

Human Resources Management System

Human Resources Management System (HRMS) aims to provide the effective management of the workforce, working within the organization. The system maintains all the information regarding employees and aims to provide good interaction and communication between HR administrator and employees. HR admin within the human resource management system keeps track of employees and projects. This HRMS helps to generate an employee report whenever needed. This system is generalized and can be used in every organization.

Undoubtedly the database for the Human Resource management system of an organization is huge and complex. Therefore, we have added some limitations.

- We are assuming that there is only one HR admin in an organization.
- We have assumed that one employee can work only on one project.
- An employee can have only one manager.
- An employee will retire from the organization at the age of 60.
- The HRMS system will only keep track of those training sessions that are completed by an employee.
- Only training sessions conducted by the organization are being tracked.
- We have assumed that employees cannot take leave of absence less than one day.
- Employee's performance can be ranked on three grade levels- A, B and C. A being the highest and C being the least.
- Only for the current financial year the salary and performance ranking of an employee is being stored.

Data Requirements:

HR Admin:

- HR admin has an unique admin id

- Name: First name and last name
- Work email address

HR admin administers at least 10 employees and manages at least 1 project.

Employee:

HRMS will store data for every employee working in an organization.

- Unique employee ID
- Name: First name and last name
- Project ID
- Work email
- Gender: Female or Male
- Date of birth
- Skills: Java, Python, C#, C++, JavaScript (multivalued)
- Current designation : Trainee, associate, professional or manager
- Current work location: city and state
- Age can be derived from date of birth
- Total number of employees can be derived from the number of unique employee IDs.

An employee can only work on a single project for a certain number of hours and is supervised by a manager, who is also another employee. Moreover, an employee may complete a certain number of training sessions during his time in organization. In addition to this every employee can check the availability of their leaves and can request for the same. Employees can keep track of their performance. And can also inquire about their payroll.

Project Entity:

Data related to every project in the organization is stored over here.

- Project ID
- Project Name
- Project location: city and state
- Tech stack:Java, Python, C#, C++, JavaScript (multivalued)

Project will have at least 5 employees and the project may also conduct

training sessions for their employees.

Training:

The data of the number of training completed by every employee is maintained by HRMS.

- Training ID
- Training cost is the cost incurred for conducting training
- Skill acquired: Safety and Security, Java, Python, C#, C++, JavaScript, teamwork, soft skill (multivalued)

Every employee may complete a certain number of training sessions in an organization and its completion date is recorded.

Leave Entity:

During their time in the organization an employee is entitled to 30 leaves in a year. All the leaves taken by an employee are being tracked here.

- Employee ID
- Leave start date and day
- Leave end date and day
- Type of leave
- Leave ID

An employee can take sick/casual, marriage, maternity/paternity or other types of leaves.

An employee can have a maximum of 30 leaves.

An employee at a time can request for minimum of 1 day leave to maximum of 30 days leave.

Payroll Entity:

- Payroll ID
- Employee ID
- Project ID
- Salary in USD
- Payroll Type: Full, temporary or contract

Employees can track their salary for the past three financial years. Each employee will have a different salary depending upon their designation and payroll type.

Performance Entity:

Performance of the employee is saved over here.

- Performance ranking: A, B or C
- Performance incentive: \$3000(Rank A), \$2000(Rank B), \$1000(Rank C)
- Employee_id

Business Goals:

1. To determine the technical diversity and resource pool in an organization, the HR admin will be able to retrieve the number of the employees with particular technical skill in an organization based on the count for the particular skills of the employees.
2. To know wage equality in the organization to maintain equal pay across gender. We can find out the salary for a particular designation for female and male employees in the company by looking at the employee and payroll table.
3. We can find the number of leaves taken in a month and generate a report to analyze which month has the most number of leaves taken by an employee. Also, on which day of the week, the employee takes the most number of leaves.
4. For efficient management of resources in the organization, performance of the employee can be monitored for the given year. On the basis of this information his/her advancement in the organization will be decided. If the employees' performance is A(the highest grade for a year), he will be

promoted(temporary and contractual employees will be made permanent), else they may be asked to upskill by taking some training sessions.

5. Cost is being incurred by the project in conducting training sessions so for effective cost management, projects can decide which training sessions to continue or discontinue based on the data collected regarding the most and least enrolled training sessions.
6. To know the decline in the number of employees in a month due to retirement from an organization. HR admin can deduce the age of the employee through his/her date of birth. Employees turning 60 in the given month will retire from the organization and hence reduction in total employee count.