

***myTeams Database
System***

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Table of Contents

1	Project Description.....	3
1.1	Project Overview.....	3
1.2	Use Cases	3
2	Database Requirements	6
2.1	Functional Requirements	6
2.2	Nonfunctional Requirements	7
3	Entity Relationship Diagram (ERD).....	8
4	Entity And Attributes Description	9
5	Database Model	12
5.1	Entity Establishment Relationship Diagram	12
5.2	Constraints Description.....	12
6	Business Requirements Description	14

1 Project Description

1.1 Project Overview

The goal of this relational database system is to solve issues in present day HR software as a service products. With this database system companies will be able to effectively manage current/future employees, departments, invoices, and track productivity metrics inhouse. Companies will be able to store important employee data, department information such as budgets, expenses, and track project metrics that are present in our competition's products. However, some key features this database shall implement are to allow hiring managers to store notes alongside the information of a potential hire. With this key feature, less time will be lost looking for previous notes. Another feature that this product shall implement is to allow employees to see how their currently stored degrees, experience, and credentials match against vacant position requirements in order to improve the chances of promoting within. This database system also supports project management features such as managing priorities, assigning teams, and extending due dates. This database would be useful for companies both large and small that are looking to effectively manage employee data, payroll, invoices, clients, and projects.

1.2 Use Cases

Use Case Title:	Previous interviewee
Actors:	Applicant (Justin), Hiring Manager (Philip)
Description:	This use case begins when Justin is interviewed for a position with Philip's company. Philip takes notes during his interview with Justin. Justin does not end up getting the position due to a more fitting candidate accepting the role. However, Justin applies for another position at Philip's company and Philip was able to retrieve the notes previously saved.

Use Case Title:	Different interviewer
Actors:	Applicant (Wallace), Hiring Manager (Philip), Team Manager (Annie)
Description:	<p>This use case begins with Wallace being interviewed by Philip. Wallace knocks the interview out of the park and is pushed to the next round of interviews, which is with the Team's Lead, Annie. Curiously, Annie checks to see if any notes were saved from the hiring manager. This initiates the private notes case. If the notes are marked as private, then they shall not be able to be read by another person. Otherwise, the notes may be shared with specified individuals.</p>

Use Case Title:	Access
Actors:	Team Manager (Annie)
Description:	<p>This use case begins with the Team Manager Annie interviewing a second-round applicant for a position. Annie goes into the notes section and sees that there are previous notes added for the applicant. This initiates the authentication user case. If Annie is on the list of individuals with access, she will be able to read the notes previously entered. If she is not on the list. She will not be able to access the data.</p>

Use Case Title:	Promoting within
Actors:	Ambitious employee (Maya)
Description:	<p>This use case begins with Maya looking to move up in the company by looking at current vacant positions after earning a certificate. Maya updates her information and then can see additional roles as well as current roles that are more aligned with her current skillset. Maya can also opt in to sharing her</p>

	desire to move up within the company so that her current resume can be shared automatically with managers in other departments looking to fill a position.
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Use Case Title:	Split Decision
Actors:	Doubly Qualified Employee (Maya)
Description:	This use case begins with Maya opting in to sharing her desire to move up within the company. The company A has several new positions available and 5 teams in different departments. To improve this situation, candidates that currently work at the company can list up to 3 departments that they are interested in.

2 Database Requirements

2.1 Functional Requirements

Company

1. A company shall have at least one location.
2. A company location shall have many employees.
3. A company location shall have many departments.
4. A company shall have at many clients.
5. A company shall have many locations.
6. A company location shall have one payroll.
7. A location shall belong to one company.
8. A company shall be able to hire for many job positions.

Manager

1. A manager shall have at least one employee.
2. A manager shall be able to manage many projects.
3. A manager shall be able to leave many notes for a candidate.
4. Managers shall be able to access many candidate notes.

Employee

1. An employee shall belong to only one location.
2. An employee shall be able to belong in only one department.
3. An employee shall be able to express interest in many positions.
4. An employee shall have only one job title.
5. An employee shall be assigned to work on many projects.
6. An employee shall have many skills.
7. An employee shall have many certifications.
8. An employee shall have one manager.
9. An employee shall be able to work on many projects.
10. An employee shall have one payroll.
11. An employee shall have only one salary.
12. An employee shall have one name.
13. An employee shall have one company email.
14. An employee shall have one hire date.
15. A position may be assigned to many employees.

Department

1. A department shall be able to have many employees.
2. A department shall have many positions.
3. A department shall be able to have many projects.
4. A project shall be managed by many managers.
5. A project shall have one project name.
6. A department shall belong to many company locations.
7. A project shall belong to one department.
8. A project shall have only one priority.
9. A priority shall have many projects.
10. A job title shall belong to many employees.
11. A department shall have only one budget.

12. A department shall be able to submit many invoices.
13. A department shall be assigned many clients.
14. A client may be assigned to many departments.
15. A client shall be able to track many projects.

Budget

1. A budget shall belong to many departments.
2. A budget shall have many invoices.
3. A client shall be assigned to pay many invoices.
4. An invoice shall be assigned to at least one client.

Payroll

1. A payroll shall have many employees.
2. A payroll shall belong to many company locations.
3. An employee shall have many paystubs.
4. An employee shall have many W-2s.

Hiring

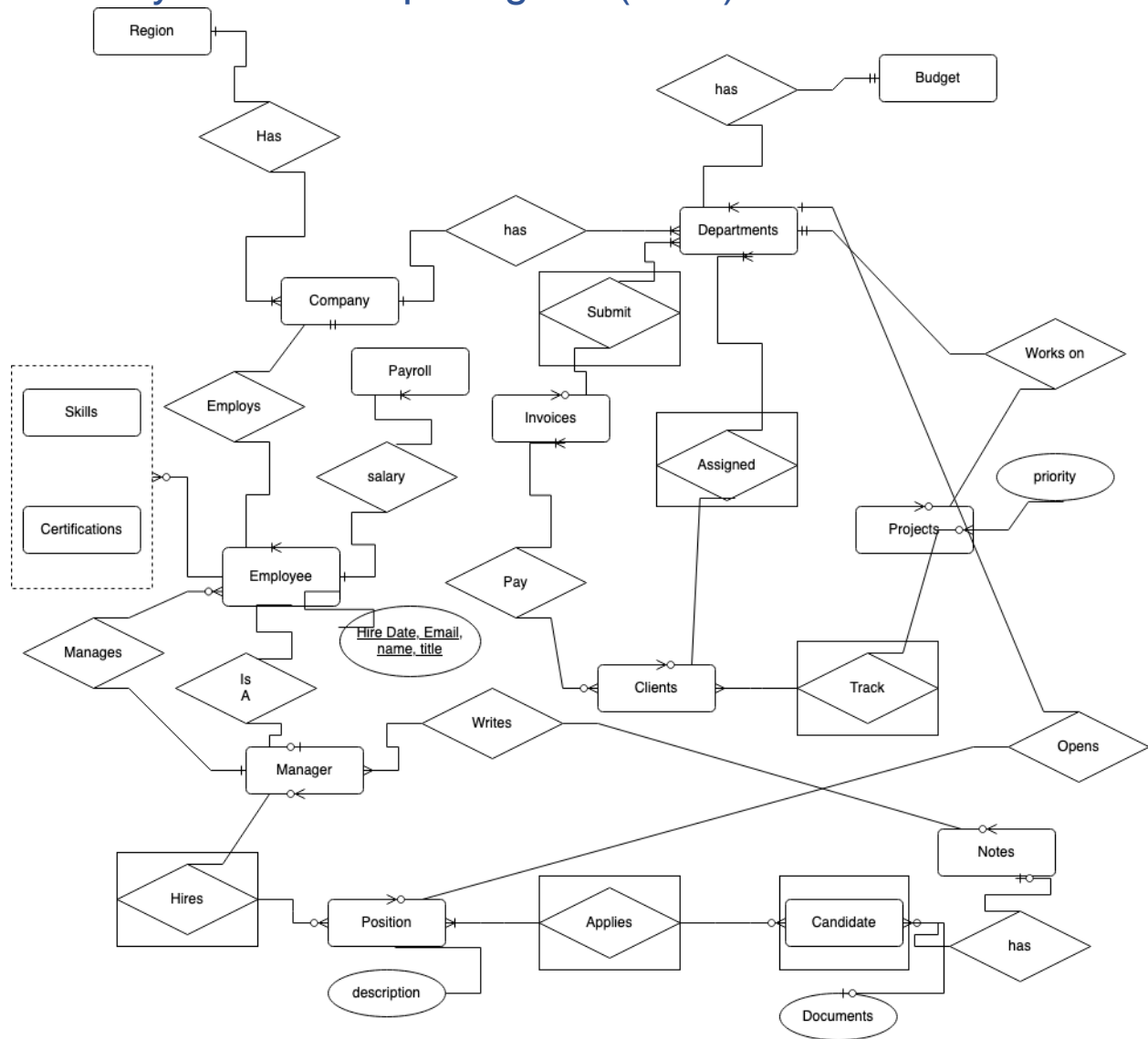
1. A candidate shall be able to apply to at least one position.
2. A candidate shall be interviewed by many managers.
3. A position shall have only one company location.
4. A candidate shall be able to be hired for one position.
5. A position shall be able to have many candidates.
6. A candidate shall be able to upload least one candidate document.
7. A candidate shall have multiple notes.
8. A candidate shall be able to upload many documents.
9. A job shall have one job description.
10. A job description shall have many job skill requirements.

2.2 Nonfunctional Requirements

Security

1. The database shall be automatically backed up every day.
2. All the values inserted into the database shall be consistent with the attribute's datatype and domain.

3 Entity Relationship Diagram (ERD)



4 Entity And Attributes Description

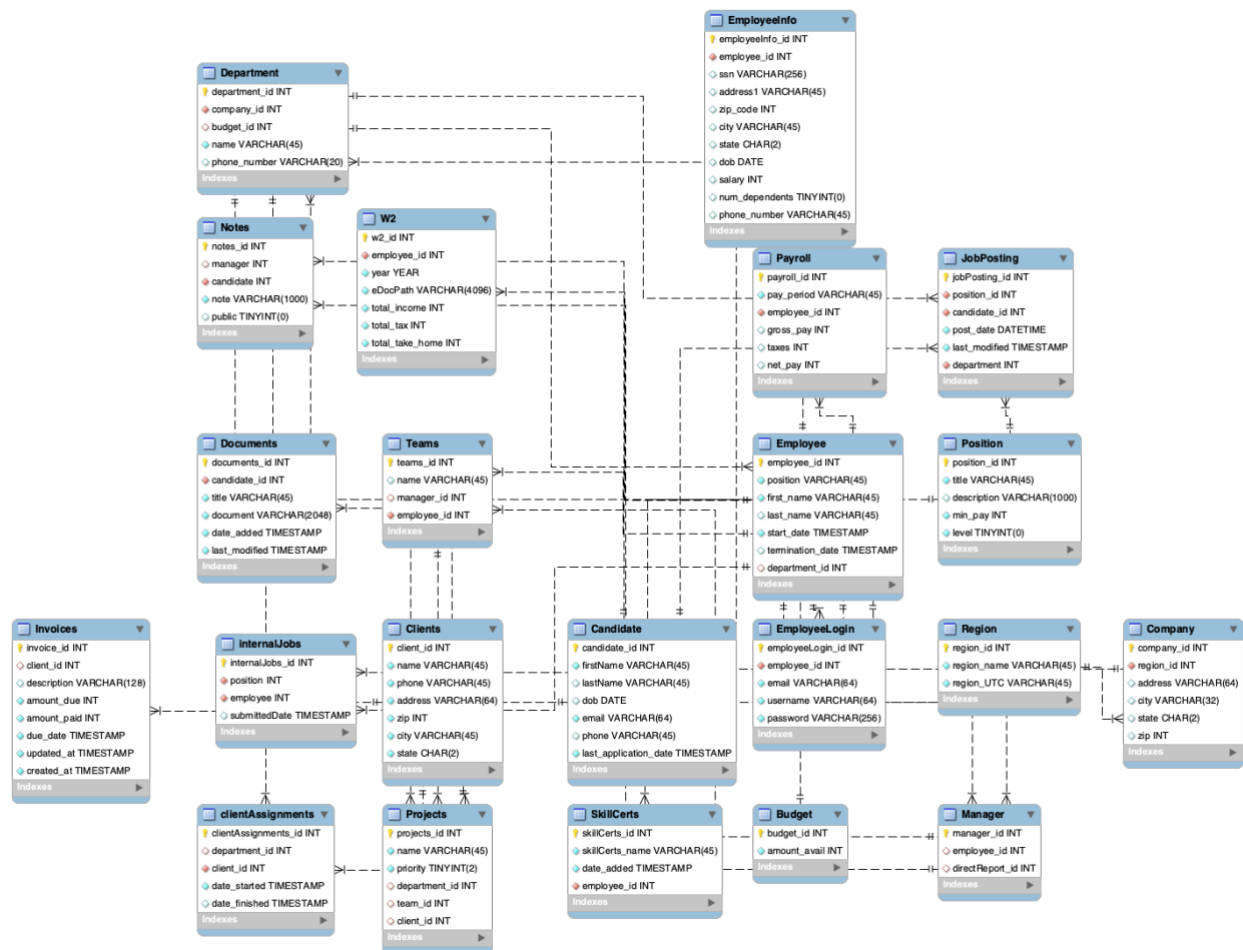
1. Region (Strong)
 1. region_id: key, numeric
 2. region_name: alphanumeric
 3. region_UTC: alphanumeric
2. Company (Weak)
 1. company_id: key, numeric
 2. region_id: numeric
 3. address1: alphanumeric
 4. address2: alphanumeric
 5. city: alphanumeric
 6. state: alphanumeric
 7. zip: numeric
3. Department (Weak)
 1. department_id: key, numeric
 2. company_id: key, numeric
 3. budget_id: key, numeric
 4. name: alphanumeric
 5. phone_number: alphanumeric
4. Employee (Weak)
 1. employee_id: key, numeric
 2. position: alphanumeric
 3. full_name: composite, alphanumeric
 4. first_name: alphanumeric
 5. last_name: alphanumeric
 6. start_date: timestamp
 7. termination_date: timestamp
 8. department_id: key, numeric
5. EmployeeInfo (Weak)
 1. employeeInfo_id: key, numeric
 2. employee_id: key, numeric
 3. ssn: numeric
 4. address1: alphanumeric
 5. address2: alphanumeric
 6. zip_code: numeric
 7. city: alphanumeric
 8. state: alphanumeric
 9. dob: date
 10. salary: numeric
 11. num_dependents: numeric
 12. phone_number: alphanumeric
 13. skill_id: key, numeric
6. Skills & Certs: (Weak)
 1. skill_id: key, numeric
 2. skill_name: alphanumeric
 3. employee_id: numeric
 4. date_added: timestamp
7. Employee_login (Weak)

1. employee_login_id: key, numeric
 2. employee_id: key, numeric
 3. email: alphanumeric
 4. username: alphanumeric
 5. password: alphanumeric
8. Manager (Weak)
 1. manager_id: key, numeric
 2. employee_id: key, numeric
 3. direct_report_id: key, numeric
9. JobPosting (Weak)
 1. jobPosting_id: key, numeric
 2. position_id: key, numeric
 3. candidate_id: key, numeric
 4. post_date: timestamp
 5. last_modified: timestamp
10. Position (Strong)
 1. position_id: key, numeric
 2. title: alphanumeric
 3. description: alphanumeric
 4. min_pay: numeric
 5. level: alphanumeric
11. Candidate (Strong)
 1. candidate_id: key, numeric
 2. first_name: alphanumeric
 3. last_name: alphanumeric
 4. dob: multivalue, date
 5. email: alphanumeric
 6. phone: alphanumeric
 7. last_app_date: timestamp
12. Projects (Weak)
 1. project_id: key, numeric
 2. name: alphanumeric
 3. priority: numeric
 4. department_id: key, numeric
 5. team_id: key, numeric
 6. client_id: key, numeric
13. ClientAssignments (Weak)
 1. assignment_id: key, numeric
 2. department_id: key, numeric
 3. client_id: key, numeric
 4. date_started: timestamp
 5. date_finished: timestamp
14. Teams: (Weak)
 1. team_id: key, numeric
 2. team_name: alphanumeric
 3. team_manager_id: key, numeric
 4. employee_id: key, numeric
15. Clients (Strong)
 1. client_id: key, numeric
 2. name: alphanumeric
 3. phone: alphanumeric
 4. client_address1: alphanumeric

- 5. client_address2: alphanumeric
- 6. zip: numeric
- 7. city: numeric
- 8. state: alphanumeric
- 16. Documents (Weak)
 - 1. document_id: key, numeric
 - 2. candidate_id: key, numeric
 - 3. title: alphanumeric
 - 4. document: alphanumeric
 - 5. date_added: timestamp
 - 6. last_modified: timestamp
- 17. Invoices (Weak)
 - 1. invoice_id: key, numeric
 - 2. client_id: key, numeric
 - 3. description: alphanumeric
 - 4. amount_due: numeric
 - 5. amount_paid: numeric
 - 6. status: alphanumeric
 - 7. due_date: timestamp
 - 8. updated_at: timestamp
 - 9. created_at: timestamp
- 18. Payroll (Weak)
 - 1. payroll_id: key, numeric
 - 2. pay_period: alphanumeric
 - 3. employee_id: key, numeric
 - 4. gross_pay: numeric
 - 5. taxes: numeric
 - 6. net_pay: numeric
- 19. W2 (Weak)
 - 1. w2_id: key, numeric
 - 2. employee_id: key, numeric
 - 3. year: numeric
 - 4. eDocPath: alphanumeric
- 20. Budget (Strong)
 - 1. budget_id: key, numeric
 - 2. amount_avail: numeric

5 Database Model

5.1 Entity Establishment Relationship Diagram



5.2 Constraints Description

Table	Foreign Key	On Update	On Delete	Comment
clientAssignments	Clients	Cascade	Cascade	If a client is deleted, then they shouldn't be assigned to a department.
clientAssignments	Department	NULL	NULL	If a department is deleted, the client must be assigned a new department. Null is temporary
Company	Region	Cascade	No Action	If company exists, region shall exist. Else, apply update to company table.
Department	Budget	Cascade	NULL	The department will need a new budget allocated. If updated, update shall reflect in department table.

Department	Company	Cascade	No Action	If company exists, department shall exist. Else, apply update to department table.
Documents	Candidate	Cascade	Cascade	If a candidate is deleted, we do not need to keep their documents.
Employee	Department	Cascade	NULL	Update employee table if department is updated. If department is deleted, employee will be assigned a new department later.
EmployeeInfo	Employee	Cascade	Cascade	Apply updates. If employee is deleted, so should their personal information. (Employee will be deleted 3-7years after termination for tax purposes)
internalJobs	employee	Cascade	Cascade	Apply updates. If employee is deleted, so should their internal job post.
internalJobs	position	Cascade	Cascade	Apply updates. If position is deleted, so should the internal job post.
Invoices	Client	Cascade	NULL	Apply updates. If client is deleted, we should keep transaction information for financial purposes.
JobPosting	Position	Cascade	Cascade	Apply updates. If position is deleted, then job posting shall no longer be open
JobPosting	Candidate	Cascade	Cascade	If a candidate is deleted, the applications the candidate submitted shall be deleted.
JobPosting	Department	Cascade	Cascade	Apply updates to job posting. If deleted, delete posting.
Manager	directReport(employee)	Cascade	Cascade	Manager shall no longer manage the deleted employee.
Manager	Manager's employee id	Cascade	NULL	Employees will need a new manager assigned.
Notes	manager	Cascade	NULL	Notes should be kept
Notes	candidate	Cascade	Cascade	Delete note if candidate is deleted
Payroll	Employee	Cascade	Cascade	Company shall store employee pay information on file for 3-7 years after termination date.
Projects	Team	Cascade	NULL	If a team is deleted, a project shall be given to a new team if needed.
Projects	Department	Cascade	NULL	If a department is deleted, a project shall be given to a new department.
Project	Client	Cascade	NULL	A team may work on a project not assigned by a client. If previously assigned a client, the team has the option to either continue or remove the project.

SkillCerts	Employee	Cascade	Cascade	If an employee is deleted, their skills and qualifications are also deleted.
Teams	Manager	Cascade	NULL	If a manager is deleted, the team will need a new manager; NULL until assigned a new manager.
Teams	Employee	Cascade	Cascade	If an employee is deleted from employees table, then the employee will be removed from the team.
W2	Employee	Cascade	Cascade	Apply updates. If employee is deleted, so should their personal information. (Employee will be deleted 3-7years after termination for tax purposes)

6 Business Requirements Description

1. The user shall be able to see the contact information of all clients with past due balances.
2. The user shall find all employees work at companies in region <x>.
3. The user shall find all the candidates that applied to a position in the last <x> amount of time.
4. The user shall find all priority <x> projects that <x> manager oversees.
5. The user shall be able to see all the active projects that are assigned to client <x>.
6. The user shall be able to see a list of all the documents a candidate has uploaded.
7. The user shall be able to calculate to gross income of employee <x> over <x> time.
8. A user shall be able to find the emails and phone number of all employees in a department.
9. The user shall be able to find the mailing address of all terminated employees in year <x>.
10. The user shall be able to find all the employees who applied to an internal job posting that have worked at the company for more than <x> time.
11. The user shall be able to see the open positions in a department.
12. The user shall be able to find the projects that a manager oversees for a client.
13. The user shall be able to find clients that have not been assigned a department.
14. The user shall be able to find public notes manager<x> wrote for candidate <x>.
15. A user shall be able to see the projects an employee is has worked on.
16. A user shall be able to calculate the previous cost of labor over time <x>.
17. The user shall be able to see the positions that a candidate applied to.
18. A user shall be able to calculate the total amount a client owes.
19. The user shall be able to update the list of team members every time one quits or joins the department.
20. The user shall be able to update the amount due that a client has for a completed project.