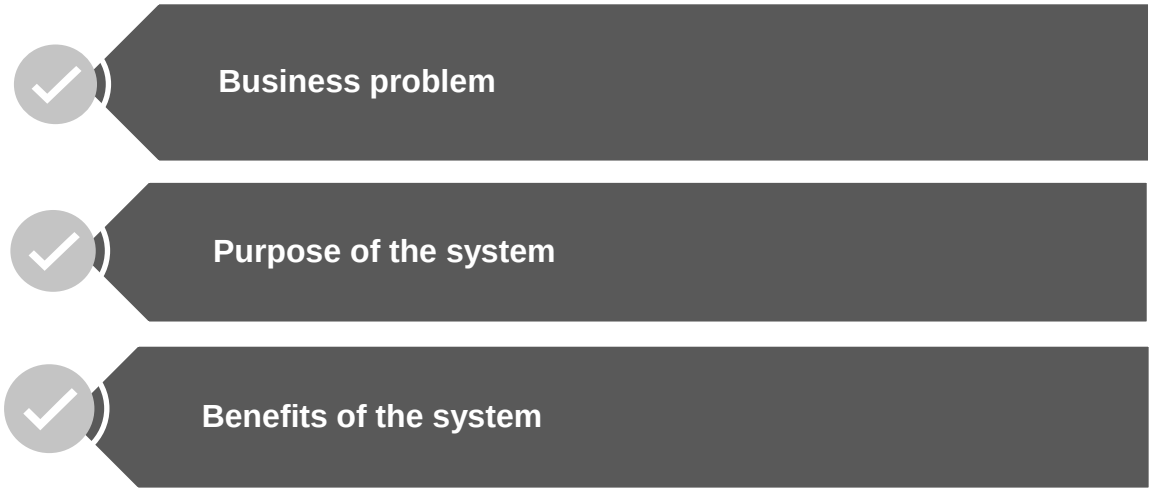
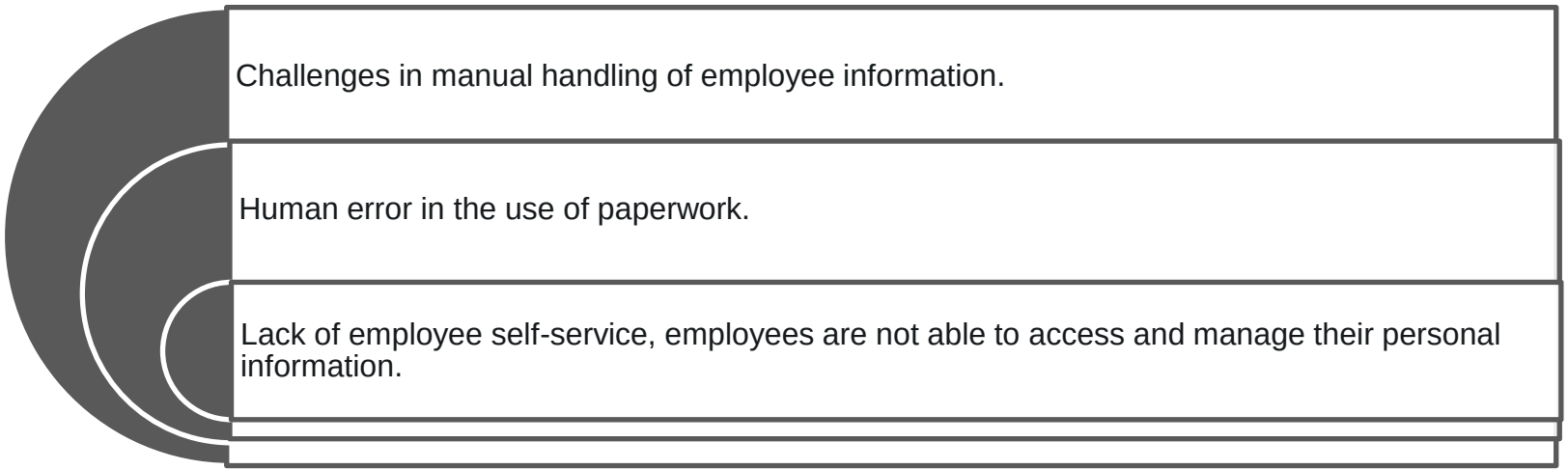
Project on Employee Database Management System

Introduction:



Business problem:



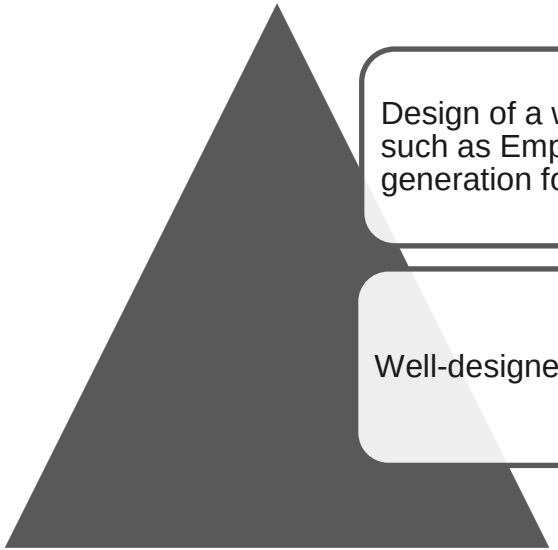
Business problem:

Web-base HR management system

- Maintain employee information in a database by fully privacy and authority access

- The project is aimed at setting up an employee information system about the status of: employee, department, leave, salary.

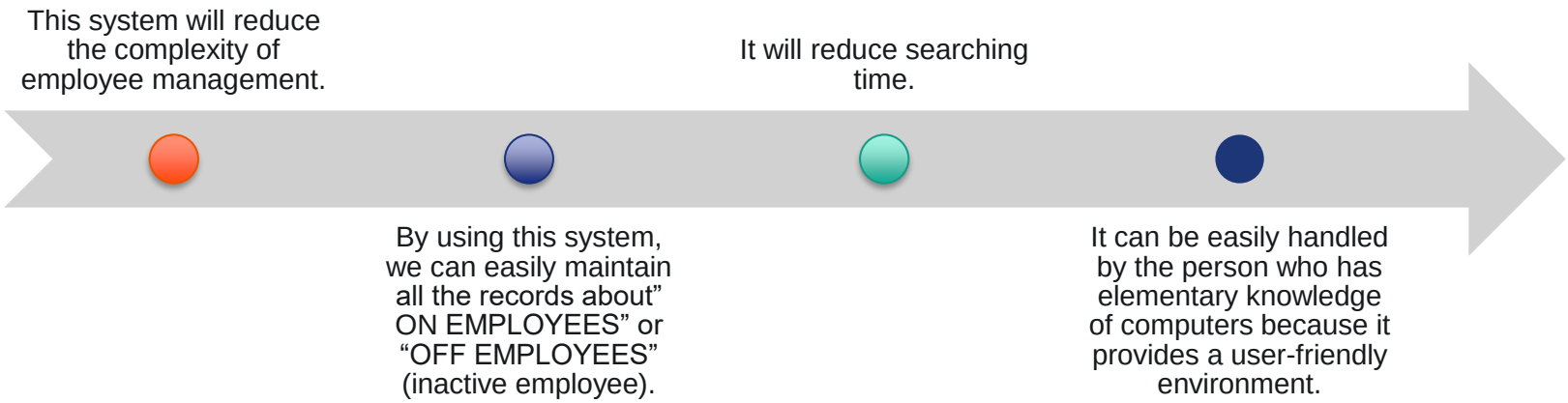
Purpose of the system:



Design of a web-based HR management system to fulfill requirements such as Employee leave management, Salary, Department and report generation for HR.

Well-designed database to store employee information.

Benefits of the system:



Collect database:

In this project, We are going to design a web application for Employee Database Management System.

What is Attributes?

- In a database management system (DBMS), an attribute refers to a database component, such as a table.
- It also may refer to a database field.
- Basically, An attribute or combination of attributes that uniquely identifies one and only one instance of an entity is called a primary key or identifier.
- In our case, emp_id is a primary key for Employee.

The main entities of our project are:

Collected variable and data type:

Entities and their Attributes

EMPLOYEE					
Column Name	data Type	Primary Key	Foreign Key	Not Null	Description
emp_dep_id	Int		Yes	Yes	Department Id of employee
emp_id	int	Yes		Yes	Primary Key Id of the employee
user_id	Int		Yes		user id of employee
emp_name	varchar(100)				The name of employee
emp_mobile	int				The mobile number of the employee
emp_email	varchar(100)				The mail of the employee
emp_address	varchar(100)				The address of the employee

LEAVE					
Column Name	data Type	Primary Key	Foreign Key	Not Null	Description
leave_id	Int	Yes		Yes	Id of leaving
emp_id	int		Yes	Yes	Employee Id of leaving
leave_type	varchar(10)				Type of leaving
leave_from	date				Date leaving
Leave_to	date				Leaving to date
leave_status	varchar(10)				Leave status

Collected variable and data type: Cont…

DEPARTMENT					
Column Name	data Type	Primary Key	Foreign Key	Not Null	Description
emp_dep_id	int	Yes	Yes	Yes	Department Id of employee
dept_title	varchar(100)				Title of the Department
dept_desc	varchar(100)				Descripton of the Department

LOGIN					
Column Name	Data Type	Primary Key	Foreign Key	Not Null	Description
login_id	int	Yes		Yes	Login ID
login_role_id	int		Yes	Yes	ID of the login role
login_usernam	varchar (45)				Username of the login
login_userpwd	varchar (45)				Password of the login

Collected variable and data type: Cont…

USERS					
Column Name	Data Type	Primary Key	Foreign Key	Not Null	Description
user_id	int	Yes		Yes	User ID
login_login_id	int		Yes	Yes	login user id
user_name	varchar (45)				Name of the user
user_email	varchar (45)				Email of the user
user_mobile	int				Mobile of the user
user_address	varchar (45)				Address of the user

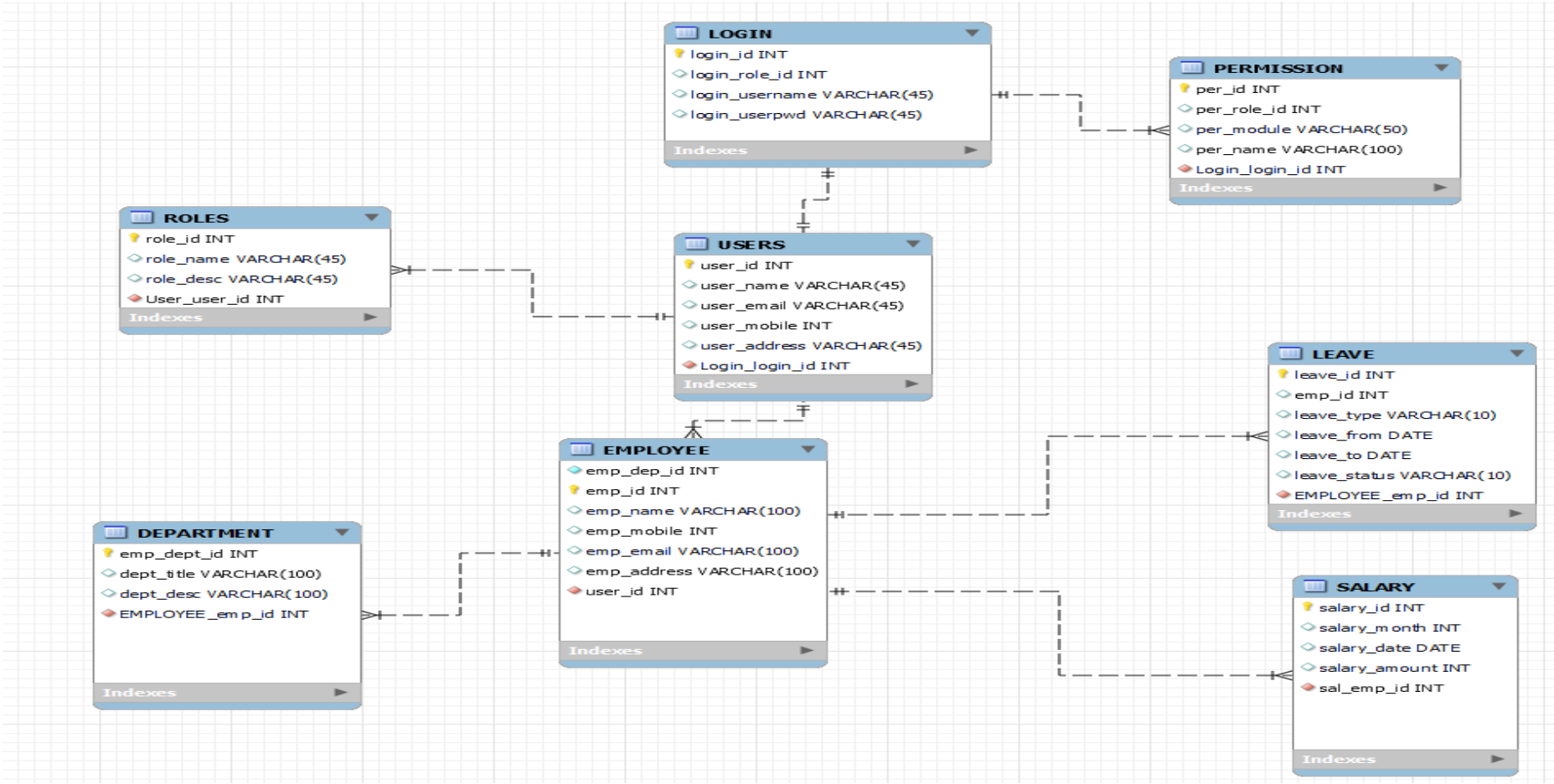
ROLES					
Column Name	Data Type	Primary Key	Foreign Key	Not Nulll	Description
role_id	int	Yes		Yes	Role ID
User_user_id	int		Yes	Yes	User id
role_name	varchar (45)				Name of role
role_desc	varchar (45)				Description of the role

Collected variable and data type:

PERMISSION					
Column Name	Data Type	Primary Key	Foreign Key	Not Null	Description
per_id	int	Yes		Yes	Permission ID
per_role_id	int		Yes	Yes	Permission role ID
per_module	varchar (50)				Permission module
per_name	varchar(100)				Permission name

SALARY					
Column Name	Data Type	Primary Key	Foreign Key	Not Null	Description
salary_id	int	Yes		Yes	Salary ID
sal_emp_id	int		Yes	Yes	Employee id
salary amount	int				Amount of salary
salary_month	int				Salary month
salary_date	Date				Salary date

Design a relational database to store the data: Entity Relationship Diagram (ERD)



Database Selection and Sample Queries:

- We are going to use MySQL database
- Sample Queries

To see the complete information about the employees:

*SELECT * FROM employee;*

To find employees who first names start with the letter ‘Da’:

SELECT emp_name FROM employee WHERE emp_name LIKE ‘Da%’;

To list the name and salary of FRANK:

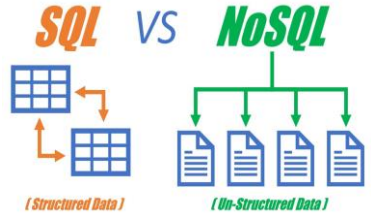
SELECT emp_name, salary_amount FROM employee, salary
WHERE employee.emp_id = salary.sal_empl_id AND
employee.emp_name = 'FRANK';

List of employees who has taken leave

SELECT emp_name FROM employee, leave
WHERE Employee.emp_id = leave.employee_emp_id

Department wise list of employees

SELECT dept_desc, emp_name FROM employee, department
Where Employee.emp_id = department.employee_emp_id



Pros and cons of using RDBMS and NoSQL database for our case:

Features Of RDBMS

- ✓ RDBMS are table-based databases
- ✓ Data store in rows and columns
- ✓ Structured way of data storage
- ✓ Each row contains a unique instance of data for the categories defined by the columns.
- ✓ Provide facility primary key, to uniquely identify the rows
- ✓ Integrity constraints maintain data consistency across multiple tables

Limitations

- × Scalability
- × Complexity

Features of NoSQL

- ✓ It's a collection of key-values pair, documents and wide-column stores without any standard schema definition
- ✓ No Schema or Fixed Data model
- ✓ Highly and easily scalable
- ✓ No complex relationships, such as the ones between tables and RDBMS
- ✓ Maintaining NoSQL Servers is Less Expensive
- ✓ Supports integrated caching

Limitations

- × NoSQL database is Open Source
- × No Stored Procedures
- × too difficult for finding NoSQL experts

Potential Risk:

To implement the project, we may face a number of challenges in collecting consistent and quality data. To develop methods to improve data collection practices, it is necessary to first identify barriers to consistent data collection. This section we identify common data collection challenges:

- ✓ **Inconsistent data collection standards**
- ✓ **Economic and IT restrictions**