Assignment on

Making Human Resource Management (HRM) Database for a Company

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Making Human Resource Management (HRM) Database for a Company

Importance of a database designing for developing a new company

A database is often essential for developing a new company, especially in today's data-driven business environment. Here are several reasons why:

1. Data Organization and Management

A database helps in organizing, storing, and managing data efficiently. For a new company, managing information such as customer details, employee records, inventory, sales, and financial transactions is critical for smooth operations.

2. Scalability

As your company grows, so will the volume of data. A well-designed database can scale with your business, allowing you to handle increasing amounts of data without losing performance or reliability.

3. Improved Decision Making

With a centralized database, you can quickly generate reports and analyze trends, helping in data-driven decision-making. This is crucial for understanding customer behavior, improving products/services, and optimizing business processes.

4. Efficiency and Automation

A database can automate repetitive tasks such as invoicing, inventory management, and payroll processing. This reduces manual errors and saves time, allowing employees to focus on higher-value activities.

5. Security and Compliance

Databases offer security features like encryption, access control, and backups, helping you protect sensitive data and comply with legal regulations (e.g., GDPR, HIPAA).

6. Collaboration and Access

Databases allow multiple users to access and work on the same set of data in real-time, improving collaboration across teams. They can be integrated with other systems like CRM or ERP, providing a unified platform for the entire company.

7. Customer Relationship Management (CRM)

A well-organized customer database enables better relationship management, customer segmentation, targeted marketing campaigns, and personalized services, which are critical for a new company's growth.

In summary, having a database from the early stages can streamline operations, enhance security, improve decision-making, and prepare the company for growth and scalability.

Process of Drawing Database

➤ Identify the Entities Required

➤ Identify the Attributes and Primary key for each Entity

➤ Identify the Relationship needed

➤ Identify the Cardinality Ratio and Participation

➤ Draw the Diagram

Step-1: Identify the Entities Required

We have to develop a Human Resource Management database for a company. It requires that we have to add some information of departments, employees and projects including company. As mentioned that every department has many employees and each employee work for a department and each department is leading by only one manager who is also an employee. Initially a new department need not have any employee. Here, though an employee belongs a department but they can work for different projects at the same time. Each employee can work for different job position like Developer, Programmer and front-end

designer.

Step-2: Identify the Attributes and Primary Key for each Entity

employee (id, name, email, dob, gender, designation, salary, joining_date, dept_id)

phone (id, phone_number, employee_id)

address (id, employee_id, post_code, upazilla, district, division)

department (id, name, contact_number, locations, manager_id)

manager (id,name,promote_date, department_id, address_id, phone_id)

project (id, name, description,manager_id, start_date, end_date, members, budget)

Step-3: Identify the relationship needed

1. Departments-controls-Projects

2. Departments-manages-Employees

3. Departments-has-Managers

4. Employees-work_on-Projects

5. Employees-has-Phone

6. Employees-living-Address

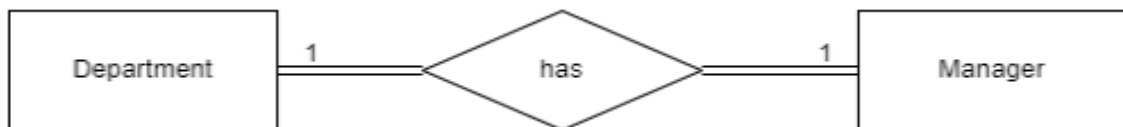## Step-4: Identify the Cardinality Ratio and Participation

1. Department-controls-Projects
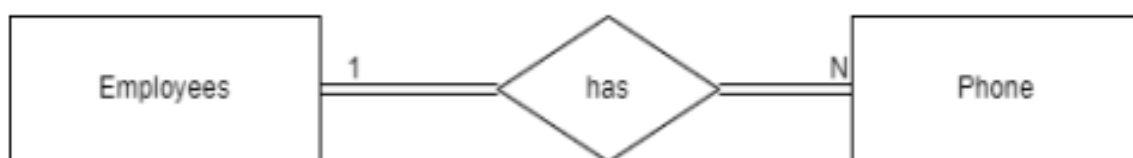

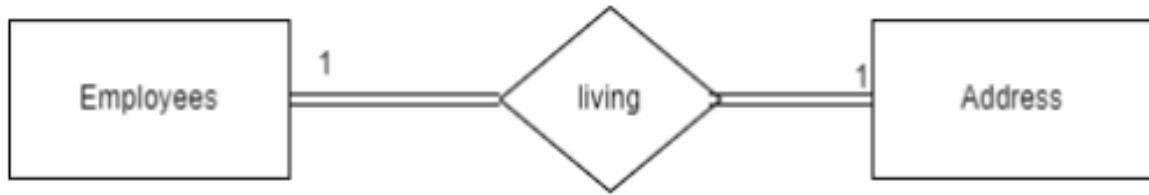2. Department-manages-Employees

3. Departments-has-Managers

4. Employees-works_on-Projects

5. Employees-has-Phone

6. Employees-living-Address

Necessity of Foreign Key in a Database

A foreign key in a data table serves several important purposes:

Enforces Referential Integrity: It ensures that the value in one table corresponds to a valid record in another table, maintaining consistent and accurate relationships between tables.

Establishes Relationships: Foreign keys define the relationship between tables (e.g., one-to one, one-to-many). This helps in linking related data across multiple tables

.

Cascading Operations: Foreign keys can enforce cascading updates and deletes. For example, if a record in the parent table is deleted, related records in the child table can be automatically deleted (CASCADE DELETE) or updated.

Prevents Orphaned Records: A foreign key ensures that a record in the child table cannot exist without a corresponding record in the parent table, preventing orphaned data.

Facilitates Querying and Joins: Foreign keys improve the ability to perform JOIN operations in queries, allowing for efficient retrieval of related data from multiple tables.

Data Consistency and Integrity: By requiring valid references between tables, foreign keys help maintain the overall accuracy and integrity of the data in the database.

Step-5: Draw the Diagram
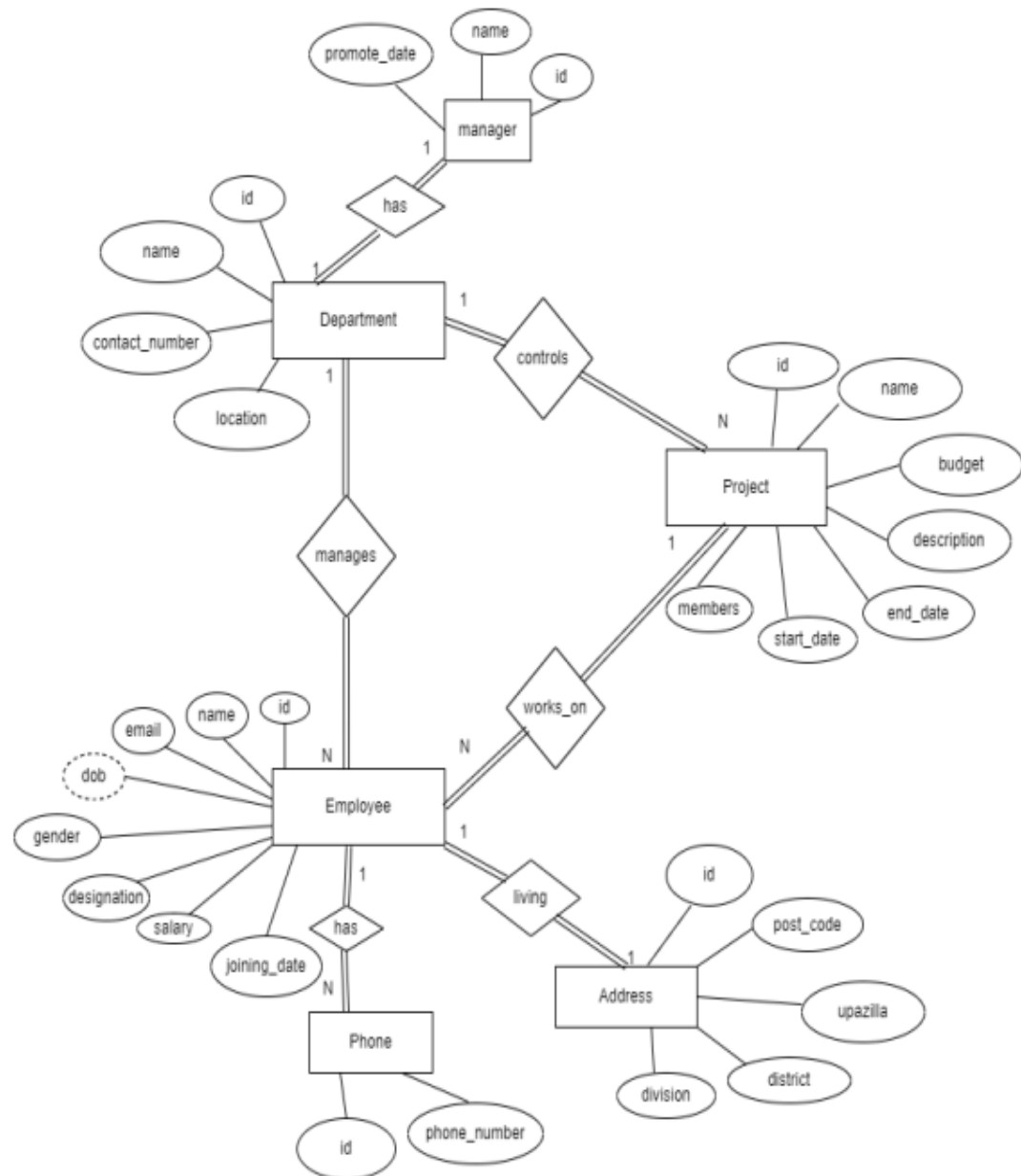
Step-6: Implementing the database in MySQL:

All tables with sample data:

1. department (id, name, contact_number, locations, manager_id)

id	name	contact_no	locations	manager_id
1	human resource	125784343	gazipur	2
2	administration	164266778	muhammadpur	1
3	marketing	18254390	narayanganj	3
4	organization development	163763275	Comilla	4
5	HR operations	13273542	Khulna	3
6	Employee Relations	17827634	Sylhet	1
7	L & D Development	163276434	Narayanganj	2

2. employee (id, name, email, dob, gender, designation, salary, joining_date, dept_id)

id	name	email	dob	gender	designation	salary	joining_date	dept_id
1	sadikur rahman	sad@gmail.com	1990-01-03	male	developer	567.87tk	2001-03-21	4
2	Rayhan haque	rah@gmail.com	1990-10-24	male	programmer	87909.786tk	2022-10-26	7
3	enamul haque	ena@yahoo.com	1995-10-23	male	front-end designer	654434.56	2024-10-16	4
4	rehana parvin	par@gmail.com	1997-10-21	female	manager	454654.423	2024-10-25	3
5	fahmida akter	akter@gmail.com	1999-10-17	female	assistant	4365.32	2024-10-31	2

3. project (id, name, description, manager_id, start_date, end_date, members, budget)

id	name	description	manager_id	start_date	end_date	members	budget
1	employee performance evaluation system	involves creating a system that tracks and evaluat...	1	2002-01-02	2022-02-03	30	54765.7867758
2	recruitment and applicant tracking system	focus on designing an automated system to streamli...	3	2015-10-22	2023-10-28	45	672536.165
3	employee on boarding and training portal	involves building an online prtal for new employee...	5	2016-10-19	2024-10-23	20	12564356.763
4	HR analytic dashboard	involves comprehensive hr analytics dashboard	4	2018-10-24	2024-10-28	15	6745637.54
5	employee self service portal	create a self service portal where employees can a...	2	2019-10-31	2024-11-28	50	65485563.675

4. manager (id, name, promote_date, department_id, address_id, phone_id)

id	name	promote_date	dept_id	address_id	phone_id
1	sadikur rahman	1990-01-03	1	3	2
2	nayma islam	2020-10-15	2	3	4
3	badhon akter	2018-10-11	4	5	1
4	sirajul haque	2021-10-15	2	5	4
5	sneha roy	2020-10-16	3	2	3

5. address (id, employee_id, post_code, upazilla, district, division)

id	employee_id	post_code	upazilla	district	division
1	4	c-6323	barishal sadar	barsihal	barishal
2	2	d-8234	bhola	barishal sadar	barishal
3	1	h-6733	raypasha	sirajgonj	dhaka
4	5	f-32453	norsingdi	ahmmedpur	comilla
5	3	c-21434	kocupara	nrayanganj	dhaka

6. phone (id, phone_number, employee_id)

id	number	employee_id
1	16873468	3
2	18273834	4
3	12324535	2
4	124354654	3
5	123243	1

Conclusion

In conclusion, human resource management (HRM) plays a critical role in the success of an organization by ensuring that the right people are hired, trained, motivated, and retained. The integration of HR strategies with organizational goals fosters a productive workforce, promotes a positive work environment, and drives overall business performance. Effective HRM practices, such as performance management, employee development, and strategic planning, contribute to

enhanced employee satisfaction, engagement, and retention, all of which are essential for long-term organizational growth.

Thank You