-many	A company can have multiple placements for different positions
Job_Listing	Placement	One-to-One	A job in my definition is filled after a the position is filled by a candidate .
Job Listing	Skill	Many-to-Many (via Skill_Listing)	A job listing can require different skills and a skill can be required by different jobs.
Payment	Service	One-to-one	A payment is made for a specific service.

2.5 Example with data

I provided several tables with data, using abbreviations in certain fields and omitting some variables to avoid making the tables too cumbersome. I included only the essential attributes to highlight the relationships between the tables through the foreign keys.

Table 3: Candidate Data

candidate_id	name	email	phone
1	John Doe	john.doe@email.com	555-1234
2	Jane Smith	jane.smith@email.com	555-5678

Table 4: Skill Data

skill_id	skill_name
1	Python
2	Java

Table 5: Skill Candidate Data

candidate_id	skill_id	skill_level
1	1	Expert
2	2	Intermediate

Table 6: Preference Candidate Data

candidate_id	preference_id	preference_level
1	1	Highly Satisfied
2	2	Satisfied

Table 7: Preference Data

preference_id	desired_salary	preferred_location	preferred_job_type	preferred_industry
1	60000.00	New York	Full-Time	IT
2	50000.00	Los Angeles	Remote	Marketing

Table 8: Skill Listing Data

skill_id	job_id	skill_level_required
1	1	Expert
2	2	Intermediate

Table 9: Job Listing Data

job_id	company_id	recruiter_id	title	description	job_location	posted_date	
1	1	1	Software Engineer	Develop software	New York	2025-03-01	
2	2	2	Marketing Manager	Oversee marketing campaigns	Los Angeles	2025-02-20	

Table 10: Application Data

application_id	candidate_id	job_id	application_status
1	1	1	Applied
2	2	2	Under Review

Table 11: Interview Data

interview_id	candidate_id	job_id	interview_status	interview_date
1	1	1	Completed	2025-03-03 10:00
2	2	2	Scheduled	2025-03-07 14:00

Table 12: Placement Data

placement_id	candidate_id	job_id	company_id	placement_date
1	1	1	1	2025-03-10
2	2	2	2	2025-03-12

Table 13: Service Data

service_id	candidate_id	service_type
1	1	Resume Writing
2	2	Interview Coaching

Table 14: Recruiter Data

recruiter_id	company_id	recruiter_name
1	1	Sarah Johnson
2	2	Mark Brown

Table 15: Company Data

company_id	company_name	company_industry
1	TechCorp	IT
2	MarketPros	Marketing

Table 16: Payment Data

payment_id	candidate_id	payment_amount	payment_date	payment_status
1	1	200.00	2025-03-01	Completed
2	2	150.00	2025-03-05	Pending