Database Management System

Project

5/7/2022

Project Report

PAYROLL & HRM DATABASE

Analyzed Application URL

https://aligauhar-trials7501.orangehrmlive.com/auth/seamlessLogin ---for Promotion Panel

https://www.google.com/url?sa=t&source=web&rct=j&url=https://www.grovehr.com/&ved=2ahUKEwi0ptPv_-H4AhXUwQIHHbtUCicQFnoECAgQAQ&usg=AOvVaw1QwDwcWHCUJ0-JmVKvoIrb – for Hiring Panel

https://www.excel-skills.com/payroll-leave-templates.php?sesreq=7700416202207051456&ctime=1657032979 --- for Payroll panel

Class: BSCS 4 (A)

Group Members

Student Name	Enrollment	Viva Marks
Ali Gauhar	02-134202-006	

Project Marks

Head	Performance	Comments
Analysis & Report		
ERD		
Normalization		
DDL/DML/Triggers		
Stored Proc/ Views/ Stored Functions		

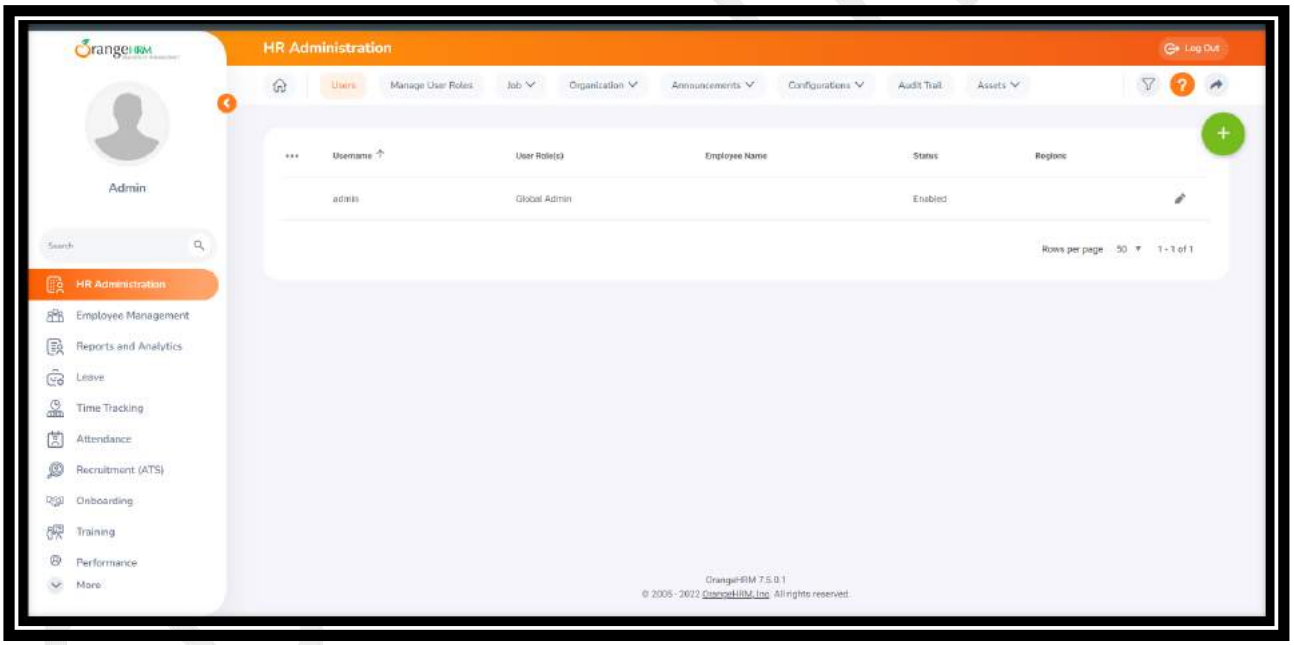
INTRODUCTION

The data base management system we are going to make covers 3 major sides pay role, recruitment and promotion panel. This is done because HRM covers many aspects therefore breakdown our project in easy format we dd this. We will include all the part of HRM except payrolls and hiring will be covered in promotion panel as much as we can

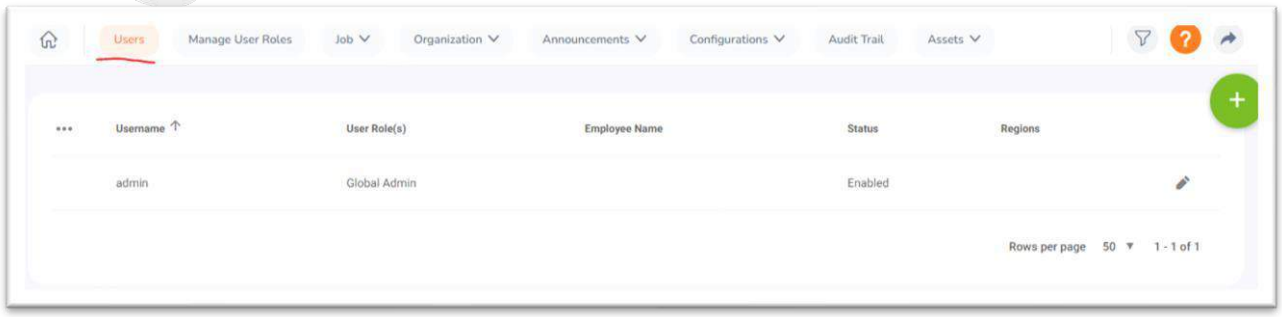
Since promotion is related to performance of employee therefore we have made our system in such a way that whenever any manager will start analyzing about a particular employee, he will easily find all the information and progress of the person who is going to be promoted, this can also be automated if the criteria of companies promotion is defined

This is only promotion panel data till page # 38

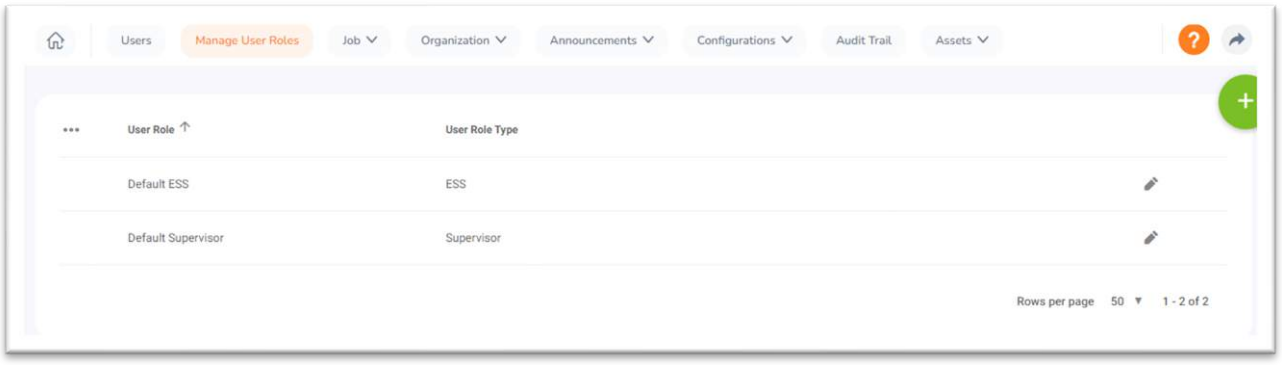
Analysis – Screenshots of the Application



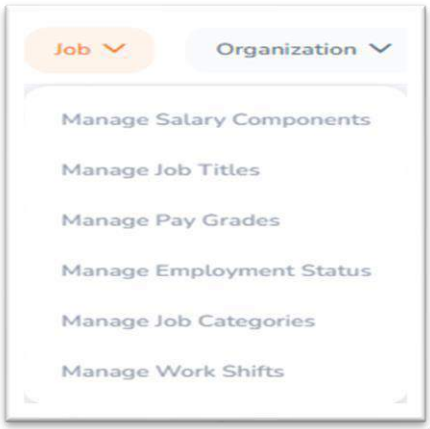
Here the HR administration page contains the Entities (Users, Manage User Role, Job, organization, Announcements, Configurations, Audit Traits, Assets)



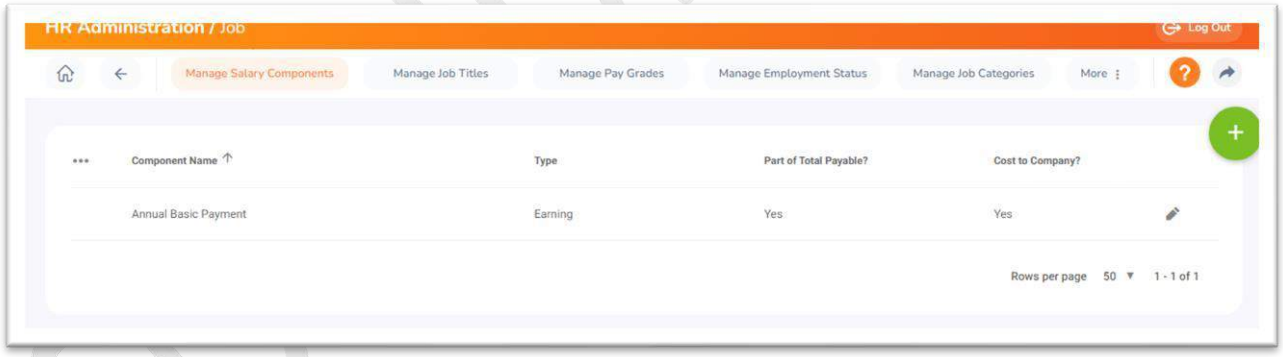
User(User_Name, User_Role(multivalued), Employee_Name,Status, Region)



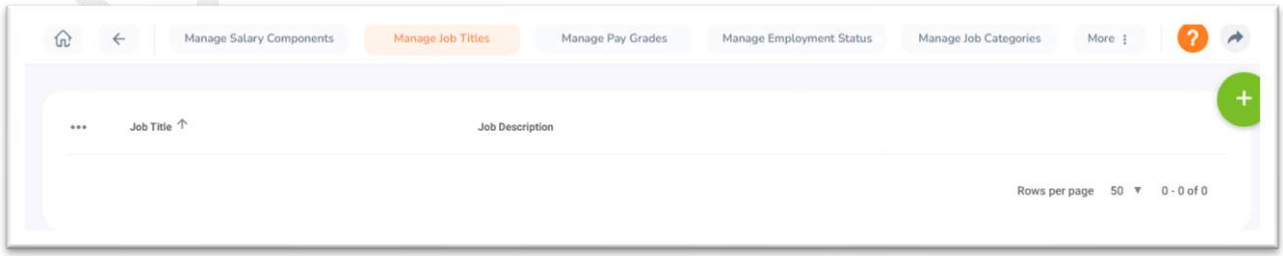
Manage_User_Role(user_Role, User_Role_Type)



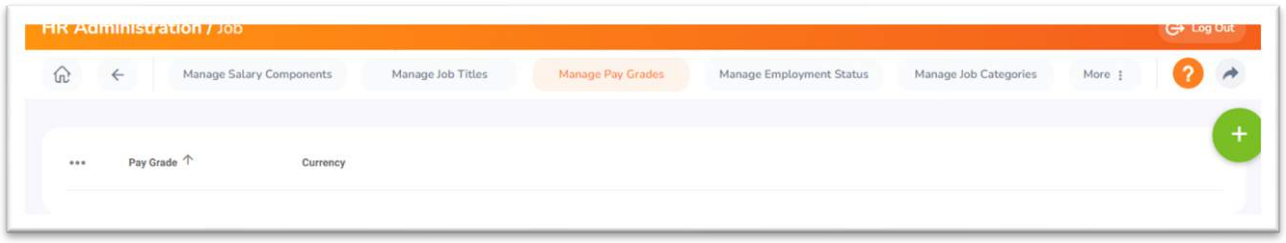
inside job bar there are more entities
(Manage_Salary_Components, Manage _Job_Type, Manage_Pay_Grades, Manage_Employement_Status, Manage_Pay_Grades, manage_Job_Category, Manage_Work_category, Manage_Work_Shifts)



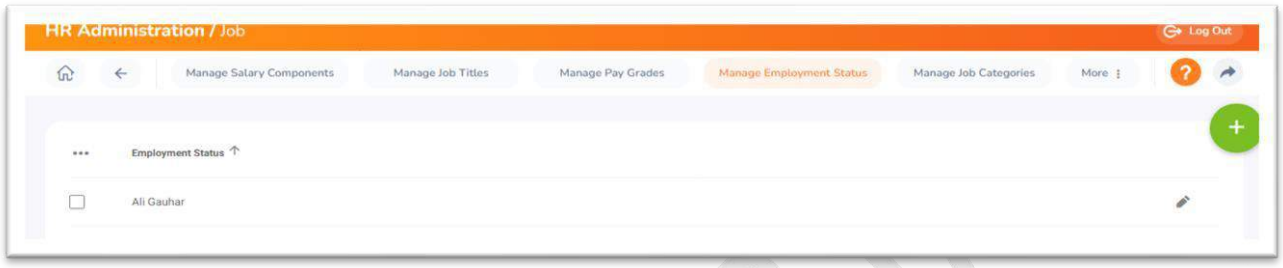
Manage_Salary_Component(Component_Name, Type, Part_of_Total_Payable?, Cost_TO_Company?



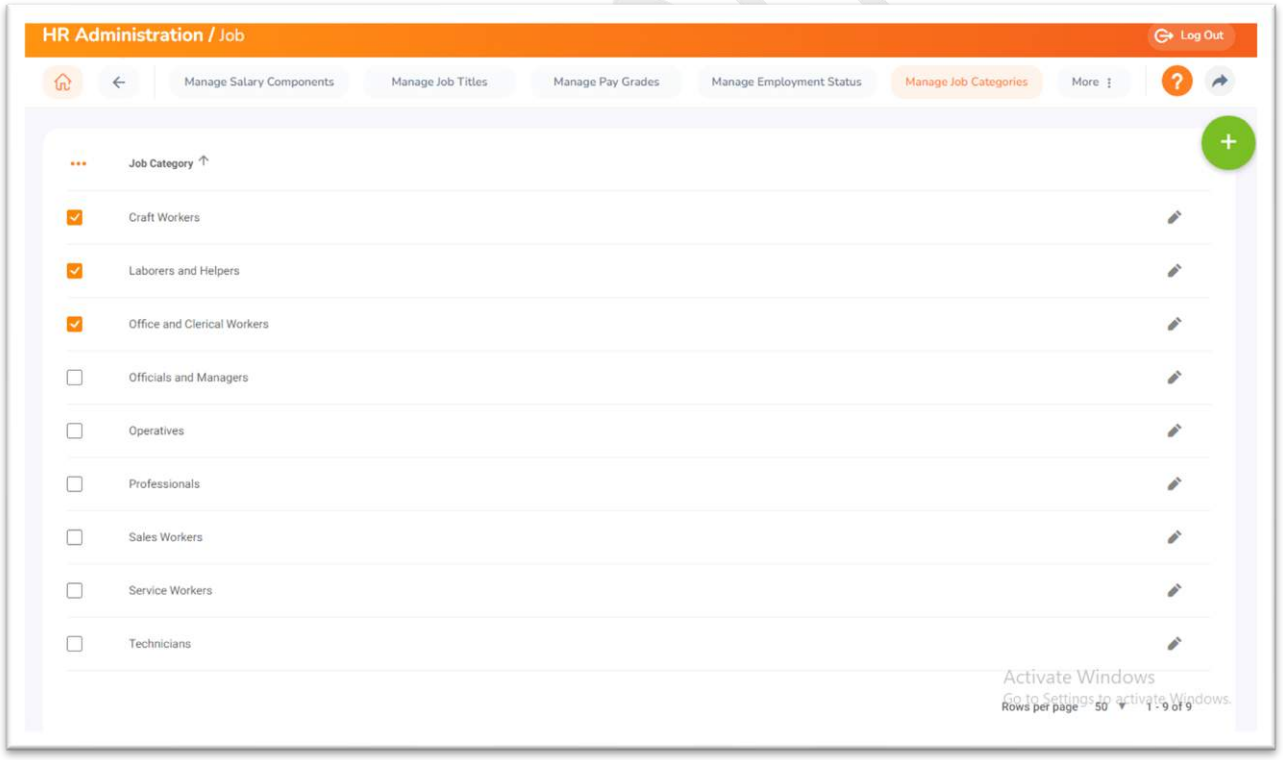
Manage_Job_Titles(Job_Title, Job_Discription)



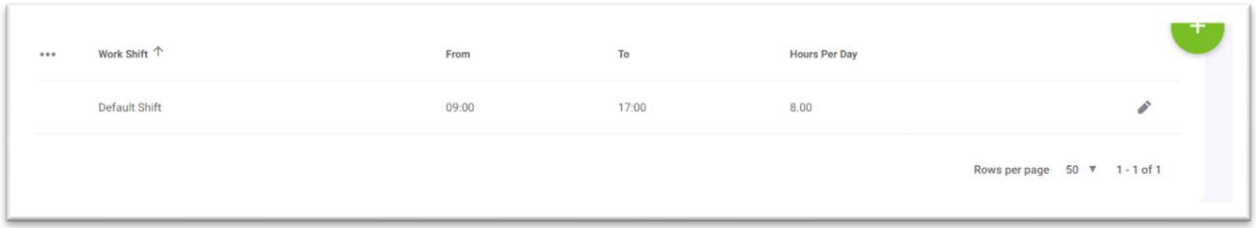
Manage_Pay_Grades(Pay_Grades,Currency)



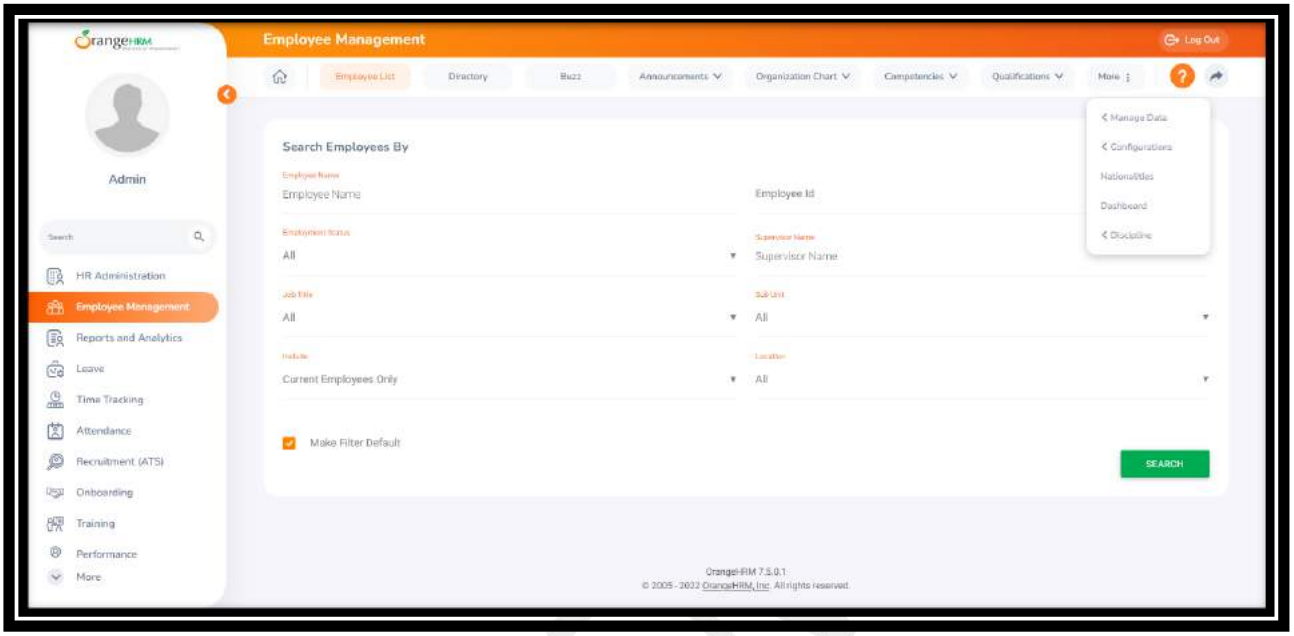
Manage_Employment_Status(Employment_Status)



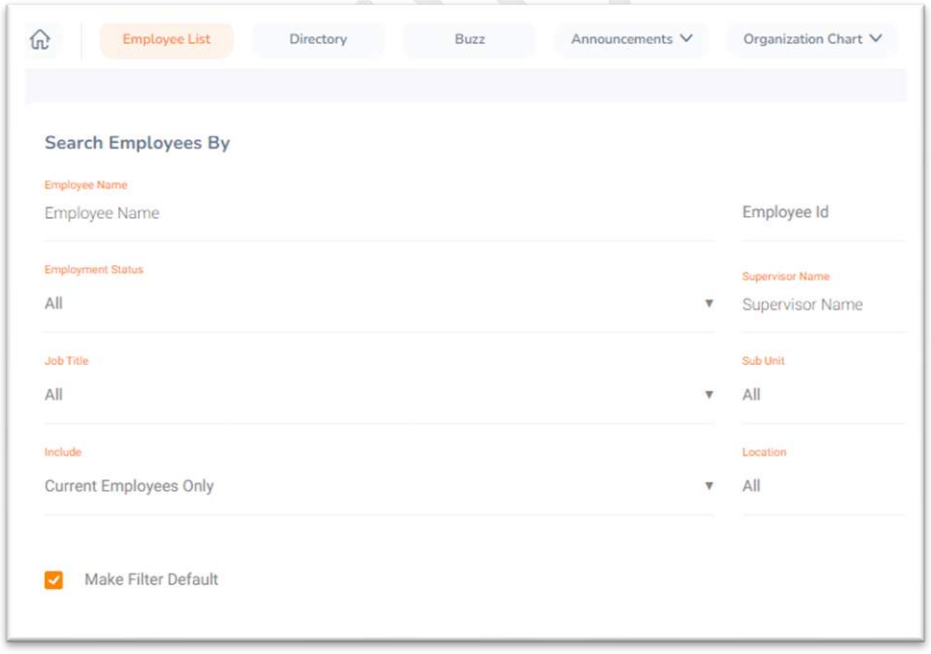
Manage_Job_Category(Job_Category(multivalued))



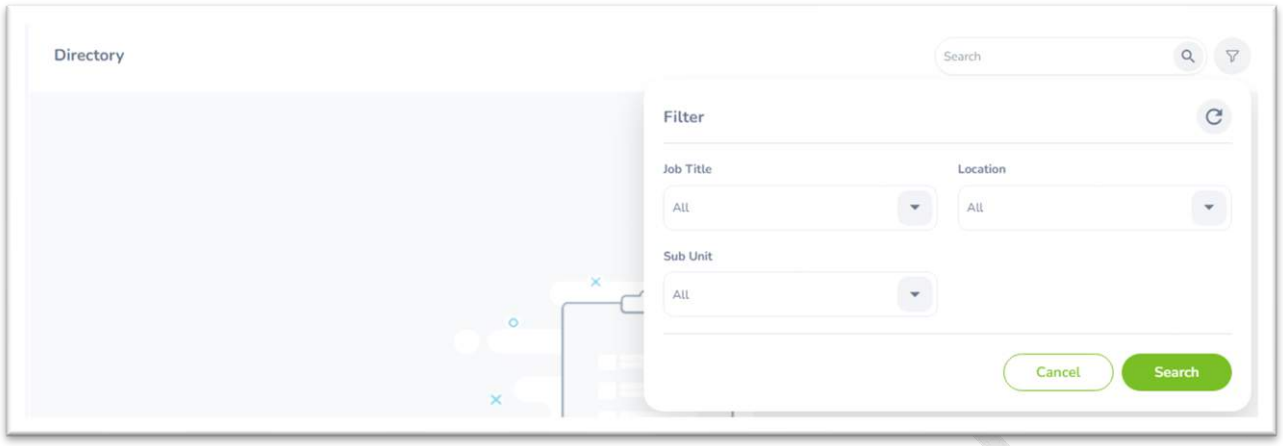
Manage_Work_Shift(Work_Shift, From, To, Hours_Per_Day(dependent on days—derived attribute)



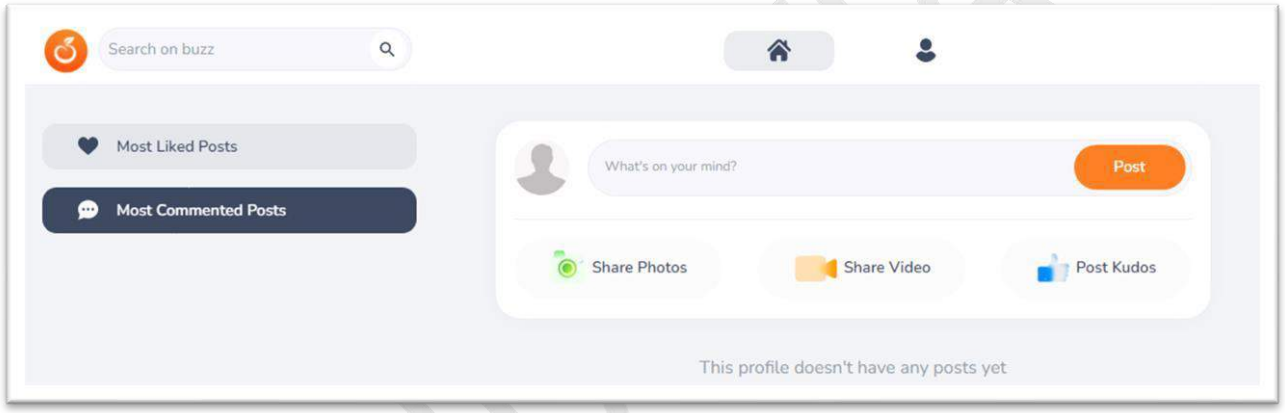
Employee_Management page contains the entities (Employee_List, Director, Buzz, Announcement, Organization_Chart, Competeness, Qualification, manage_Data, Configuration, Notification, Dashbord, Discipline)



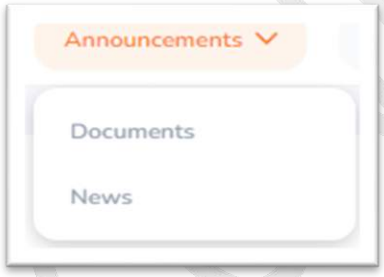
Employee_List(Employee_Name, Employee ID, Employee_Status, Supervisor_Name, Job_Title, Sub_Unit, Include, Location)



Directory(Job-Title, Location, Sub_Unit)



Buzz(Most_Liked_Posts, Most_Commented_Posts, Post)

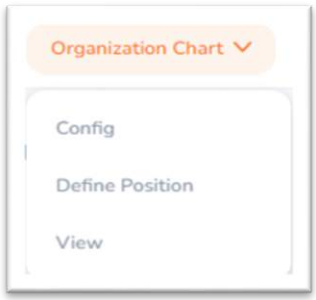


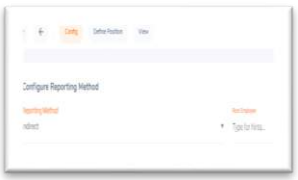
Announcements (Documents, News)

Config (Reporting_Method, Root Employer)

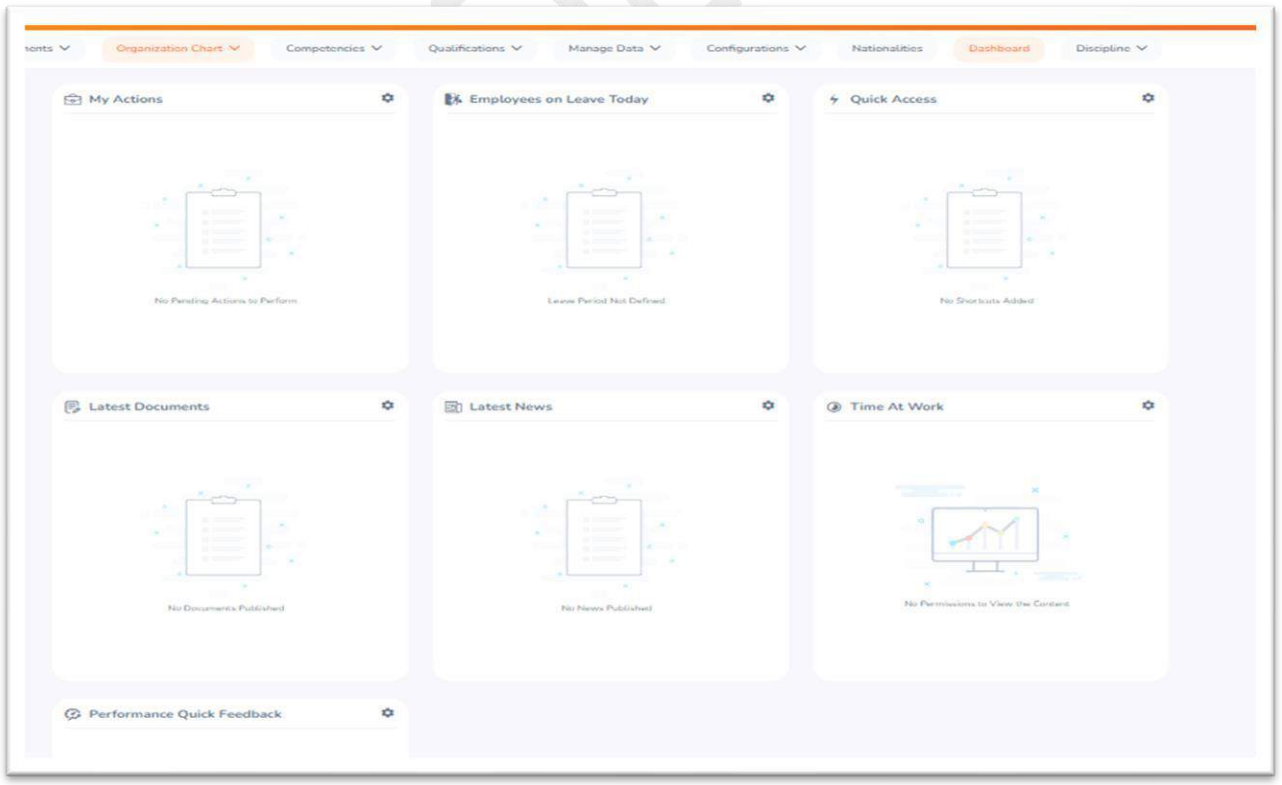
Position(Title)

View (organization chart)

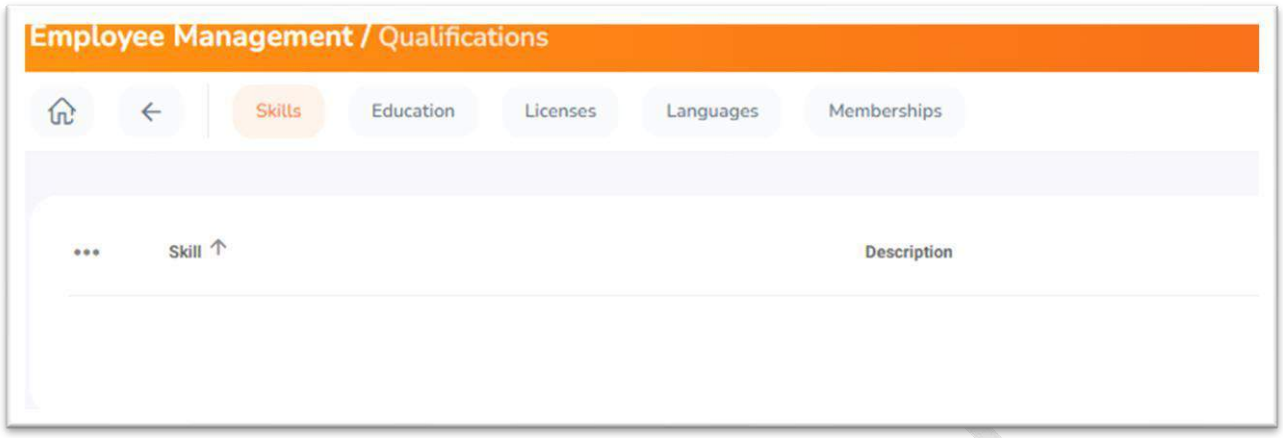




Competency_List (Miscellaneous, Description)

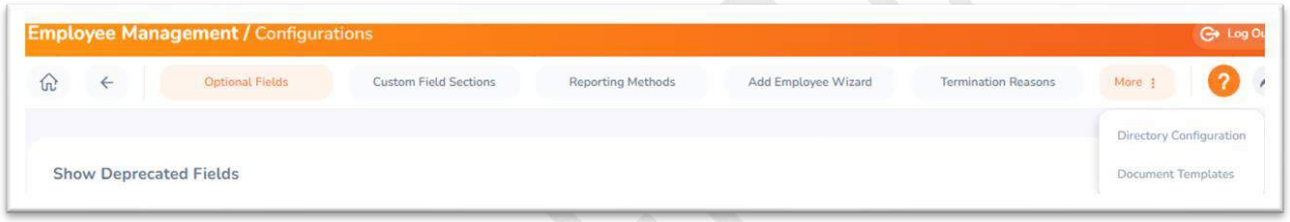


Dashboard (My_Actions, Employe_On_Leave, Quick_Access, Latest_Documents, Latest_News, Time_At_Work, Performance_Feedback)

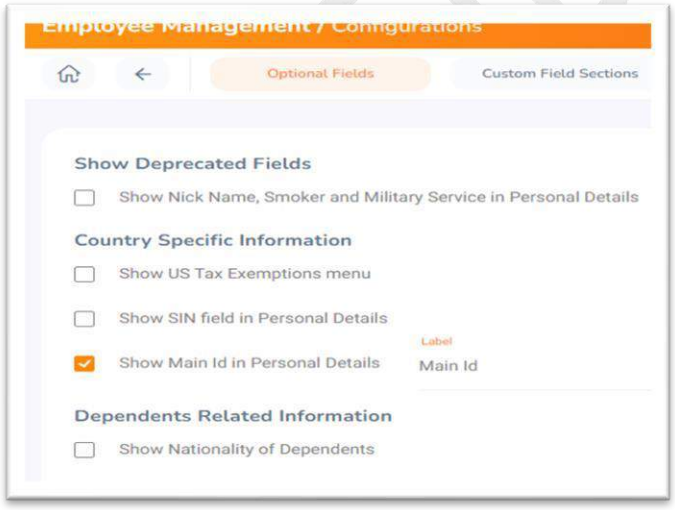


Qualification (Skills, Education, Licenses, Languages, MemberShip)

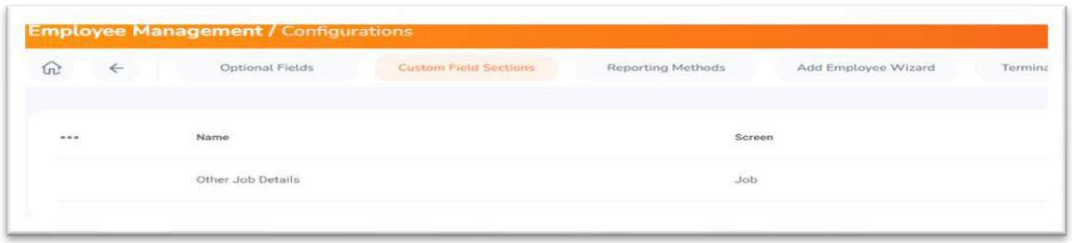
Skills(Skill, Description)



Configuration tab contains more entities (Optional_Fields, custom_Field_Sections,Reporting_Methods, Add_Employee_Wizard, Termination_Reason, Directory_Configuration, Document_Templates)



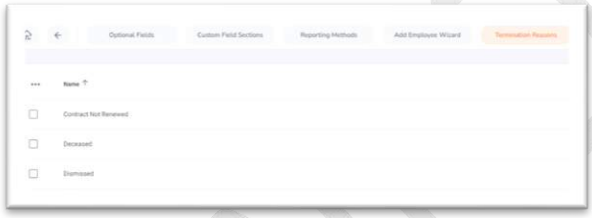
Optional_Fields(Show_Nick_Name, US_Tax_Examption, Show_SIN_Fields, Show Main_ID, Show_Nationality)



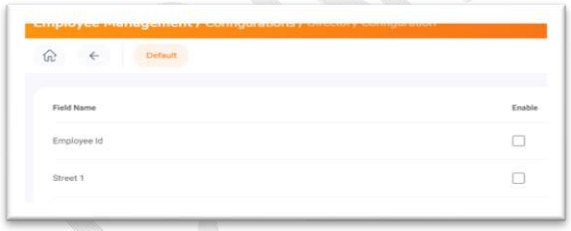
Custome_Field_Discription (Name,Job)

Reporting_Method (Name)

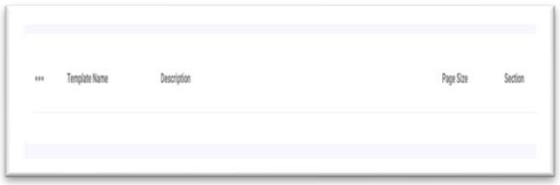
Employee_Wizard(Field_Configuration, Enable)



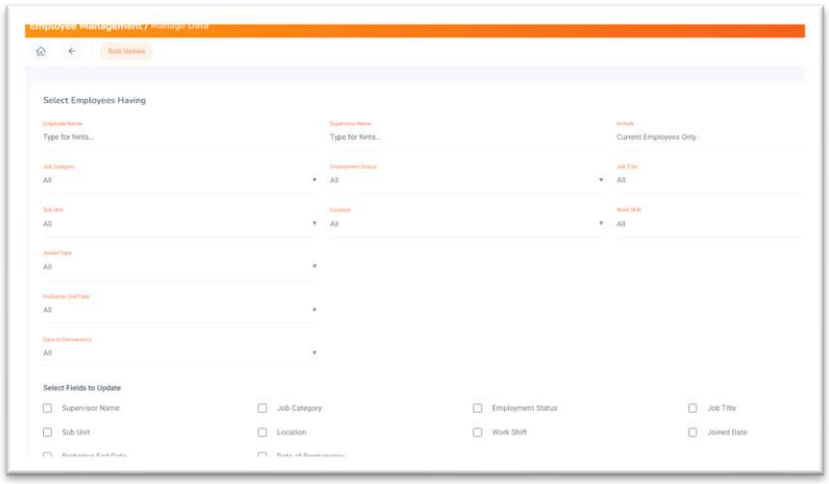
Termination_Reason(Name, Enable)



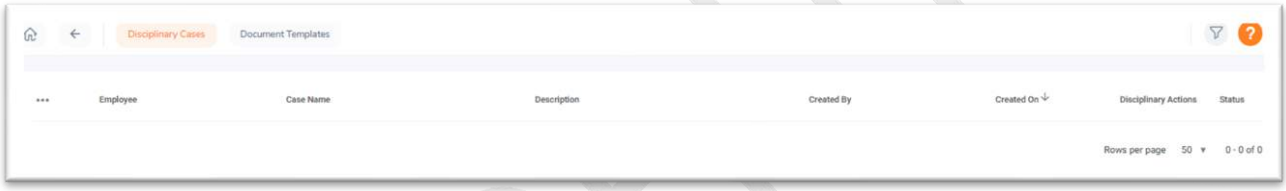
Director_Configuration (Field_Name, Enable)

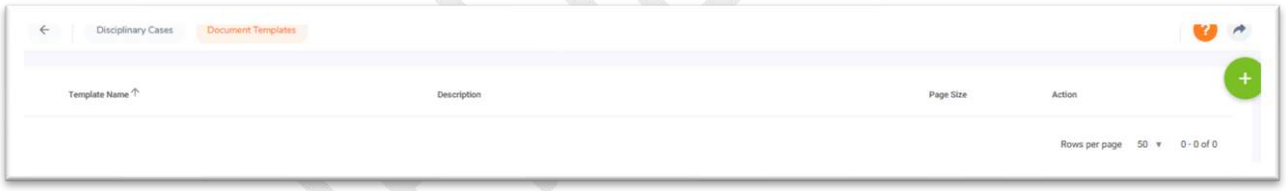


Templtes_Configuration (Templet_Name, Description, Page_Size, Section)



Manage_Data(Employee_Name, Supervisor_Name, Include, Job_Category, Employment_Status, Job_Title, Sub_Unit, Joined_Date, Probation_End_Date, Date_Of_Permanency, Employment_Status, Location, JobTitle, Work_Shift)

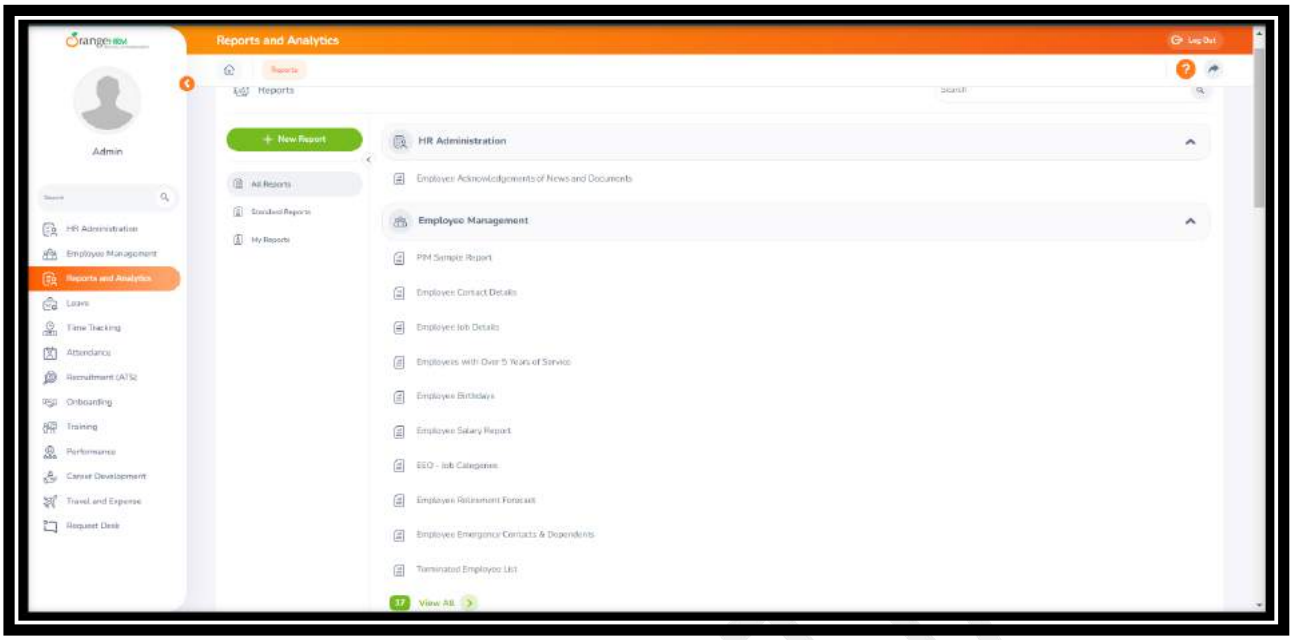




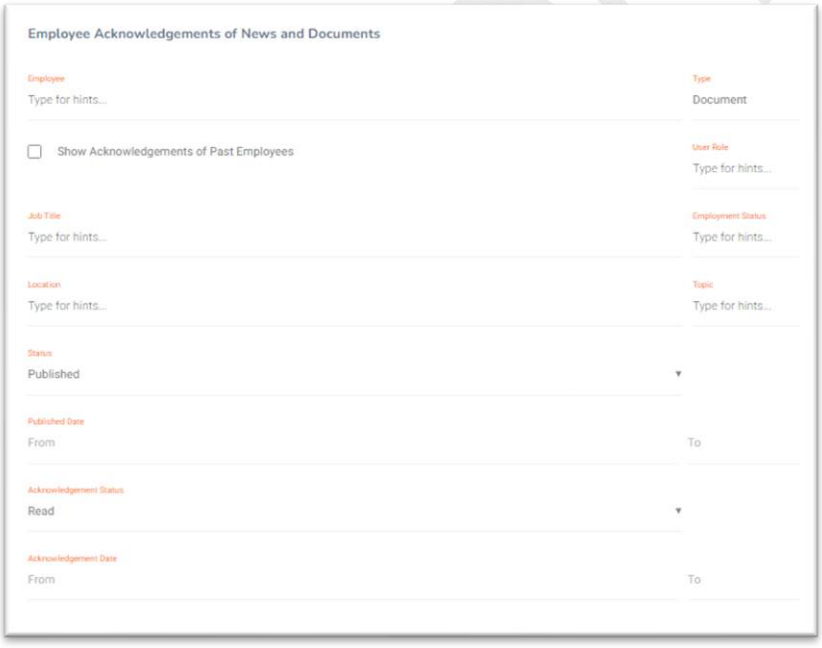
Discipline(Disciplinary_Case, Document_Templates)

Disciplinary_Case(Employee, Case_Name, Description, Created_By, Created_On, Disciplinary_Action, Status)

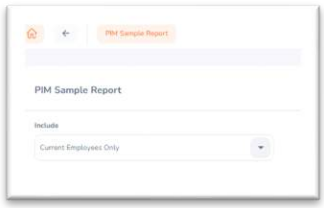
Document_Templets(Template_Name, Discription, Page_Size, Action)



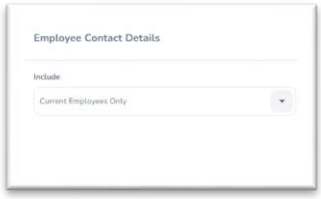
Report_And_Analysis contains entities (Employee_Achnowledgments, PIM_Sample_Report, Employee_Contacts_Details, 5Year_service_Employee, Employee_Birthday, Employee_Salary_Report, EEO_Job_Category, Employee_Salary_Report, Job_Category, Retirment_Forcaste, Employee_Retirement, Employee_emergency_contacts, Termination_Employee_List)



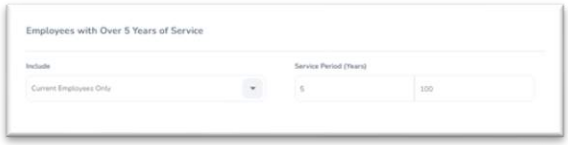
Employee_Achnowledgments (Employee_Name, Supervisor_Name, Include, Job_Category, Employment_Status, Job_Title, Sub_Unit, Joined_Date, Probation_End_Date, Date_Of_Permanency, Employment_Status, Location, JobTitle, Work_Shift)



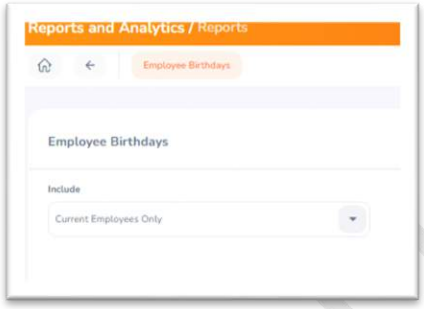
PIM_Sample_Report(includes)



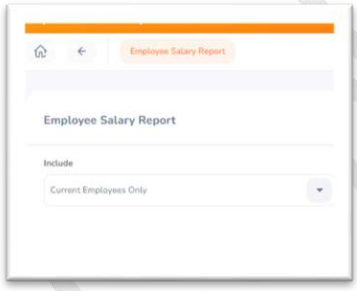
Employee_Contact_Details(includes)



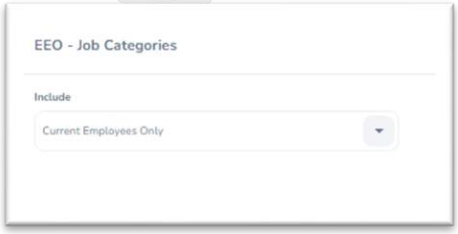
5Year_service_Employee(includes, time_Period)



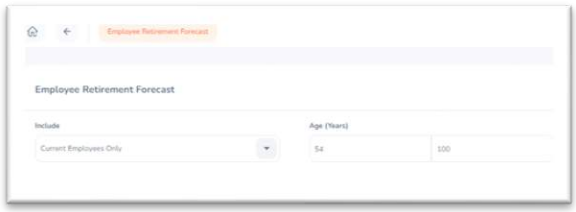
Employee_Birthday(includes)



Employee_Salary_Report(includes)

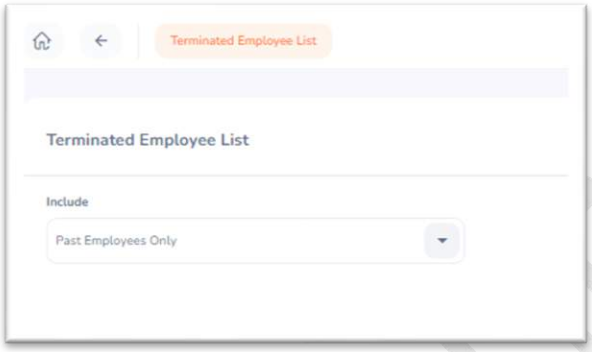


Job_Category(includes)

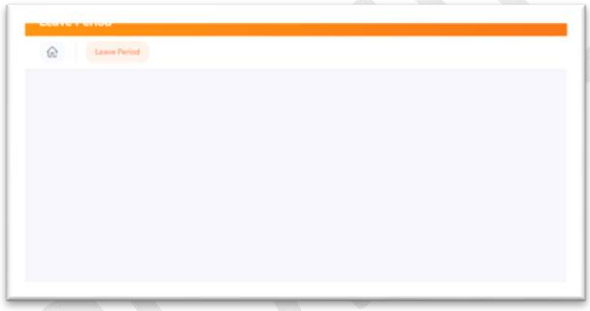


Forcast(includes, Age)

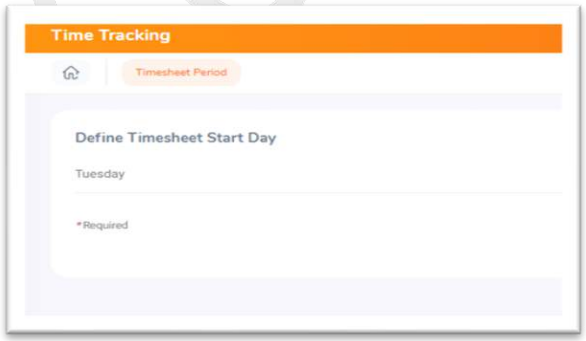
Contacts/Dependents(includes)



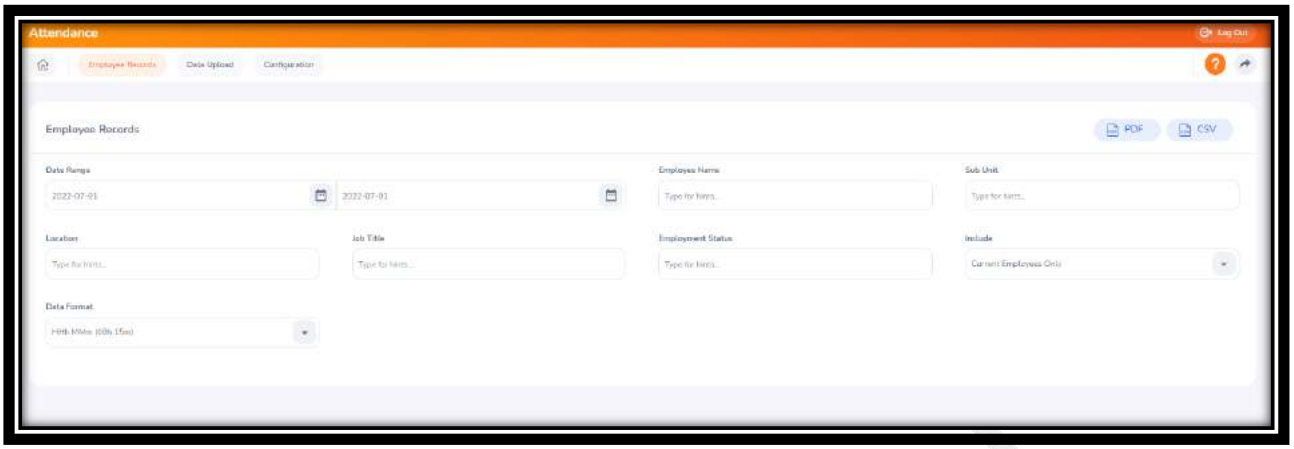
Terminated_Employee(includes)



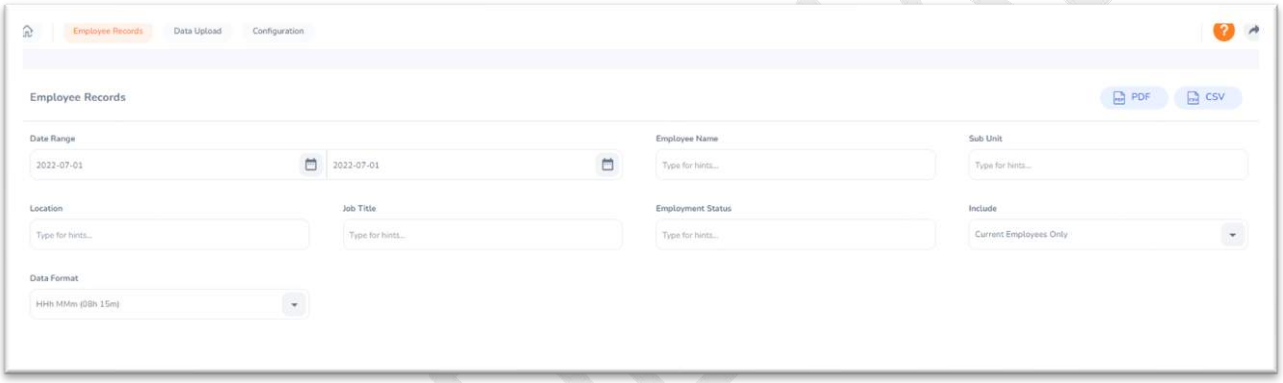
Leave_Periods(period, from, to, reasons)



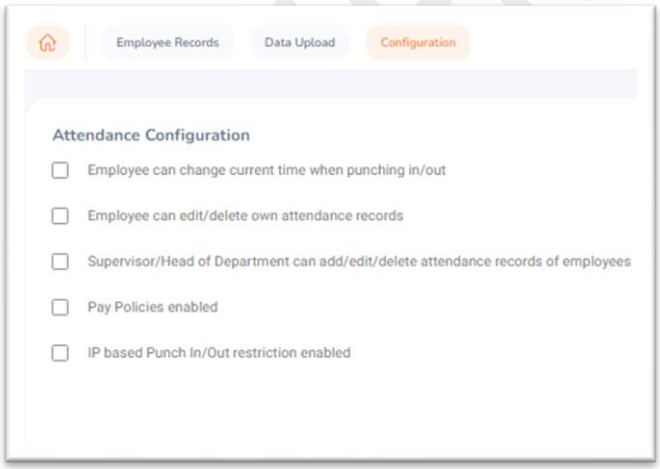
Time_Tracking(Start_Day)



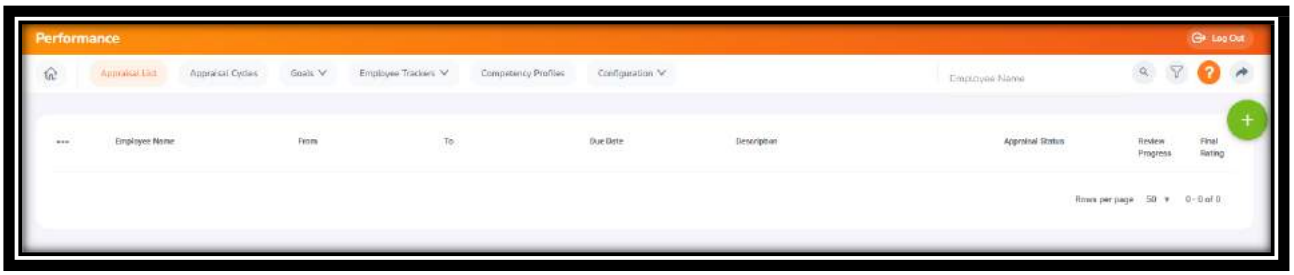
Attendence includes entities(employee_Records, Data_Upload, Configuration)



Employee_records(Data_Range(from, to), EmployeeName, Sub_Unit, Location, Job_Title, Employment_status, includes, Data_Formate)

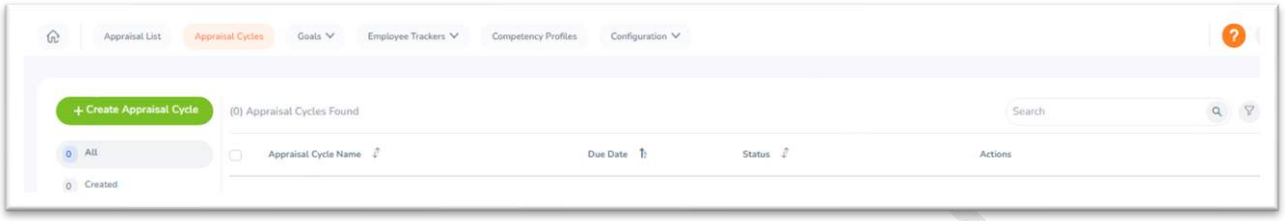


Configuration(Change_current_time_authority, Delete_attendence_Record_authority, Pay_Policy_Enabled, Ip_Base_PunchIN)

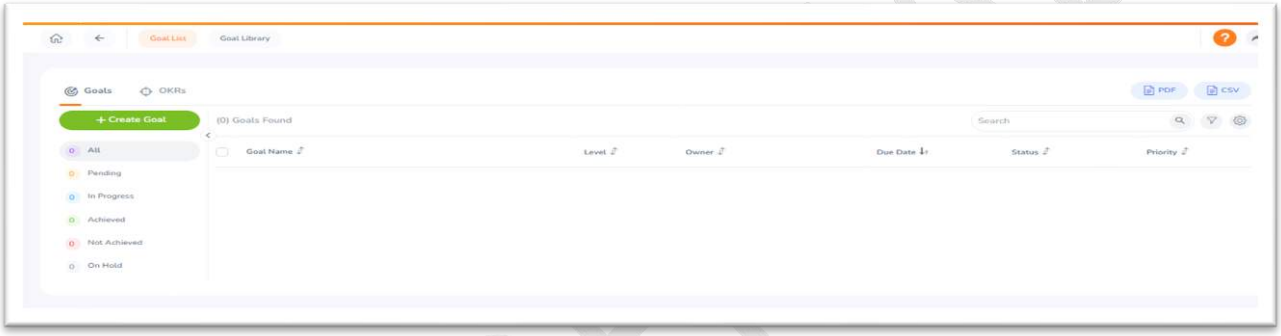


Performance contains entities (Appraisal_List, Appraisal_Cycle, Goals, Employee_Tracker, Competence_profiles, Configuration)

Appraisal_list(Employee_List, From, To,Due_Date, Discription, Appraisal_Status, Review_Progress, Final_Rating)



Appraisal_cycles (Appraisal_cycle_Name, Due_date, Status, Action)

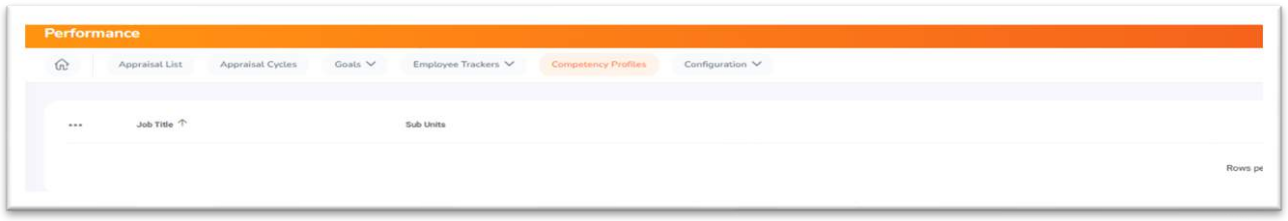


Goals(Goal_List(Goal_Name, Level, Owner, Due_Date, Status, Priority), Goal_Library(Goal_Name,Level))

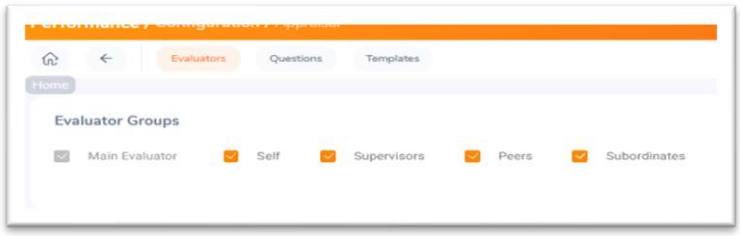
Employee_Tracker contains entities (Tracker_List, Manage_Trackers)

Tracker_List(Tracker_Name, Employee, Added_Date, Modified_Date)

Manage_Trackers(Tracker_Name, Employee, Added_Date, Modified_Date)



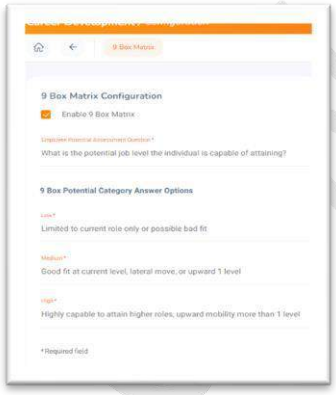
Company_Profile(Job_Title,Sub_Units)



Configuration(Evaluator, Questions, Templets)

Career_development includes(individual_DEV_Plan, Configuration)

individual_DEV_Plan(Employee, IDP_Name, Coach, Closed_On, Status)



Configuration(9_Box_matrix_Config, 9_Box_Answer)

All the above analysis is done for making a promotion panel in the HRM Management System that must contain data about the

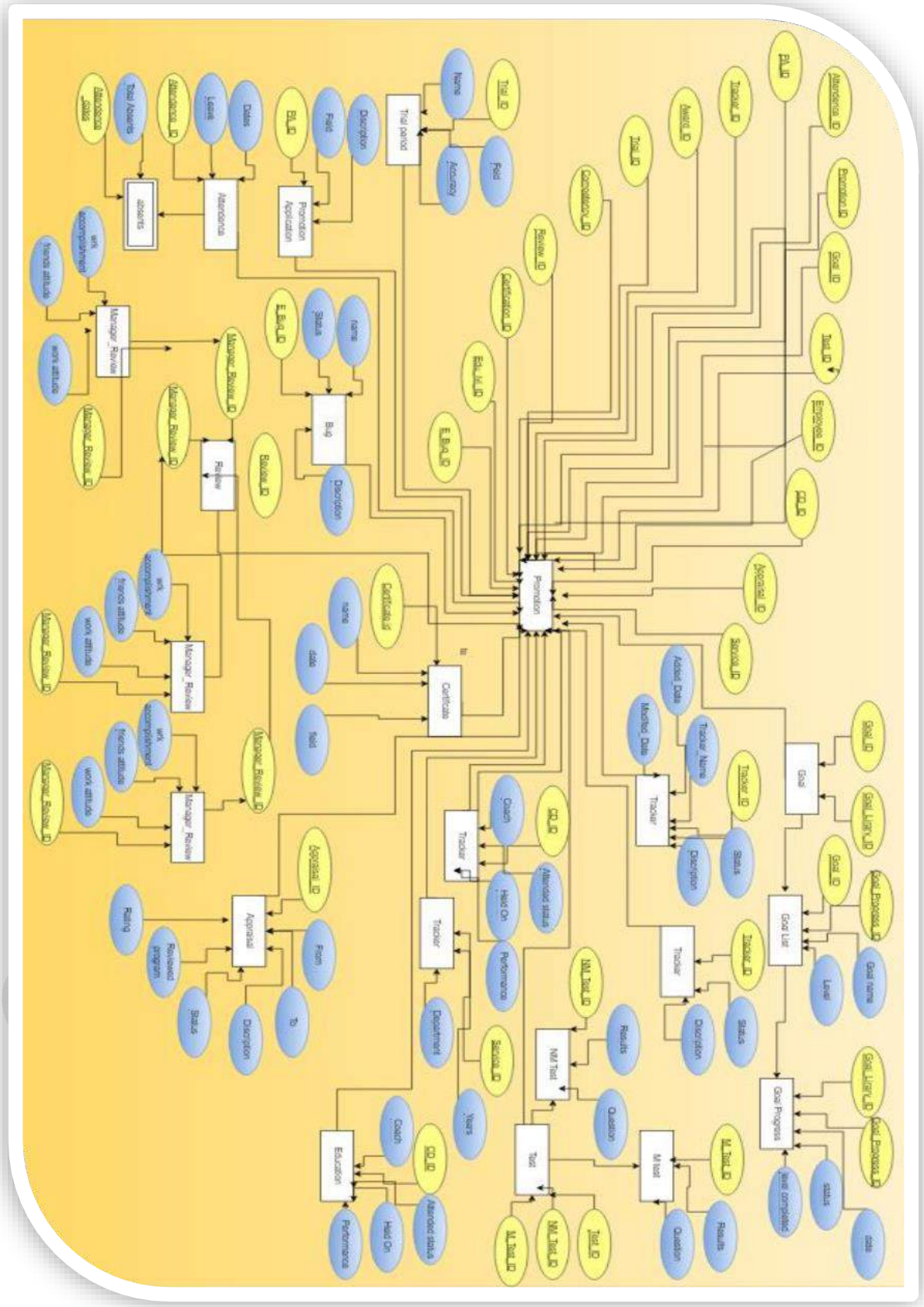
employee progress so it can help in making bold decisions for company growth

Business rules of promotion Panel:

1. One employee can have one promoting id
2. Promoting section keep record of employee attendance of multiple days
3. Promoting id contains all the bug that occurred due to the inefficiency of employee
4. Manager, college or clients can give only one review to employee
5. Company can make the manager, colleges or clients fill multiple form on different aspects on employer
6. Employee can have multiple appraisal/interview
7. Company can take 0 or many trials on any certain work/procedure from the employee
8. employee can apply for 0 or 1 promoting application if he is eligible
9. Employee can have 0 or multiple award and certifications
10. Employee can have multiple educational levels
11. Employee can have served multiple roles in the company
12. Employee can have attended zero or multiple career development programs
13. One employee takes 0 or many tests
14. One test can contain 0 or many mandatory tests
15. One test can contain 0 or many non-mandatory tests
16. Employee can have competency single profile for recording competency whereas competency profile can contain
17. Company can put multiple trackers on the employee data to find out the performance, graphs of employee, for example if there is a sales man how would you find out the progress report of the sales man data? *** idea taken from orange HRM
18. Employee can fulfill 0 or many goals or mile stones that the company has set for HRM

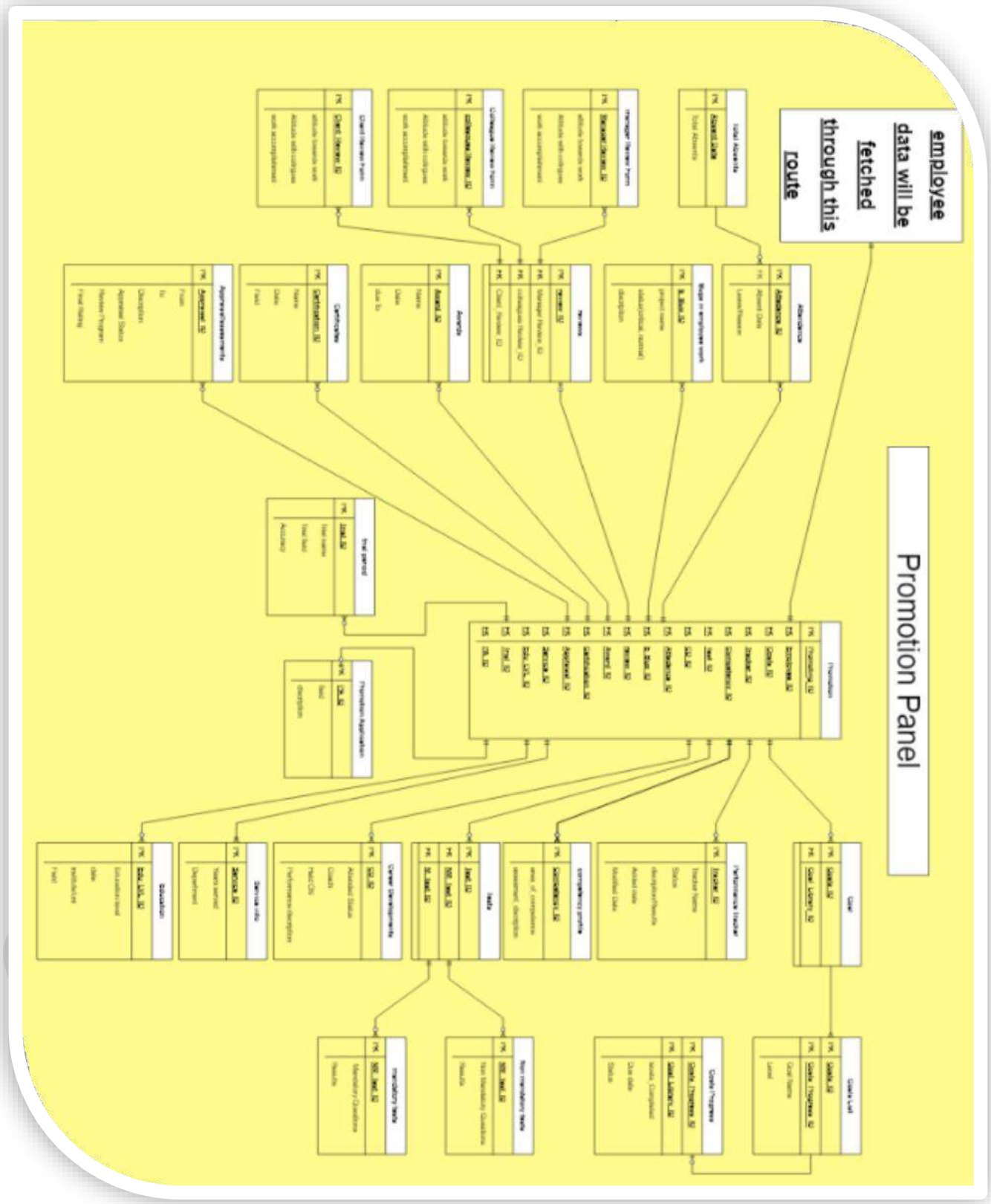
Entity Relationship Diagram

https://drive.google.com/file/u/2/d/1YUcfc-kAXOPEI7JBsE8WDXf-c0SNq2T5/view?usp=sharing


Promotion
Certificate
Trial period
Trial
Attendance
Absents
Manager_Review
Review
Appraisal
Promotion Application
Bug
Tracker
Goal
Goal List
Goal Progress
Education
Test
MI Test
MI test
Name
Field
Accuracy
Description
Dates
Leave
Total Absents
Status
name
Bug_ID
Tracker_ID
Goal_ID
Test_ID
Employee_ID
Appraisal_ID
Salary_ID
Certificate_id
Manager_Review_ID
Review_ID
Promotion_ID
Attendance_ID
Trial_ID
Goal_Progress_ID
Goal_Name_ID
Tracker_Name
Attended Date
Modified_Date
Goal name
Level
Goal_Name_ID
Goal_Progress_ID
status
date
Tracker_Name
Attended status
Held On
Performance
Dept
Years
Coach
Department
Question
Results
MI_Test_ID
Test_ID
Rating
Reviewed program
From
To
work accomplishments
Friends attitude
work attitude
Manager_Review_ID
Review_ID
Bug_ID
Tracker_ID
Goal_ID
Goal_Name_ID
Goal_Progress_ID
Test_ID
MI_Test_ID
Appraisal_ID
Salary_ID
Certificate_id
Attendance_ID
Trial_ID
Promotion_ID
Employee_ID
Review_ID
Coordination_ID
Assist_ID
Tracker_ID
Bug_ID

Conceptual to Logical Mapping

https://drive.google.com/file/d/1U5_nOeWnbdsxNryQXQjAX61bqwtIkQOe/view?usp=sharing



Normalized Tables up to BCNF

Functional Dependencies before Normalization

1. **Promotion(** Promoting_ID, Employee_ID, Goals_ID, Tracker_ID, Compensation_ID, Test_ID, CD_ID, Attendence_ID, E_BUG_ID, Review_ID, Award_ID, Certification_ID, Appraisal_ID, Service_ID, Edu_LV_ID, Trial_ID, PA_ID)
2. **Goal(** Goal_ID, Goal_ID, Goals_Progress_ID, Goal_Name, Level, Due_Date, Status)
3. **Performance_Tracker(** Tracker_ID, Tracker_name, Status, Results, Date, Modified_date)
4. **Competency_Profile(**Tracker_ID, area_Of_competency, assessment_discription)
5. **Test(** Test_ID, Mandatory_Questions, Non_Mandatory_Questions, Results)
6. **Career_Development(** CD_ID, Attended_status, Coach, Held_on, Performance_discription)
7. **Service info(**Service_ID, Years_Served, Department)
8. **Education(** Edu_LVL_ID, Education_level, Date, Institution, Field)
9. **Promotion_Application(**PA_ID, field, description)
10. **Trial_period(**Trial_ID, Tril_period, Trial_name, Trial_Field, Accuracy)
11. **Appraisal(**Appraisal_ID, From, To, DueDate, Discription, Status, Review_program, Final _Rating)
12. **Certificates(**Certificate_ID, Name, Date, Field)
13. **Awards(** Award_ID, Name, Date, Due_To)
14. **Review(**Review_ID, Form_ID, Manage_Review, Colleagues_Review, Clients_Review, Form_ID, Attitude_Towards_Work, Attitude_with_colleagues, Work_accomplishment)
15. **Bugs(**E_Bug_ID, Project Name, Status, Discription)
16. **Attendence(** Attendence_ID, Total_Absents, Absent_date, Reason)

Functional Dependencies after first Normalization

1. Promotion(Promoting_ID, Employee_ID, Goals_ID, Tracker_ID, Compensation_ID, Test_ID, CD_ID, Attendence_ID, E_BUG_ID, Review_ID, Award_ID, Certification_ID, Appraisal_ID, Service_ID, Edu_LV_ID, Trial_ID, PA_ID)
2. **Goal(** Goal_ID, Goal_Library_ID, Goals_Progress_ID)
3. **Goals_Library(**Goal_Library_ID, Goal_Name, Level)
4. **Goals_Progress(**Goals_Progress_ID , Goal_Name, Level, Due_Date, Status)
5. **Performance_Tracker(** Tracker_ID, Tracker_name, Status, Results, Date)
6. **Performance_Tracker_Multivalued(**Tracker_ID, Modified_date)
7. **Competency_Profile(** competency_ID, area_Of_competency, assessment_discription)
8. **Test(** Test_ID, Mandatory_Questions, Non_Mandatory_Questions, Results)
9. **Career_Development(** CD_ID, Attended_status, Coach, Held_on, Performance_discription)
10. **Service_info(**Service_ID, Years_Served, Department)
11. **Education(** Edu_LVL_ID, Education_level, Date, Institution, Field)
12. **Promotion_Application(**PA_ID, field, description)
13. **Trial_period(**Tril_period, Trial_name, Trial_Field, Accuracy)
14. **Appraisal(**Appraisal_ID, From, To, DueDate, Discription, Status, Review_program, Final _Rating)
15. **Certificates(**Certificate_ID, Name, Date, Field)
16. **Awards(** Award_ID, Name, Date, Due_To)
17. **Review(**Review_ID, Form_ID, Manage_Review, Colleagues_Review, Clients_Review)

18. Review_Form (Review_ID, Attitude_Towards_Work, Attitude_with_colleagues, Work_accomplishment)
19. Bugs(E_Bug_ID, Project Name, Status, Discription)
20. Attendence(Attendence_ID, Total_Absents, Absent_date, Reason)

Functional Dependencies after Second Normalization

1. Promotion(Promoting_ID, Employee_ID, Goals_ID, Tracker_ID, Compensation_ID, Test_ID, CD_ID, Attendence_ID, E_BUG_ID, Review_ID, Award_ID, Certification_ID, Appraisal_ID, Service_ID, Edu_LV_ID, Trial_ID, PA_ID)
2. Goal(Goal_ID, Goal_Library_ID, Goals_Progress_ID)
3. Goals_Library(Goal_Library_ID, Goal_Name, Level)
4. Goals_Progress(Goals_Progress_ID , Goal_Name, Level, Due_Date, Status)
5. Performance_Tracker(Tracker_ID, Tracker_name, Status, Results, Date)
6. Performance_Tracker_Multivalued(Tracker_ID, Modified_date)
7. Competency_Profile(competency_ID, area_Of_competency, assessment_discription)
8. Test(Test_ID, Mandatory_Questions, Non_Mandatory_Questions, Results)
9. Mandatory_Test(Test_ID, Mandatory_Questions, Results)
10. Non_Mandatory_Test(Test_ID, Non_Mandatory_Questions, Results)
11. Career_Development(CD_ID, Attended_status, Coach, Held_on, Performance_discription)
12. Service_info(Service_ID, Years_Served, Department)
13. Education(Edu_LVL_ID, Education_level, Date, Institution, Field)
14. Promotion_Application(PA_ID, field, description)
15. Trial_period(Tril_period, Trial_name, Trial_Field, Accuracy)
16. Appraisal(Appraisal_ID, From, To, DueDate, Discription, Status, Review_program, Final _Rating)
17. Certificates(Certificate_ID, Name, Date, Field)
18. Awards(Award_ID, Name, Date, Due_To)
19. Review(Review_ID, Form_ID, Manage_Review, Colleagues_Review, Clients_Review)
20. Review_Form (Review_ID, Attitude_Towards_Work, Attitude_with_colleagues, Work_accomplishment)
21. Bugs(E_Bug_ID, Project Name, Status, Discription)
22. Attendence(Attendence_ID, Total_Absents, Absent_date, Reason)

Functional Dependencies after Third Normalization

1. Promotion(Promoting_ID, Employee_ID, Goals_ID, Tracker_ID, Compensation_ID, Test_ID, CD_ID, Attendence_ID, E_BUG_ID, Review_ID, Award_ID, Certification_ID, Appraisal_ID, Service_ID, Edu_LV_ID, Trial_ID, PA_ID)
2. Goal(Goal_ID, Goal_Library_ID, Goals_Progress_ID)
3. Goals_Library(Goal_Library_ID, Goal_Name, Level)
4. Goals_Progress(Goals_Progress_ID , Goal_Name, Level, Due_Date, Status)
5. Performance_Tracker(Tracker_ID, Tracker_name, Status, Results, Date)

6. **Performance_Tracker_Multivalued**(Tracker_ID, Modified_date)
7. **Competency_Profile**(competency_ID, area_Of_competency, assessment_discription)
8. **Test**(Test_ID, Mandatory_Questions, Non_Mandatory_Questions, Results)
9. **Mandatory_Test**(Test_ID, Mandatory_Questions, Results)
10. **Non_Mandatory_Test**(Test_ID, Non_Mandatory_Questions, Results)
11. **Career_Development**(CD_ID, Attended_status, Coach, Held_on, Performance_discription)
12. **Service_info**(Service_ID, Years_Served, Department)
13. **Education**(Edu_LVL_ID, Education_level, Date, Institution, Field)
14. **Promotion_Application**(PA_ID, field, description)
15. **Trial_period**(Tril_period, Trial_name, Trial_Field, Accuracy)
16. **Appraisal**(Appraisal_ID, From, To, DueDate, Discription, Status, Review_program, Final _Rating)
17. **Certificates**(Certificate_ID, Name, Date, Field)
18. **Awards**(Award_ID, Name, Date, Due_To)
19. **Review**(Review_ID, Manage_Review, Colleagues_Review, Clients_Review)
20. **Review_Form_Colleague** (Review_ID, Colleagues_Review, Attitude_Towards_Work, Attitude_with_colleagues, Work_accomplishment)
21. **Review_Form_Manager** (Review_ID, Manage_Review, Attitude_Towards_Work, Attitude_with_colleagues, Work_accomplishment)
22. **Review_Form_Client** (Review_ID, Clients_Review, Attitude_Towards_Work, Attitude_with_colleagues, Work_accomplishment)
23. **Bugs**(E_Bug_ID, Project Name, Status, Discription)
24. **Attendence**(Attendence_ID, Total_Absents, Reason)
25. **Total_absents**(Absent_Dates,Total_Absents)

Functional Dependencies after BCNF Normalization

26. **Promotion**(Promoting_ID, Employee_ID, Goals_ID, Tracker_ID, Compensation_ID, Test_ID, CD_ID, Attendence_ID, E_BUG_ID, Review_ID, Award_ID, Certification_ID, Appraisal_ID, Service_ID, Edu_LV_ID, Trial_ID, PA_ID)
27. **Goal**(Goal_ID, Goal_Library_ID, Goals_Progress_ID)
28. **Goals_Library**(Goal_Library_ID, Goal_Name, Level)
29. **Goals_Progress**(Goals_Progress_ID , Goal_Name, Level, Due_Date, Status)
30. **Performance_Tracker**(Tracker_ID, Tracker_name, Status, Results, Date)
31. **Performance_Tracker_Multivalued**(Tracker_ID, Modified_date)
32. **Competency_Profile**(competency_ID, area_Of_competency, assessment_discription)
33. **Test**(Test_ID, Mandatory_Questions, Non_Mandatory_Questions, Results)
34. **Mandatory_Test**(Test_ID, Mandatory_Questions, Results)
35. **Non_Mandatory_Test**(Test_ID, Non_Mandatory_Questions, Results)
36. **Career_Development**(CD_ID, Attended_status, Coach, Held_on, Performance_discription)
37. **Service_info**(Service_ID, Years_Served, Department)
38. **Education**(Edu_LVL_ID, Education_level, Date, Institution, Field)
39. **Promotion_Application**(PA_ID, field, description)
40. **Trial_period**(Tril_period, Trial_name, Trial_Field, Accuracy)

41. **Appraisal**(Appraisal_ID, From, To, DueDate, Discription, Status, Review_program, Final _Rating)
42. **Certificates**(Certificate_ID, Name, Date, Field)
43. **Awards**(Award_ID, Name, Date, Due_To)
44. **Review**(Review_ID, Manage_Review, Colleagues_Review, Clients_Review)
45. **Review_Form_Colleague** (Review_ID, Colleagues_Review, Attitude_Towards_Work, Attitude_with_colleagues, Work_accomplishment)
46. **Review_Form_Manager** (Review_ID, Manage_Review, Attitude_Towards_Work, Attitude_with_colleagues, Work_accomplishment)
47. **Review_Form_Client** (Review_ID, Clients_Review, Attitude_Towards_Work, Attitude_with_colleagues, Work_accomplishment)
48. **Bugs**(E_Bug_ID, Project Name, Status, Discription)
49. **Attendence**(Attendence_ID, Total_Absents, Reason)
50. **Total_absents**(Absent_Dates,Total_Absents)

Code

----------Goal Progress Table----------

```
create table Goal_Progress (
----------attributes
Goal_Progress_ID int not null,
Goal_Library_ID int not null,
levels_Completed int null,
DueDate date not null,
Status Text null,
----------Primary Keys
primary key (Goal_Progress_ID)
----------Foreign Keys
)

----------data insertion
insert into Goal_Progress (Goal_Progress_ID, Goal_Library_ID, levels_Completed, DueDate, Status)
                                                    values (1,1,3,'3 Dec 2022', 'Good')
---****************************************
---****************************************
```

----------Goal List Table----------

```
create table Goal_List (
----------attributes
```

```
Goal_Library_ID int not null,
Goal_ID int not null,
Goal_Name varchar(20) null,
levels int not null,
----------Primary Keys
primary key (Goal_Library_ID),
----------Foreign Keys
Goal_Progress_ID int foreign key references Goal_Progress(Goal_Progress_ID)
)

----------data insertion
insert into Goal_list (Goal_Library_ID, Goal_ID, Goal_Name, levels)
                                                    values (1,1,'Making a Website', 3)
---**************************************
---**************************************

----------Goal Table----------
create table Goal (
----------attributes
Goal_ID int not null,
----------Primary Keys
primary key (Goal_ID),
----------Foreign Keys
Goal_Library_ID int foreign key references Goal_List(Goal_Library_ID)
)

----------data insertion
insert into Goal (Goal_ID, Goal_Library_ID)
                                                values (1,1)
---========================================
---========================================

----------Performance Tracker Table----------
create table Performance_Tracker (
----------attributes
Tracker_ID int not null,
Promotion_ID int not null,
Tracker_Name varchar(30) not null,
```

```
Status varchar(20) null,
Results Text null,
Added_Date date not null,
Modified_Date Date  null
----------Primary Keys
primary key (Tracker_ID)
----------Foreign Keys
)

----------data insertion
insert into Performance_Tracker (Tracker_ID, Promotion_ID, Tracker_Name, Status, Results, Added_Date, Modified_Date)
                                                    values (1,1,' User Reviews about Website','Running','Good','2 Jan 2022', '15 jan
2022')
---========================================
---========================================

----------Competency Profile Table----------
create table Competency_Profile (
----------attributes
Competency_ID int not null,
Promotion_ID int not null,
area_of_competence varchar(20) null,
assesment_discription Text null,
----------Primary Keys
primary key (Competency_ID)
----------Foreign Keys
)

----------data insertion
insert into Competency_Profile (Competency_ID, Promotion_ID, area_of_competence, assesment_discription)
                                                    values (1,1,'Data Base','Lacking accuracy in Schema')
insert into Competency_Profile (Competency_ID, Promotion_ID, area_of_competence, assesment_discription)
                                                    values (2,1,'Block Chain','Good in making Smart Contracts')
---========================================
---========================================

----------Non Mandatory Test Table----------
create table Non_Mandatory_Test (
```

----------attributes

NM_Test_ID int not null,

Promotion_ID int not null,

Non_Mandatory_Question Text null,

Results Text null,

----------Primary Keys

primary key (NM_Test_ID)

----------Foreign Keys

)

----------data insertion

insert into Non_Mandatory_Test (NM_Test_ID, Promotion_ID, Non_Mandatory_Question, Results)

values (1,1,null,null)

---**********

---**********

----------Mandatory Test Table----------

create table Mandatory_Test (

----------attributes

M_Test_ID int not null,

Promotion_ID int not null,

Mandatory_Question Text null,

Results Text null,

----------Primary Keys

primary key (M_Test_ID),

----------Foreign Keys

)

----------data insertion

insert into Mandatory_Test (M_Test_ID, Promotion_ID, Mandatory_Question, Results)

values (1,1,'What Is The Difference Between ERD and Schema',

'Correct Answer')

insert into Mandatory_Test (M_Test_ID, Promotion_ID, Mandatory_Question, Results)

values (2,1,'What does Phishing Maens','Correct Answer')

---**********

---**********

----------Test Table----------

create table Test (

----------attributes

```
Test_ID int not null,
promotion_ID int not  null,
----------Primary Keys
primary key (Test_ID),
----------Foreign Keys
NM_Test_ID int foreign key references Non_Mandatory_Test(NM_Test_ID) null,
M_Test_ID int foreign key references Mandatory_Test(M_Test_ID) null
)
----------data insertion
insert into Test (Test_ID, promotion_ID, NM_Test_ID, M_Test_ID)
                                                values (1,1,1,1)
insert into Test (Test_ID, promotion_ID, M_Test_ID)
                                                values (2,1,1)
---**************************************
---**************************************


----------Career Development Table----------
create table Career_Development (
----------attributes
CD_ID int not null,
Promotion_ID int not null,
Attended_status Varchar(20) not null,
Coach_Name varchar(20) not null,
Held_On date not null,
Performance_Discription Text null,
----------Primary Keys
primary key (CD_ID)
----------Foreign Keys
)


----------data insertion
insert into Career_Development (CD_ID, Promotion_ID, Attended_status, Coach_Name,
                                                        Held_On, Performance_Discription)
                                                        values (1,1,'Yes','Muneeb','3 Jan 2022',
                                                        'Held to Improve the Communication Skills')

---======================================
---======================================
```

----------Service Table----------

```
create table Service (
----------attributes
Service_Id int not null,
Promotion_ID int not null,
Years_served int null,
Department varchar(20)  null
----------Primary Keys
primary key (Service_Id)
----------Foreign Keys
)

----------data insertion
insert into Service (Service_Id, Promotion_ID, Years_served, Department)
                                                    values (1,1,2,'Frontend Developer')
insert into Service (Service_Id, Promotion_ID, Years_served, Department)
                                                    values (2,1,1,'BlockChain Developer')
---========================================
---========================================
```

----------Education Table----------

```
create table Education (
----------attributes
EDU_lvl_ID int not null,
Promotion_ID int not null,
Education_level varchar(20) not null,
date date  null,
Institute varchar(20) null,
Field Varchar(20) not null,
----------Primary Keys
primary key (EDU_lvl_ID)
----------Foreign Keys
)

----------data insertion
insert into Education (EDU_lvl_ID, Promotion_ID, Education_level, date, Institute, Field)
                                                    values (1,1,'Graduate','3 Jan 2022','Bahria','BSCS')
insert into Education (EDU_lvl_ID, Promotion_ID, Education_level, date, Institute, Field)
```

values (2,1,'Masters','3 Jan 2026','MIT','MSIT')

----------Promotion Application Table----------

```
create table Promotion_Application (
----------attributes
PA_ID int not null,
Promotion_ID int not null,
Field varchar(20) not null,
discription Text null,
----------Primary Keys
primary key (PA_ID)
----------Foreign Keys
)
```

----------data insertion

```
insert into Promotion_Application (PA_ID, Promotion_ID, Field, discription)
                                    values (1,1,'BlockChain','I THINK I AM ELIGIBLE FOR THIS ROLE')
```

----------Trial Table----------

```
create table Trial (
----------attributes
Trial_ID int not null,
Promotion_Table int not null,
Trial_Name varchar(20) not null,
Trial_Field varchar(20) null,
Accuracy int null,
----------Primary Keys
primary key (Trial_ID)
----------Foreign Keys
)
```

----------data insertion

insert into Trial (Trial_ID, Promotion_Table, Trial_Name, Trial_Field, Accuracy)

values (1,1,'Website Bug Analysis','Debugging',80)

---==========

---==========

----------Appraisal Table----------

create table Appraisal (

----------attributes

Appraisal_ID int not null,

Promotion_ID int not null,

Frrom Date not null,

Tto Date not null,

Discription Text null,

Appraisal_status varchar(20) null,

Reviewed_Program varchar(20) not null,

Final_rating int,

----------Primary Keys

primary key (Appraisal_ID)

----------Foreign Keys

)

----------data insertion

insert into Appraisal (Appraisal_ID, Promotion_ID, Frrom, Tto, Discription, Appraisal_status,

Reviewed_Program, Final_rating)

values (1,1,'3 Aug 2022','3 Sep 2022','Assesment of Debugging Skills',

'Under Progress','Web Development',5)

---==========

---==========

----------Certificate Table----------

create table Certificate (

----------attributes

Certificate_ID int not null,

Promotion_ID int not null,

Certificate_Name varchar(20) null,

date date null,

```
Field varchar(20) not null,
----------Primary Keys
primary key (Certificate_ID)
----------Foreign Keys
)

----------data insertion
insert into Certificate (Certificate_ID, Promotion_ID, Certificate_Name, date, Field)
                                                values (1,1,'CEH', '4 June 2022', 'Cyber Security')
insert into Certificate (Certificate_ID, Promotion_ID, Certificate_Name, date, Field)
                                                values (2,1,'NSE-3', '3 Feb 2022', 'Cyber Security')
---========================================
---========================================

----------Award Table----------
create table Award (
----------attributes
Award_ID int not null,
Promotion_ID int not null,
Award_Name varchar(20) not null,
date date null,
due_to Text null,
----------Primary Keys
primary key (Award_ID)
----------Foreign Keys
)

----------data insertion
insert into Award (Award_ID, Promotion_ID, Award_Name, date, due_to)
                                                values (1,1,'Best Coder', '3 April 2022','Making best Applications')
insert into Award (Award_ID, Promotion_ID, Award_Name, date, due_to)
                                                values (2,1,'Oscar', '9 April 2022','Making best Youtue Video')
---========================================
---========================================
```

----------Manager Review Table----------

```
create table Review_Form_Manager (
----------attributes
Manager_Review_ID int not null,
Review_ID int not null,
Attitude_towards_Work Text null,
Attitude_with_Colleague Text null,
Work_Accomplishment Text null,
----------Primary Keys
primary key (Manager_Review_ID)
----------Foreign Keys
)

----------data insertion
insert into Review_Form_Manager (Manager_Review_ID, Review_ID, Attitude_towards_Work,
                                                    Attitude_with_Colleague, Work_Accomplishment)
                                                Values(1, 1,'Good', 'Helping', 'On Time')
---****************************************
---****************************************
```

----------Colleague Review Table----------

```
create table Review_Form_Colleague (
----------attributes
Colleague_Review_ID int not null,
Review_ID int not null,
Attitude_towards_Work Text null,
Attitude_with_Colleague Text null,
Work_Accomplishment Text null,
----------Primary Keys
primary key (Colleague_Review_ID)
----------Foreign Keys
)

----------data insertion
insert into Review_Form_Colleague (Colleague_Review_ID, Review_ID, Attitude_towards_Work,
                                                    Attitude_with_Colleague, Work_Accomplishment)
                                                Values(1, 1,'Good', 'Helping', 'On Time')
```

---**********

---**********

----------Client Review Table----------

create table Review_Form_Client (

----------attributes

Client_Review_ID int not null,

Review_ID int not null,

Attitude_towards_Work Text null,

Attitude_with_Colleague Text null,

Work_Accomplishment Text null,

----------Primary Keys

primary key (Client_Review_ID)

----------Foreign Keys

)

----------data insertion

insert into Review_Form_Client (Client_Review_ID, Review_ID, Attitude_towards_Work,

Attitude_with_Colleague,

Work_Accomplishment)

values (1,1,'Good', 'Helping', 'On Time')

---**********

---**********

----------Review Table----------

create table Review (

----------attributes

Review_ID int not null,

Promotion_ID int not null,

----------Primary Keys

primary key (Review_ID),

----------Foreign Keys

Manager_Review_ID int foreign key references Review_Form_Manager(Manager_Review_ID),

Colleague_Review_ID int foreign key references Review_Form_Colleague(Colleague_Review_ID),

Client_Review_ID int foreign key references Review_Form_Client(Client_Review_ID),

)

----------data insertion

```
insert into Review (Review_ID, Promotion_ID, Manager_Review_ID, Colleague_Review_ID,
                                                    Client_Review_ID)
                                                      values (1,1,1,1,1)
---=======================================
---=======================================


----------Bug Table----------
create table Bug (
----------attributes
E_Bug_ID int not null,
Promotion_ID int not null,
Project_Name varchar(20) null,
Status Varchar(20) null,
Discription Text null,
----------Primary Keys
primary key (E_Bug_ID),
----------Foreign Keys
)


----------data insertion
insert into Bug (E_Bug_ID, Promotion_ID, Project_Name, Status, Discription)
                                                      values (1,1,'Web Dev','Critical','Wrong Image Syntax')
insert into Bug (E_Bug_ID, Promotion_ID, Project_Name, Status, Discription)
                                                      values (2,1,'Backend','Not Critical','Logical Mistake')
---=======================================
---=======================================


----------Attendence Table----------
create table Attendence (
----------attributes
Attendence_ID int not null,
Promotion_ID int not null,
Absent_Date date not null,
Leave_reason Text null,
----------Primary Keys
primary key (Attendence_ID),
----------Foreign Keys
```

```
)

----------data insertion
insert into Attendence (Attendence_ID, Promotion_ID, Absent_Date, Leave_reason)
                                                    values (1,1,'25 jan 2022','No Reason')
insert into Attendence (Attendence_ID, Promotion_ID, Absent_Date, Leave_reason)
                                                    values (2,1,'7 sep 2021','Sick Leave')
---========================================
---========================================

----------Temporary Employee Table----------
Create table Temporary_Employee(
Employee_ID int not null,
Employee_Name varchar(20) not null,
primary Key(Employee_ID)
)
insert into Temporary_Employee (Employee_ID, Employee_Name)
                                                    values (1,'Ali Gauhar')
---========================================
---========================================

----------Promotion Table----------
create table Promotion (
----------attributes
Promotion_ID int not null,
----------Primary Keys
primary key (Promotion_ID),
----------Foreign Keys
Employee_ID int foreign key references Temporary_Employee(Employee_ID) not null,
Goals_ID int foreign key references Goal(Goal_ID) not null,
Tracker_ID int foreign key references Performance_Tracker(Tracker_ID) not null,
Competency_ID int foreign key references Competency_Profile(Competency_ID) not null,
Test_ID int foreign key references Test(Test_ID) not null,
CD_ID int foreign key references Career_Development(CD_ID) not null,
Attendence_ID int foreign key references Attendence(Attendence_ID) not null,
E_Bug_ID int foreign key references Bug(E_Bug_ID) not null,
Review_ID int foreign key references Review(Review_ID) not null,
Award_ID int foreign key references Award(Award_ID) not null,
```

Certification_ID int foreign key references Certificate(Certificate_ID) not null,

Appraisal_ID int foreign key references Appraisal(Appraisal_ID) not null,

Service_ID int foreign key references Service(Service_ID) not null,

EDU_lvl_ID int foreign key references Education(EDU_lvl_ID) not null,

Trial_ID int foreign key references Trial(Trial_ID) not null,

PA_ID int foreign key references Promotion_Application(PA_ID) not null

)

----------data insertion

insert into Promotion (Promotion_ID,Employee_ID, Goals_ID, Tracker_ID, Competency_ID, Test_ID,

CD_ID, Attendence_ID, E_Bug_ID, Review_ID, Award_ID, Certification_ID,

Appraisal_ID, Service_ID, EDU_lvl_ID, Trial_ID, PA_ID)

values (1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1)

---==

---==

Sample DDL/DML/Triggers/Stored Proc/Views/Stored Functions

Function:

```
---*******************************Functions and views*****************************----
create function Find_Total_Absents(@Employee_ID int)
returns table
as
return(select count(*) as Total_absents from Attendence, promotion, Temporary_Employee where
Temporary_Employee.Employee_ID=Promotion.Employee_ID and
Promotion.Promotion_ID=Attendence.Promotion_ID
and Temporary_Employee.Employee_ID=1)

select * from Find_Total_Absents(1)

---*******************************Functions and views*****************************----

create function Find_Absents_Of_Employee(@Employee_ID int)
returns table
as
return(select Temporary_Employee.Employee_Name, Absent_Date from Attendence, promotion,
Temporary_Employee where
Temporary_Employee.Employee_ID=Promotion.Employee_ID and
Promotion.Promotion_ID=Attendence.Promotion_ID
and Temporary_Employee.Employee_ID=@Employee_ID)

select * from Find_Absents_Of_Employee(1)

---*******************************Functions and views*****************************----

Create Function Work_Inaccuracy(@Employee_ID int)
returns table
as
return(select Temporary_Employee.Employee_Name as EmployeeName, Bug.Project_Name as in_the_project,
```

```
Bug.Status as Status,Bug.Discription as Discription from promotion, Temporary_Employee ,Bug
where Bug.promotion_ID=Promotion.Promotion_ID and Temporary_Employee.Employee_ID=Promotion.Employee_ID
and Temporary_Employee.Employee_ID=@Employee_ID)

select * from Work_Inaccuracy(1)
---*******************************Functions and views*****************************----

Create Function Service_Years(@Employee_ID int)
returns table
as
return(select Temporary_Employee.Employee_Name as EmployeeName, service.Years_served as years_served,
service.Department from promotion, Temporary_Employee ,Service
where service.promotion_ID=Promotion.Promotion_ID and
Temporary_Employee.Employee_ID=Promotion.Employee_ID
and Temporary_Employee.Employee_ID=@Employee_ID)

select * from Service_Years(1)

---*******************************Functions and views*****************************----

Create Function Performance_Tracking(@Employee_ID int)
returns table
as
return(select Temporary_Employee.Employee_Name as EmployeeName, Performance_Tracker.Tracker_Name as
Tracker,
Performance_Tracker.Status as status, Performance_Tracker.Results as results,
Performance_Tracker.Added_Date as date_Added,
Performance_Tracker.Modified_Date as date_Modified from promotion, Temporary_Employee
,Performance_Tracker
where Performance_Tracker.promotion_ID=Promotion.Promotion_ID and
Temporary_Employee.Employee_ID=Promotion.Employee_ID
and Temporary_Employee.Employee_ID=@Employee_ID)

select * from Performance_Tracking(1)

---*******************************Functions and views*****************************----


Create Function Skills_to_be_Considered(@area_of_competence varchar(20))
returns table
as
return(select Temporary_Employee.Employee_Name as EmployeeName, Competency_Profile.area_of_competence,
Competency_Profile.assesment_discription
from promotion, Temporary_Employee ,Competency_Profile
where Competency_Profile.promotion_ID=Promotion.Promotion_ID and
Temporary_Employee.Employee_ID=Promotion.Employee_ID
and Competency_Profile.area_of_competence=@area_of_competence)
```

Procedures

```
---*******************************Procedures*****************************----

create Procedure Attitude_Towards_Work
@Employee_ID int
as begin
select Temporary_Employee.Employee_Name as Employee_Name,
Review_Form_Manager.Attitude_towards_Work as Manager_Review,
Review_Form_Client.Attitude_towards_Work as Client_Review,
Review_Form_Colleague.Attitude_towards_Work as Colleague_Review
from Review_Form_Manager, Review_Form_Client,
Review_Form_Colleague, promotion, Temporary_Employee ,review
where Review.Review_ID=Review_Form_Manager.Review_ID and
Review_Form_Client.Review_ID=Review.Review_ID and
Review_Form_colleague.Review_ID=Review.Review_ID and
Review.promotion_ID=Promotion.Promotion_ID
and Temporary_Employee.Employee_ID=@Employee_ID
end

Exec Attitude_Towards_Work 1

---*******************************Procedures*****************************----
create Procedure Attitude_With_Colleague
```

```
@Employee_ID int
as begin
select Temporary_Employee.Employee_Name as Employee_Name,
Review_Form_Manager.Attitude_With_Colleague as Manager_Review,
Review_Form_Client.Attitude_With_Colleague as Client_Review,
Review_Form_Colleague.Attitude_With_Colleague as Colleague_Review
from Review_Form_Manager, Review_Form_Client,
Review_Form_Colleague, promotion, Temporary_Employee ,review
where Review.Review_ID=Review_Form_Manager.Review_ID and
Review_Form_Client.Review_ID=Review.Review_ID and
Review_Form_colleague.Review_ID=Review.Review_ID and
Review.promotion_ID=Promotion.Promotion_ID
and Temporary_Employee.Employee_ID=@Employee_ID
end
```

```
Exec Attitude_With_Colleague 1
```

```
---*******************************Procedures*****************************----
```

```
create Procedure Work_Accomplishment
@Employee_ID int
as begin
select Temporary_Employee.Employee_Name as Employee_Name,
Review_Form_Manager.Work_Accomplishment as Manager_Review,
Review_Form_Client.Work_Accomplishment as Client_Review,
Review_Form_Colleague.Work_Accomplishment as Colleague_Review
from Review_Form_Manager, Review_Form_Client,
Review_Form_Colleague, promotion, Temporary_Employee ,review
where Review.Review_ID=Review_Form_Manager.Review_ID and
Review_Form_Client.Review_ID=Review.Review_ID and
Review_Form_colleague.Review_ID=Review.Review_ID and
Review.promotion_ID=Promotion.Promotion_ID
and Temporary_Employee.Employee_ID=@Employee_ID
end

Exec Work_Accomplishment 1
```

Updated Constraints

```
alter table Goal_List ADD CONSTRAINT Upper_Goal_Name CHECK (Goal_name = upper(Goal_name))
alter table Performance_Tracker ADD CONSTRAINT Upper_Tracker_Name CHECK (Tracker_Name =
upper(Tracker_Name))
alter table Competency_Profile ADD CONSTRAINT Upper_area_of_competence CHECK (area_of_competence =
upper(area_of_competence))
alter table Career_Development ADD CONSTRAINT Upper_Coach_Name CHECK (Coach_Name = upper(Coach_Name))
alter table Education ADD CONSTRAINT Upper_Education_level CHECK (Education_level =
upper(Education_level))
alter table Service ADD CONSTRAINT Upper_years_Served CHECK (years_Served = upper(years_Served))
alter table Promotion_Application  ADD CONSTRAINT Upper_Field CHECK (Field = upper(Field))
alter table Trial ADD CONSTRAINT Upper_Trial_Name CHECK (Trial_Name = upper(Trial_Name))
alter table Appraisal ADD CONSTRAINT Upper_Reviewed_Program CHECK (Reviewed_Program =
upper(Reviewed_Program))
alter table Certificate ADD CONSTRAINT Upper_Certificate_Name CHECK (Certificate_Name =
upper(Certificate_Name))
alter table Award ADD CONSTRAINT Upper_Award_Name CHECK (Award_Name = upper(Award_Name))
alter table Bug  ADD CONSTRAINT Upper_Status CHECK (Status = upper(Status))
   alter table Attendence  ADD CONSTRAINT Upper_Absent_date CHECK (Absent_date = upper(Absent_date))
```

Triggers

```
---*******************************Triggers*****************************----
```

```
create trigger Trigger_Promotion_Insert
on Promotion
for insert
```

```
as
begin
        declare @ID int
        select @ID=Promotion_ID from inserted
        Print ('New Reord with Promotion_id ='+
        cast(@ID as nvarchar(5))+
        'is added at '+ cast(GETDATE() as nvarchar(20))
        )
End
```

```
            ---*******************************Triggers*****************************----
```

```
create trigger Trigger_PerformanceTracker_Insert
on Performance_Tracker
for insert
as
begin
        declare @ID int
        select @ID=Tracker_ID from inserted
        Print ('New Tracker with Tracker_ID ='+
        cast(@ID as nvarchar(5))+
        'is added at '+ cast(GETDATE() as nvarchar(20))
        )
End
```

```
            ---*******************************Triggers*****************************----
```

```
create trigger Trigger_Certificate_Insert
on Certificate
for insert
as
begin
        declare @ID int
        select @ID=Certificate_ID from inserted
        Print ('New Certificate with Certificate_ID ='+
        cast(@ID as nvarchar(5))+
        'is added at '+ cast(GETDATE() as nvarchar(20))
        )
end
```

```
            ---*******************************Triggers*****************************----
```

```
create trigger Trigger_Award_Insert
on Award
for insert
as
begin
        declare @ID int
        select @ID=Award_ID from inserted
        Print ('New Award with Award_ID ='+
        cast(@ID as nvarchar(5))+
        'is added at '+ cast(GETDATE() as nvarchar(20))
        )
end
```

```
            ---*******************************Triggers*****************************----
```

```
create trigger Trigger_Review_Insert
on Review
for insert
as
begin
        declare @ID int
        select @ID=Review_ID from inserted
        Print ('New Review with Review_ID ='+
        cast(@ID as nvarchar(5))+
        'is added at '+ cast(GETDATE() as nvarchar(20))
        )
```

```
end


create trigger Trigger_Bug_Insert
on Bug
for insert
as
begin
        declare @ID int
        select @ID=E_Bug_ID from inserted
        Print ('New Review with Bug_ID ='+
        cast(@ID as nvarchar(5))+
        'is added at '+ cast(GETDATE() as nvarchar(20))
        )
end



create trigger Trigger_Attendence_Insert
on Attendence
for insert
as
begin
        declare @ID int
        select @ID=Attendence_ID from inserted
        Print ('New Attendence with Attendence_ID ='+
        cast(@ID as nvarchar(5))+
        'is added at '+ cast(GETDATE() as nvarchar(20))
        )
End

create trigger Trigger_Mandatory_Test_Insert
on Mandatory_Test
for insert
as
begin
        declare @ID int
        select @ID=M_Test_ID from inserted
        Print ('New Mandatory Test with M Test ID ='+
        cast(@ID as nvarchar(5))+
        'is added at '+ cast(GETDATE() as nvarchar(20))
        )
End
```

Views

```
---*******************************Views*****************************----


create view MileStones_Status as
select Temporary_Employee.Employee_Name as Employee_Name,
Goal_List.Goal_Name as All_MileStone_Of_Employee,
Goal_List.Levels as Total_level_Of_MileStone,
Goal_Progress.levels_Completed as Levels_Completed_By_Employee,
Goal_Progress.status as Status_Of_Employee_MileStone,
Goal_Progress.DueDate as DueDate_Of_Employee_MileStone
from Goal, Promotion, Goal_List, Goal_Progress, Temporary_Employee
where Goal.Goal_ID=Goal_list.Goal_ID and
Goal_List.Goal_Library_ID=Goal_Progress.Goal_Library_ID and
Goal.Goal_ID=Promotion.Goals_ID
and Temporary_Employee.Employee_Name='Ali Gauhar'

                                Select * from MileStones_Status

---*******************************Views*****************************----



create view Assesment_Record as
select Temporary_Employee.Employee_Name as Employee_Name,
```

```
Appraisal.Reviewed_Program as Program_Selected_For_Assesment,
Appraisal.Final_rating as Rating_of_Assesment,
Appraisal.Discription as Discription_of_Assesment
from Appraisal, Promotion, Temporary_Employee
where promotion.Employee_ID=Temporary_Employee.Employee_ID and
Appraisal.Promotion_ID=Promotion.Promotion_ID
and Temporary_Employee.Employee_ID=1

                                    Select * from Assesment_Record

              ---*******************************Views*****************************----


create view Service_Record as
select Temporary_Employee.Employee_Name as Employee_Name,
service.Years_served as Years_Served_in_Department,
service.Department as Department
from service, Promotion, Temporary_Employee
where promotion.Employee_ID=Temporary_Employee.Employee_ID and
service.Promotion_ID=service.Promotion_ID
and Temporary_Employee.Employee_ID=1

                                    Select * from Service_Record

              ---*******************************Views*****************************----


create view mandatory_Questions_Asked_in_test as
select Temporary_Employee.Employee_Name as Employee_Name,
Mandatory_Test.Mandatory_Question as Questions,
Mandatory_Test.Results as Results
from Mandatory_Test, Promotion, Temporary_Employee
where promotion.Employee_ID=Temporary_Employee.Employee_ID and
Mandatory_Test.Promotion_ID=Mandatory_Test.Promotion_ID and
Temporary_Employee.Employee_ID=1

                                    Select * from Service_Record
```


ScreenShots

Tables

	Goal_Progress_ID	Goal_Library_ID	levels_Completed	DueDate	Status
1	1	1	3	2022-12-03	Good
2	2	2	3	2022-12-03	Good

	Goal_Library_ID	Goal_ID	Goal_Name	levels	Goal_Progress_ID
1	1	1	Making a Website	3	NULL
2	2	2	Making a Website	3	NULL

	Tracker_ID	Promotion_ID	Tracker_Name	Status	Results	Added_Date	Modified_Date
1	1	1	User Reviews about Website	Running	Good	2022-01-02	2022-01-15

	Competency_ID	Promotion_ID	area_of_competence	assesment_discription
1	1	1	Data Base	Lacking accuracy in Schema
2	2	1	Block Chain	Good in making Smart Contracts

	NM_Test_ID	Promotion_ID	Non_Mandatory_Question	Results
1	1	1	NULL	NULL

	M_Test_ID	Promotion_ID	Mandatory_Question	Results
1	1	1	What Is The Difference Between ERD and Schema	Correct Answer
2	2	1	What does Phishing Maens	Correct Answer

	Test_ID	promotion_ID	NM_Test_ID	M_Test_ID
1	1	1	1	1
2	2	1	NULL	1

	CD_ID	Promotion_ID	Attended_status	Coach_Name	Held_On	Performance_Discription
1	1	1	Yes	Muneeb	2022-01-03	Held to Improve the Communication Skills

	Service_Id	Promotion_ID	Years_served	Department
1	1	1	2	Frontend Developer
2	2	1	1	BlockChain Developer

	EDU_lvl_ID	Promotion_ID	Education_level	date	Institute	Field
1	1	1	Graduate	2022-01-03	Bahria	BSCS
2	2	1	Masters	2026-01-03	MIT	MSIT

	Appraisal_ID	Promotion_ID	Frrom	Tto	Discription	Appraisal_status	Reviewed_Program	Final_rating
1	1	1	2022-08-03	2022-09-03	Assesment of Debugging Skills	Under Progress	Web Development	5

	Certificate_ID	Promotion_ID	Certificate_Name	date	Field
1	1	1	CEH	2022-06-04	Cyber Security
2	2	1	NSE-3	2022-02-03	Cyber Security

	Award_ID	Promotion_ID	Award_Name	date	due_to
1	1	1	Best Coder	2022-04-03	Making best Applications
2	2	1	Oscar	2022-04-09	Making best Youtue Video

	Manager_Review_ID	Review_ID	Attitude_towards_Work	Attitude_with_Colleague	Work_Accomplishment
1	1	1	Good	Helping	On Time

	Colleague_Review_ID	Review_ID	Attitude_towards_Work	Attitude_with_Colleague	Work_Accomplishment
1	1	1	Good	Helping	On Time

	Client_Review_ID	Review_ID	Attitude_towards_Work	Attitude_with_Colleague	Work_Accomplishment
1	1	1	Good	Helping	On Time

	Review_ID	Promotion_ID	Manager_Review_ID	Colleague_Review_ID	Client_Review_ID
1	1	1	1	1	1

	E_Bug_ID	Promotion_ID	Project_Name	Status	Discription
1	1	1	Web Dev	Critical	Wrong Image Syntax
2	2	1	Backend	Not Critical	Logical Mistake

	Attendence_ID	Promotion_ID	Absent_Date	Leave_reason
1	1	1	2022-01-25	No Reason
2	2	1	2021-09-07	Sick Leave

	Employee_ID	Employee_Name
1	1	Ali Gauhar

	Promotion_ID	Employee_ID	Goals_ID	Tracker_ID	Competency_ID	Test_ID	CD_ID	Attendence_ID	E_Bug_ID	Review_ID	Aw
1	1	1	1	1	1	1	1	1	1	1	1

Award_ID	Certification_ID	Appraisal_ID	Service_ID	EDU_lvl_ID	Trial_ID	PA_ID
1	1	1	1	1	1	1

Functions

	Total_absents
1	2

	Employee_Name	Absent_Date
1	Ali Gauhar	2022-01-25
2	Ali Gauhar	2021-09-07

	EmployeeName	in_the_project	Status	Discription
1	Ali Gauhar	Web Dev	Critical	Wrong Image Syntax
2	Ali Gauhar	Backend	Not Critical	Logical Mistake

	EmployeeName	years_served	Department
1	Ali Gauhar	2	Frontend Developer
2	Ali Gauhar	1	BlockChain Developer

	EmployeeName	Tracker	status	results	date_Added	date_Modified
1	Ali Gauhar	User Reviews about Website	Running	Good	2022-01-02	2022-01-15

	EmployeeName	area_of_competence	assesment_discription
1	Ali Gauhar	Data Base	Lacking accuracy in Schema

	EmployeeName	area_of_competence	assesment_discription
1	Ali Gauhar	Block Chain	Good in making Smart Contracts

Procedures

	Employee_Name	Manager_Review	Client_Review	Colleague_Review
1	Ali Gauhar	Good	Good	Good

	Employee_Name	Manager_Review	Client_Review	Colleague_Review
1	Ali Gauhar	Helping	Helping	Helping

	Employee_Name	Manager_Review	Client_Review	Colleague_Review
1	Ali Gauhar	On Time	On Time	On Time

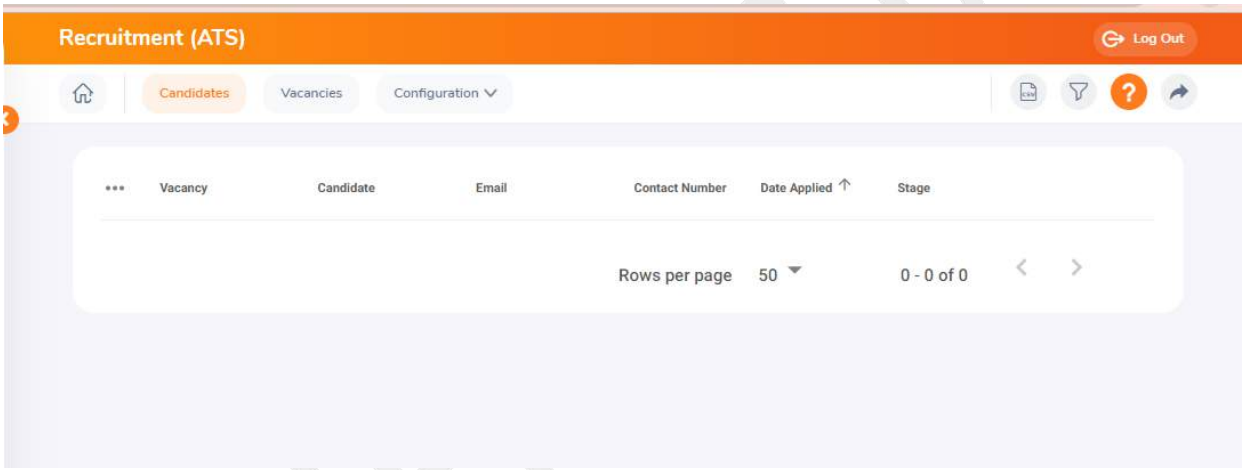
Views

	Employee_Name	All_MileStone_Of_Employee	Total_level_Of_MileStone	Levels_Completed_By_Employee	Status_Of_Employee_MileStone	DueDate_Of_Employee_MileStone
1	Ali Gauhar	Making a Website	3	3	Good	2022-12-03

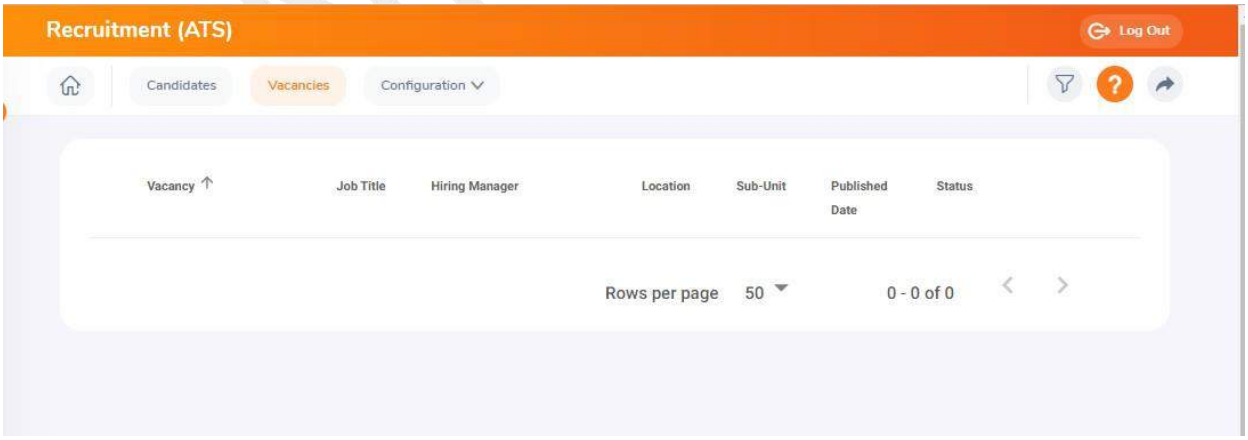
Analysis – Screenshots of the Hiring Panel

Accessing recruitment hrm

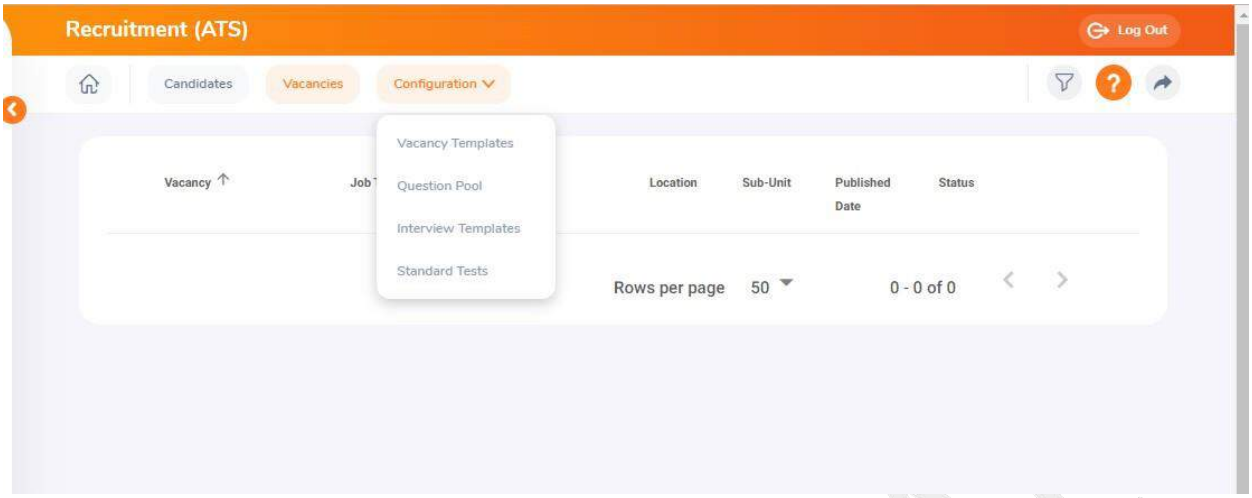
Candidates (vacancy_id,candidate I'd,email,contact-no,date_applied_stage)



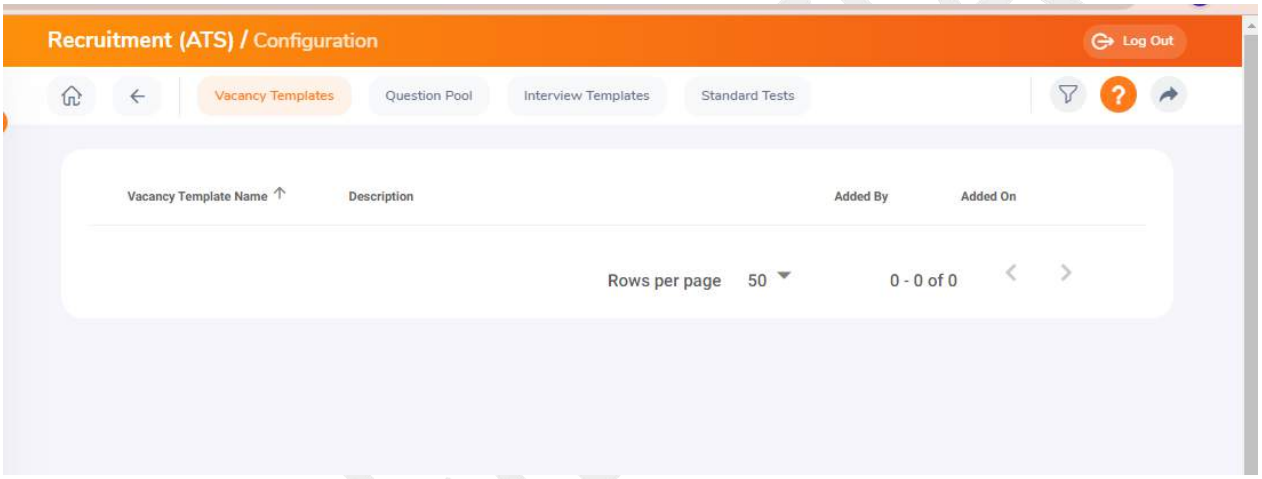
Vacancies(vacancies_id,job_title,Hiring-manager,location,sub-unit,published date,status)



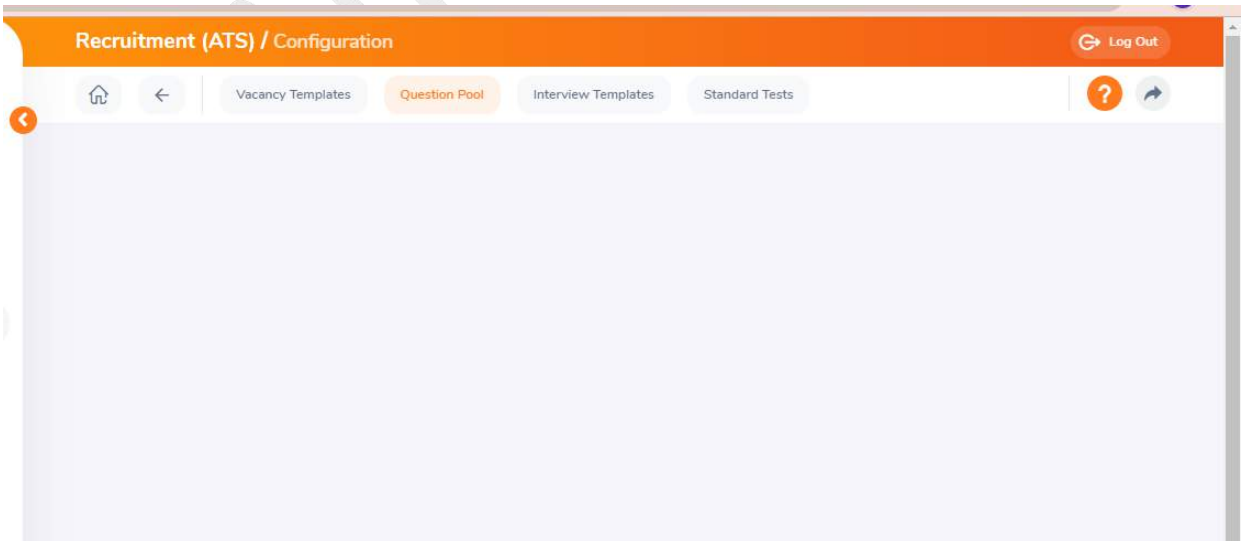
Configuration(vacancy template,question-pool,interview_template,standard_tedtd)



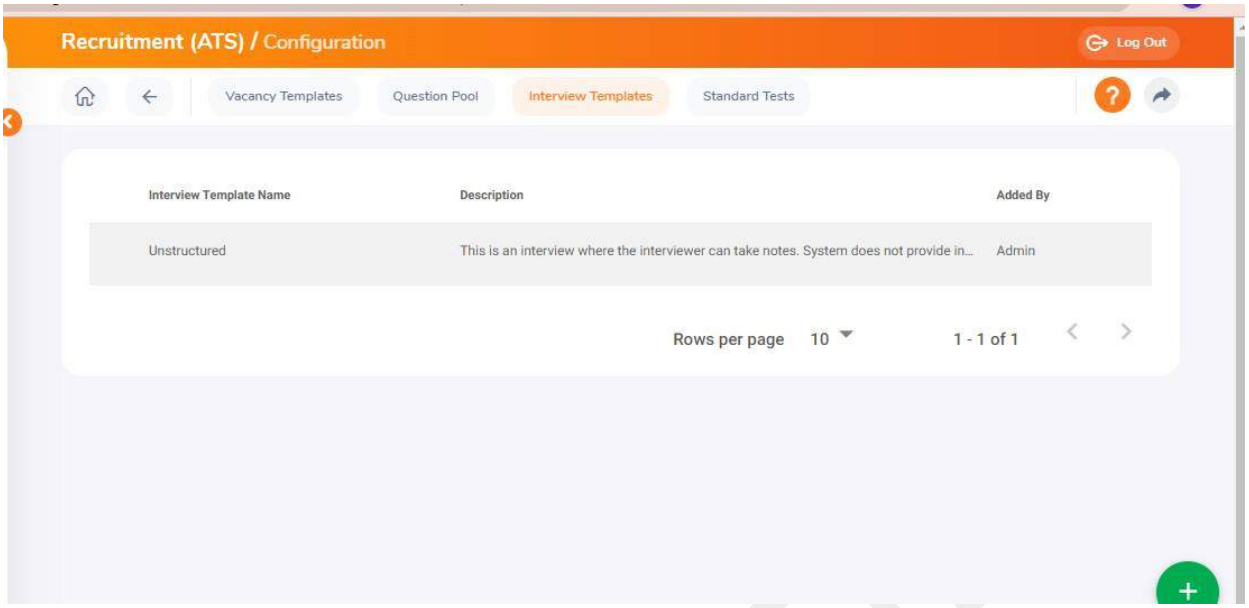
Vacancy template (vacancy_templates_name,description ,added by,added on)



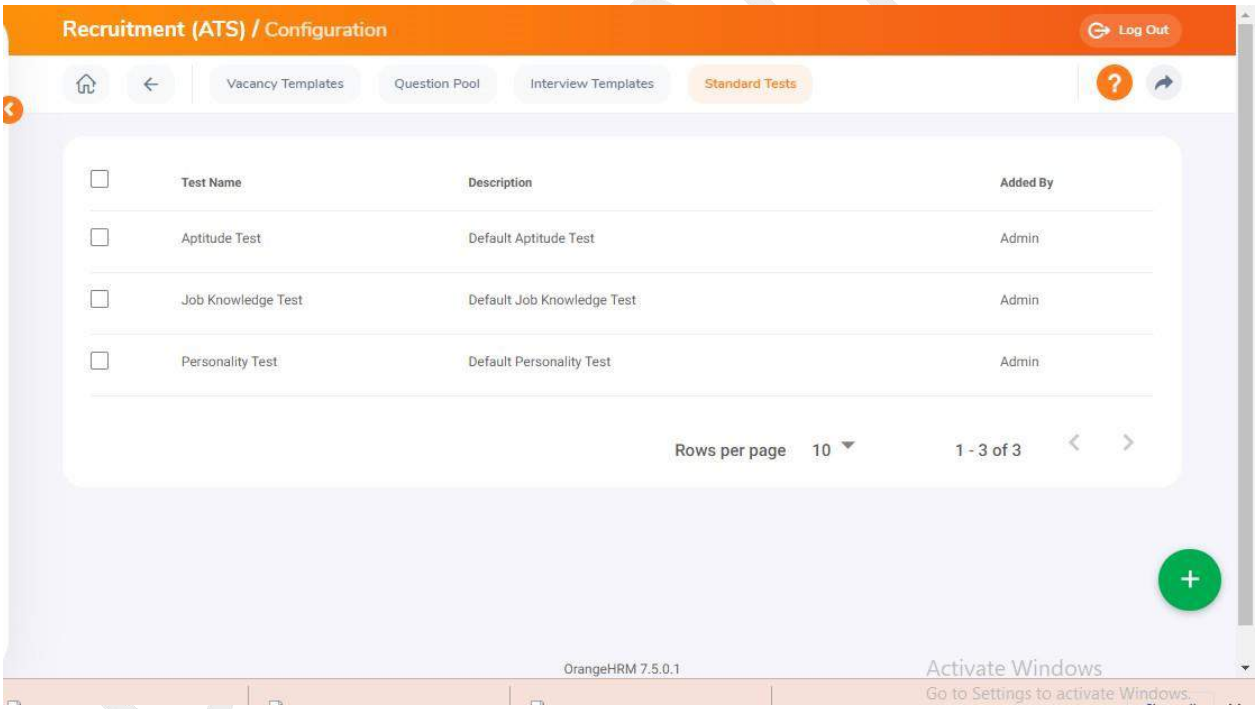
Questionpool(questionpoolid)



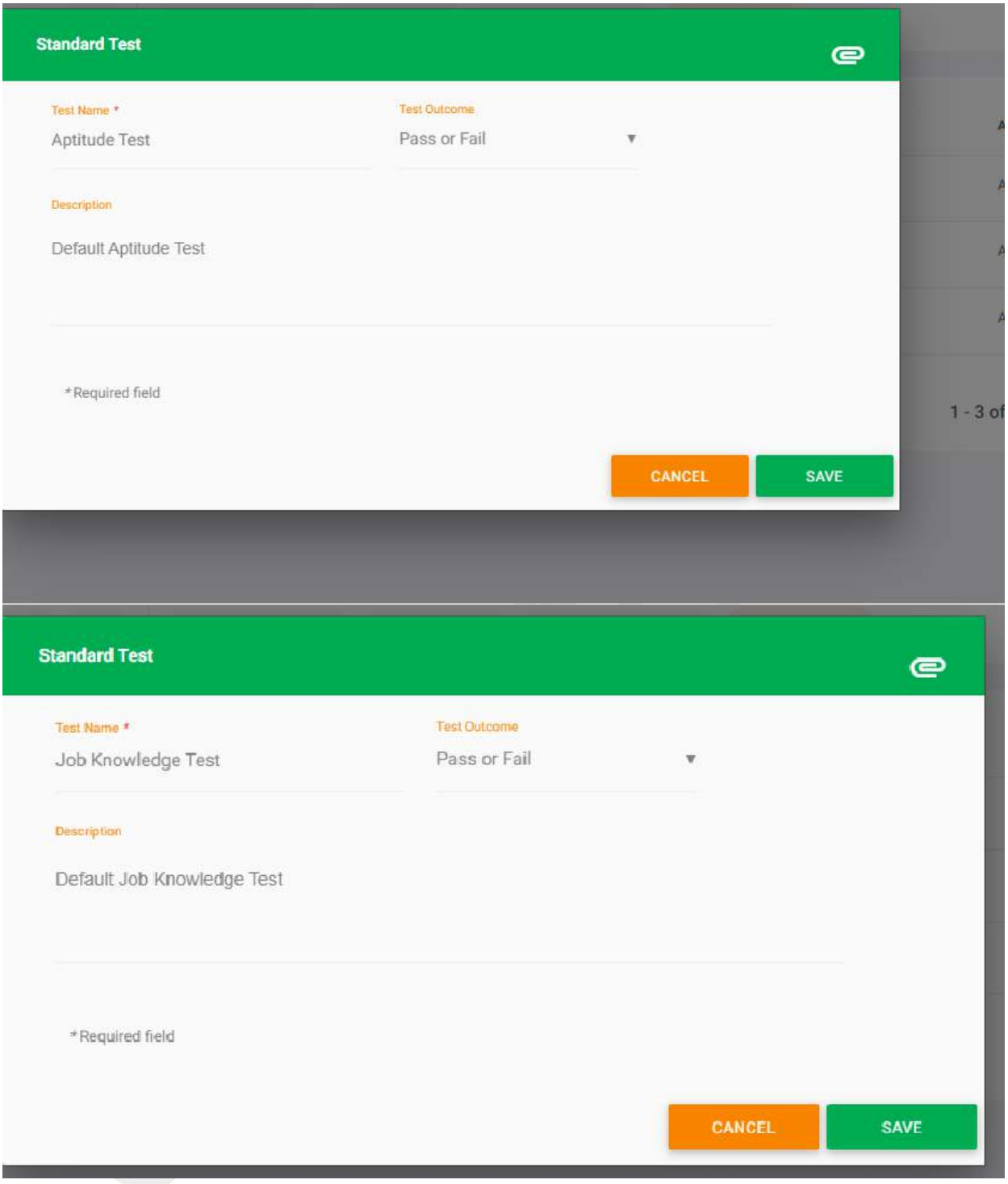
Interview templates(interview-tempalte_name,descriptions)



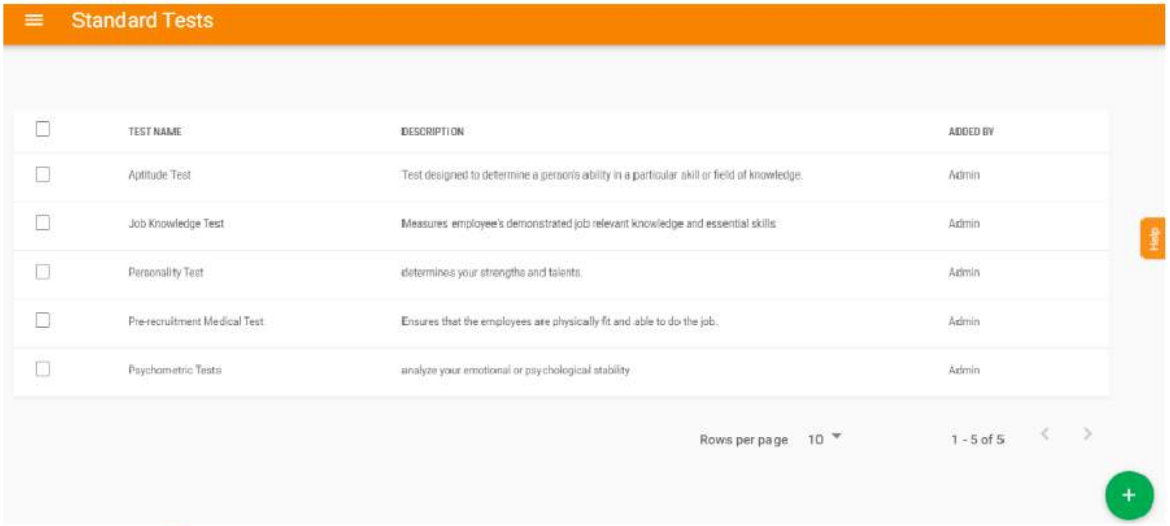
Standard test(aptitude test,job knowledge test,personality test,description of aptitude,description of job knowledge test, description of personality test)



Standard(testname,test outcome ,description,aptitudetest, jobknowledge test,personality test,pre_recruitmenttest,premedicaltest,psychometictest)

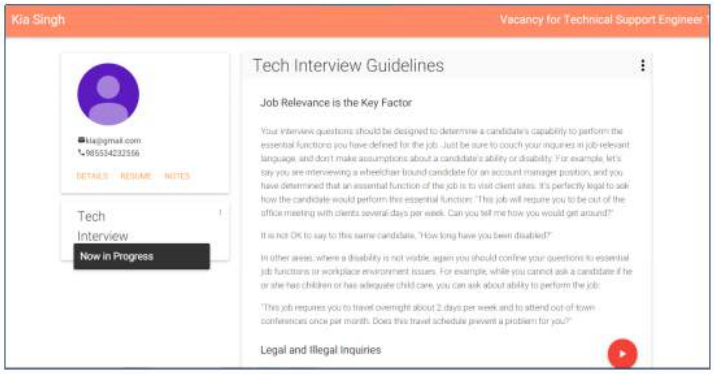

Standard Test
Test Name *
Aptitude Test
Test Outcome
Pass or Fail
Description
Default Aptitude Test
*Required field
CANCEL
SAVE
1 - 3 of
Standard Test
Test Name *
Job Knowledge Test
Test Outcome
Pass or Fail
Description
Default Job Knowledge Test
*Required field
CANCEL
SAVE

Go to **Recruitment -> Configuration -> Standard Tests**. Upon following this path, the following screen will be triggered.

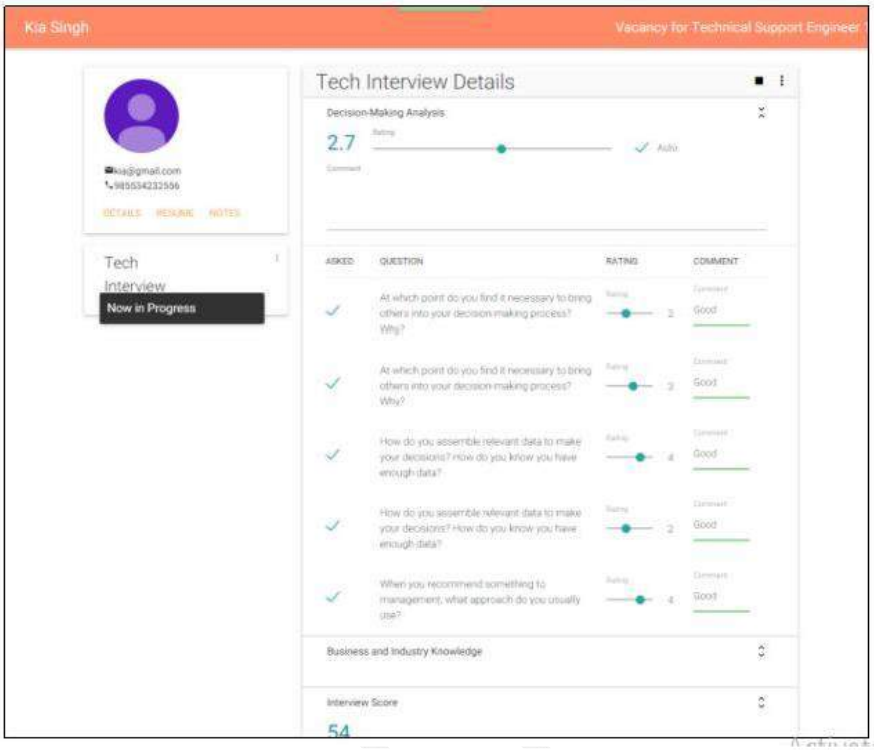


the above path.

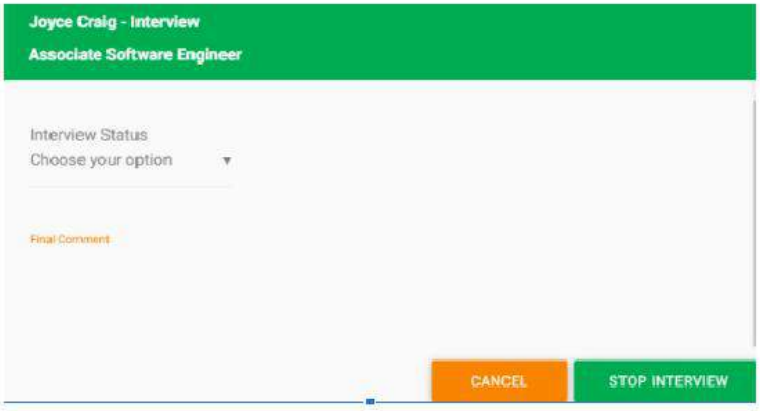
Step 1 - Select the candidate from the list that is under the 'Interview' **stage** and click on the candidate's profile, then click the  icon to start the interview. Then a series of questions appear based on the template defined for the interview.



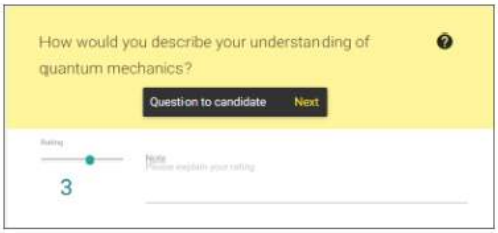
icon to start the interview. Then a series of questions appear based on the template defined for the interview.



Step 5 - Click the icon to stop the interview. Upon stopping the interview the following screen appears.

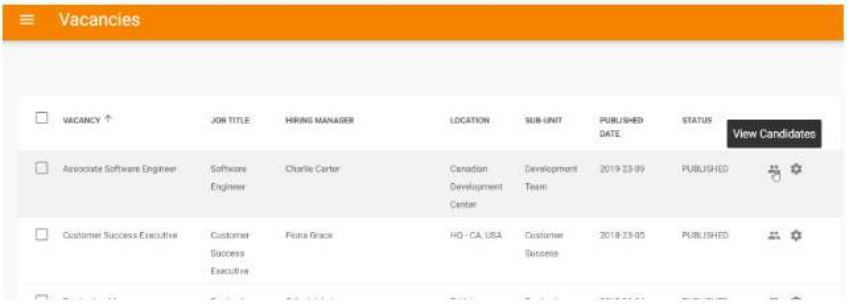


Step 3 - Use the displayed questions to conduct the interview. As the candidate answers each question, rate their answer, add any desired comments, and click **Next**.

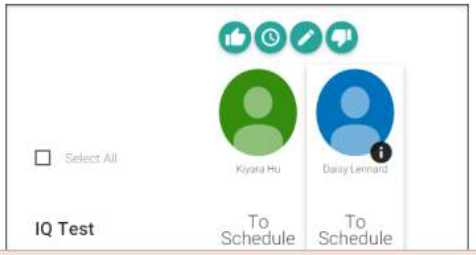


Step 4 - Once all questions within a section have been prompted, the candidate's overall score for that section appears. Change the score if needed, add any desired comments, and click **Proceed** to move to the next section.

Go to **Recruitment -> Vacancies -> View Candidate**

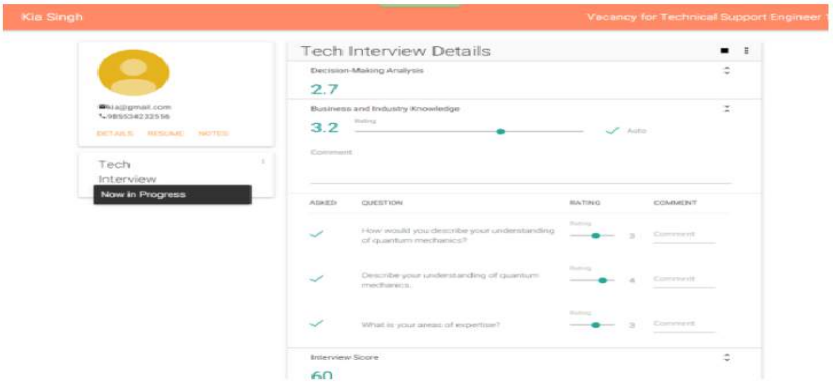


Step 1 - Click the "View Candidate" icon and select the candidate stage, "Application Received", Interview, Shortlisted. etc.



comment.

Step 6- After clicking 'STOP INTERVIEW' the candidate's final score appears on the bottom of the page. The image below illustrates the final score of the candidate.

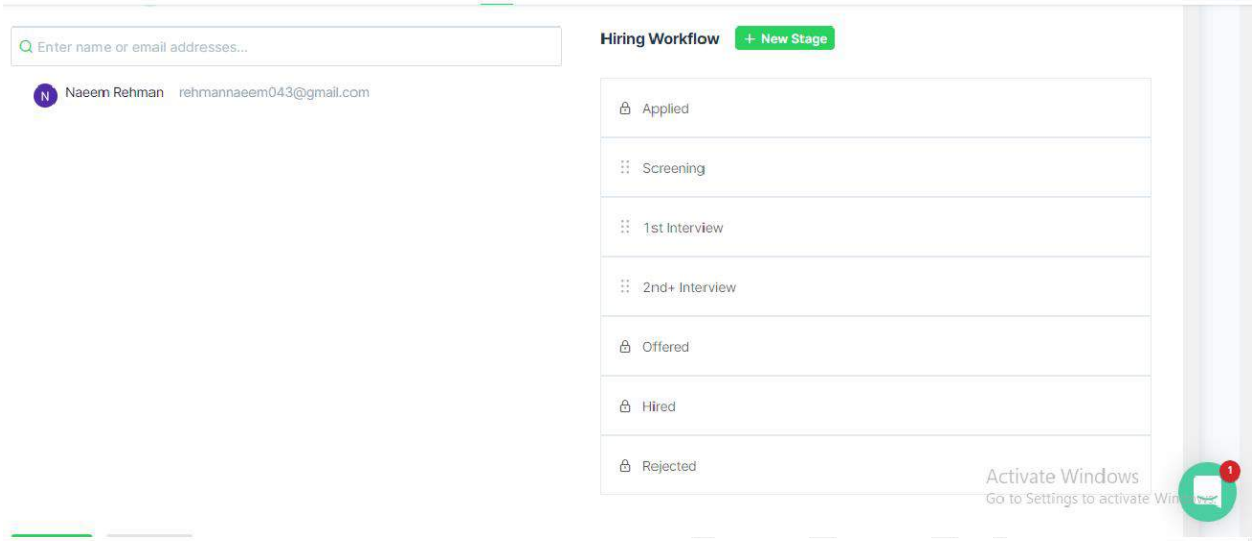


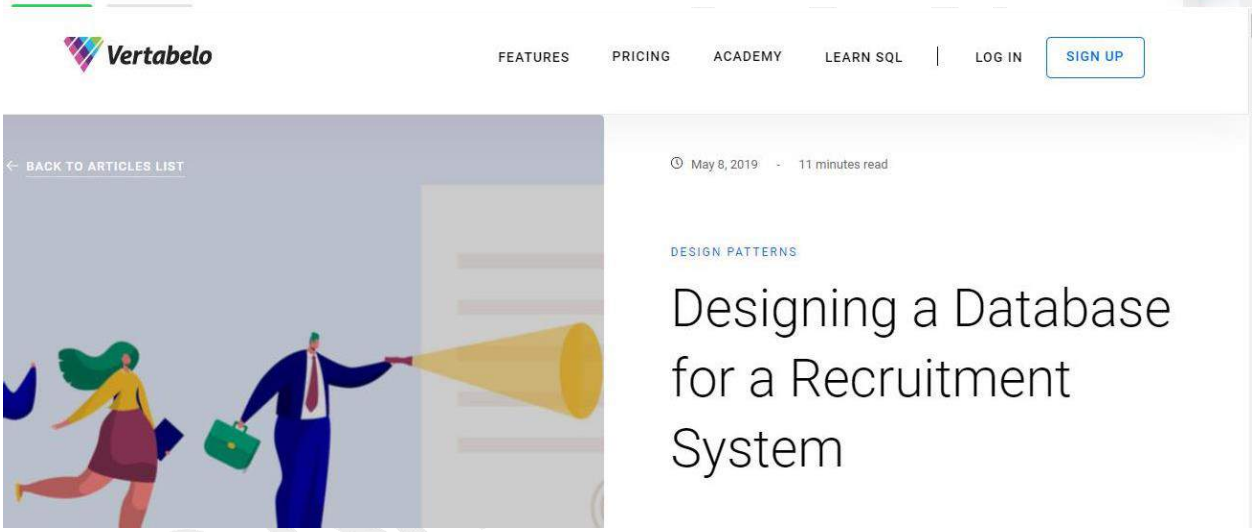
Step 2 - Select the candidate for whom you wish to schedule the test, then click the icon.Then the Test Scheduling Screen appears.

It is possible to select multiple candidates and schedule tests for them.

Recruitment

Grove HR Analysis





employees:

1. Companies contact recruitment agencies to hire on their behalf. In some cases, companies recruit employees directly.
2. The person responsible for recruitment starts the recruiting process. This process can have multiple steps, such as the initial screening, a written test, the first interview, the follow-up interview, the actual hiring decision, etc.
3. Once the recruiters have agreed on a particular process – and this can change depending on the client, the company, or the job in question – the vacancy is advertised on various platforms.
4. Applicants start applying for the job.
5. The applicants are shortlisted and invited to a test or initial interview.
6. The applicants appear for the test/interview.
7. The tests are graded by the recruiters. In some cases, tests are forwarded to specialists for grading.
8. Applicants' interviews are scored by one or more recruiters.
9. Applicants are evaluated on the basis of tests and interviews.
10. The hiring decision is made.

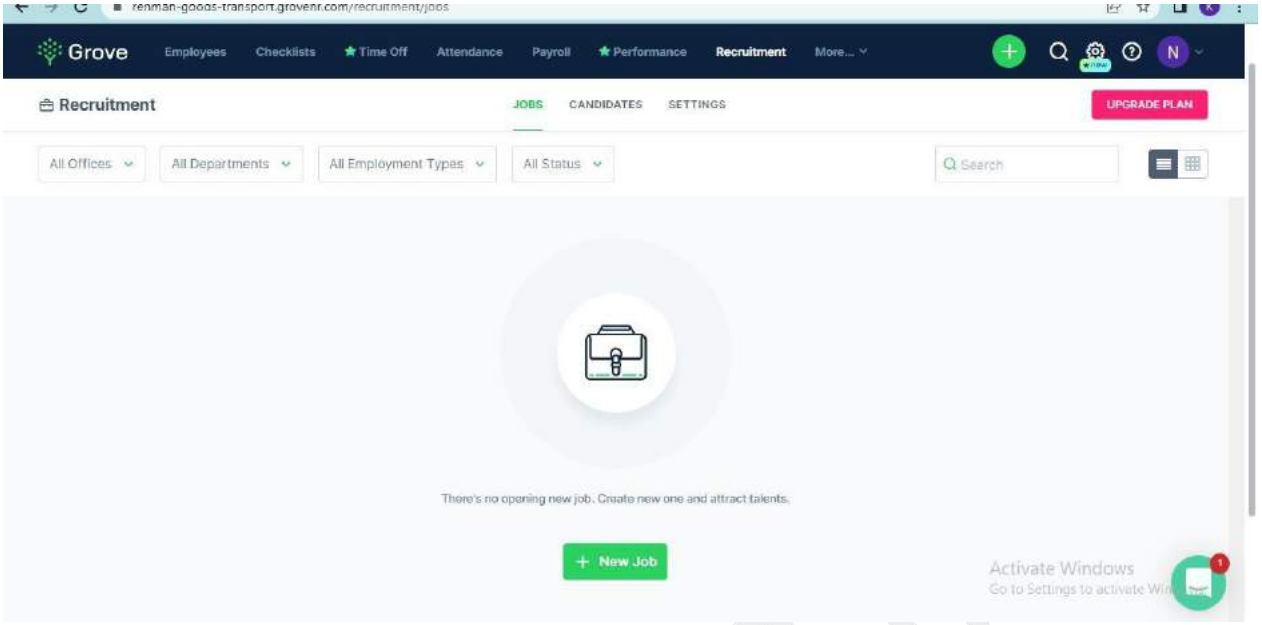
A Recruitment System Database Schema

In view of the aforementioned process, our database schema is divided into five subject areas:

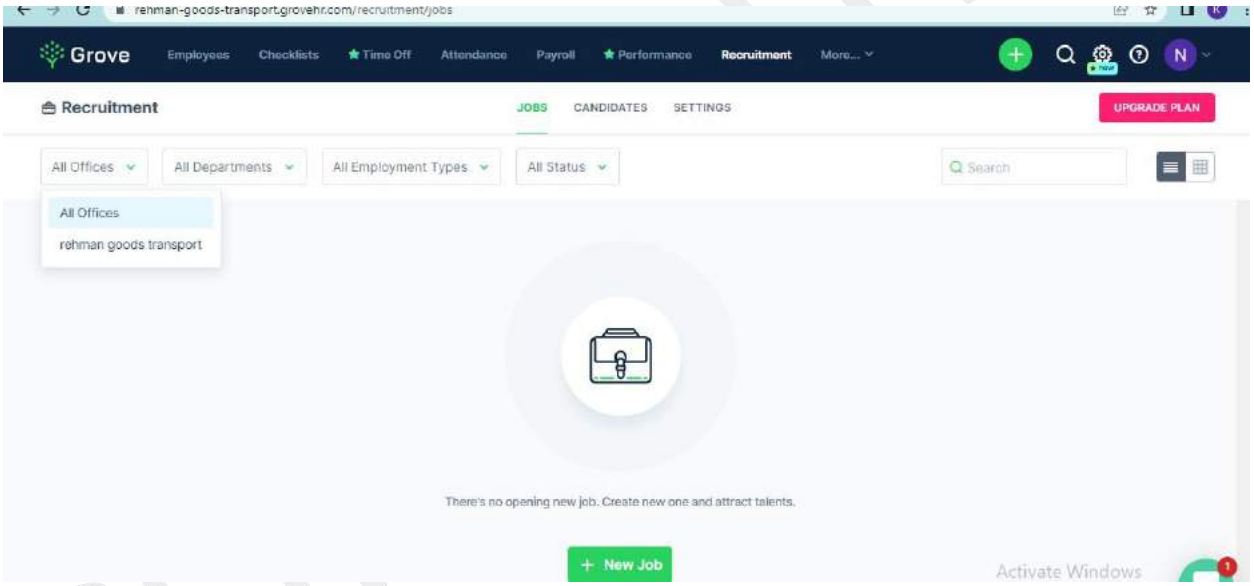
- `Process`
- `Jobs`
- `Application, Applicant, and Documents`
- `Test and Interviews`
- `Recruiters and Application Evaluation`

Analysis

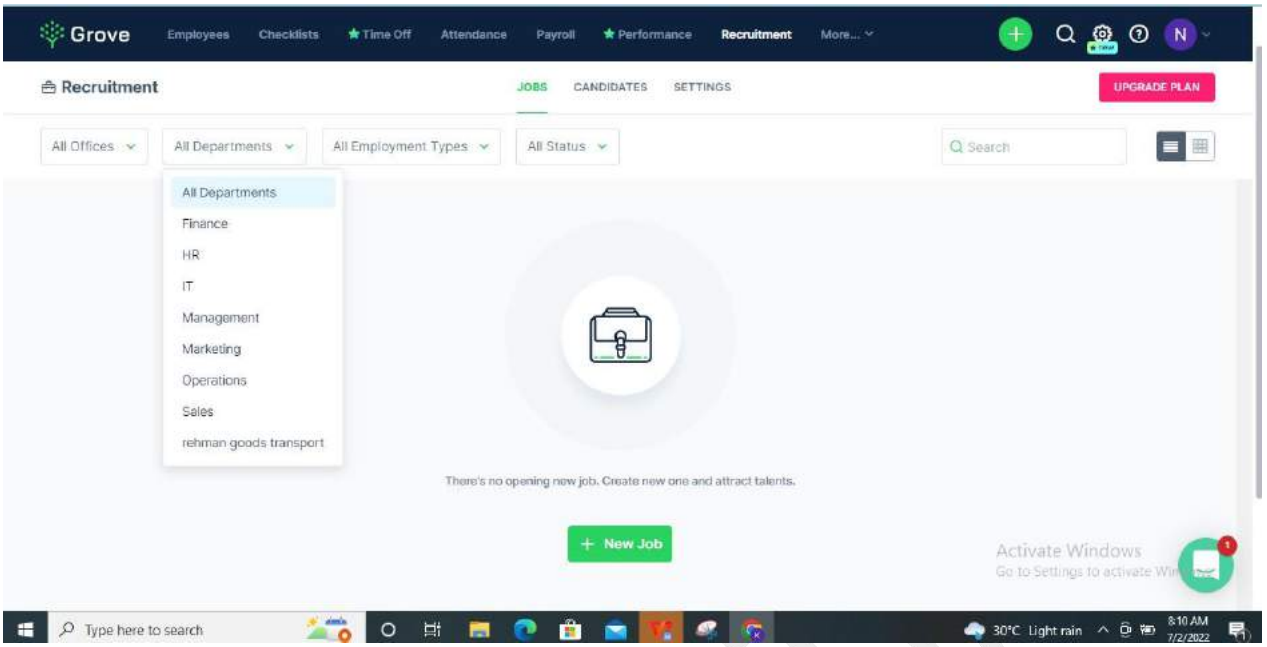
Recruitment(office,dept,employee type,status)



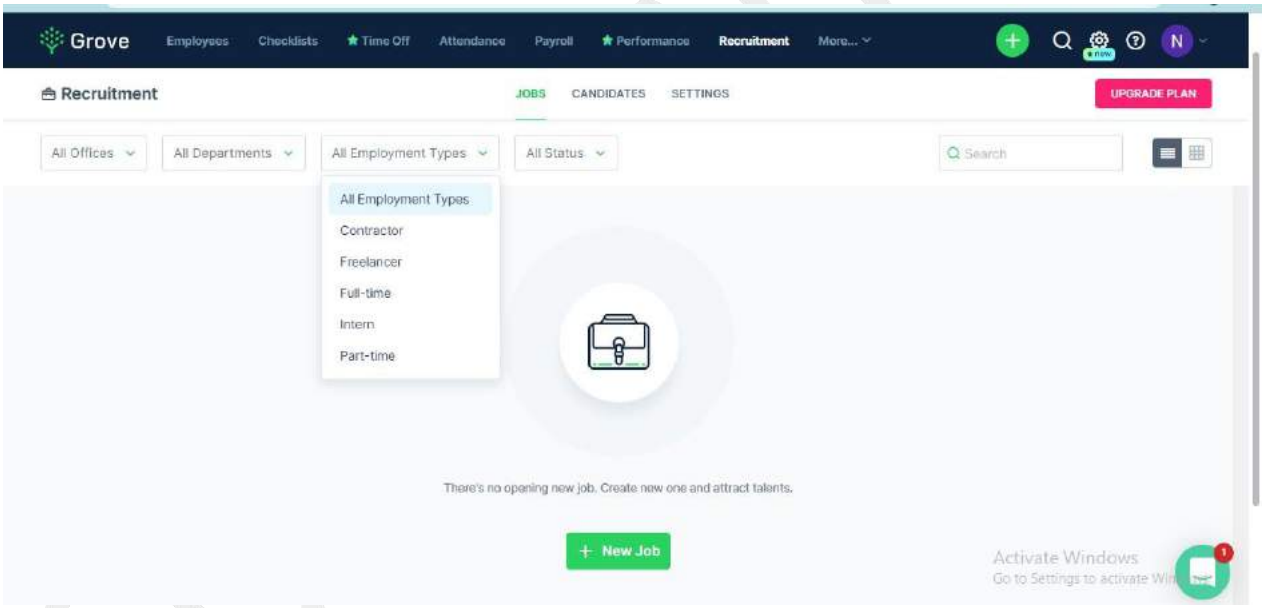
All offices (company name)



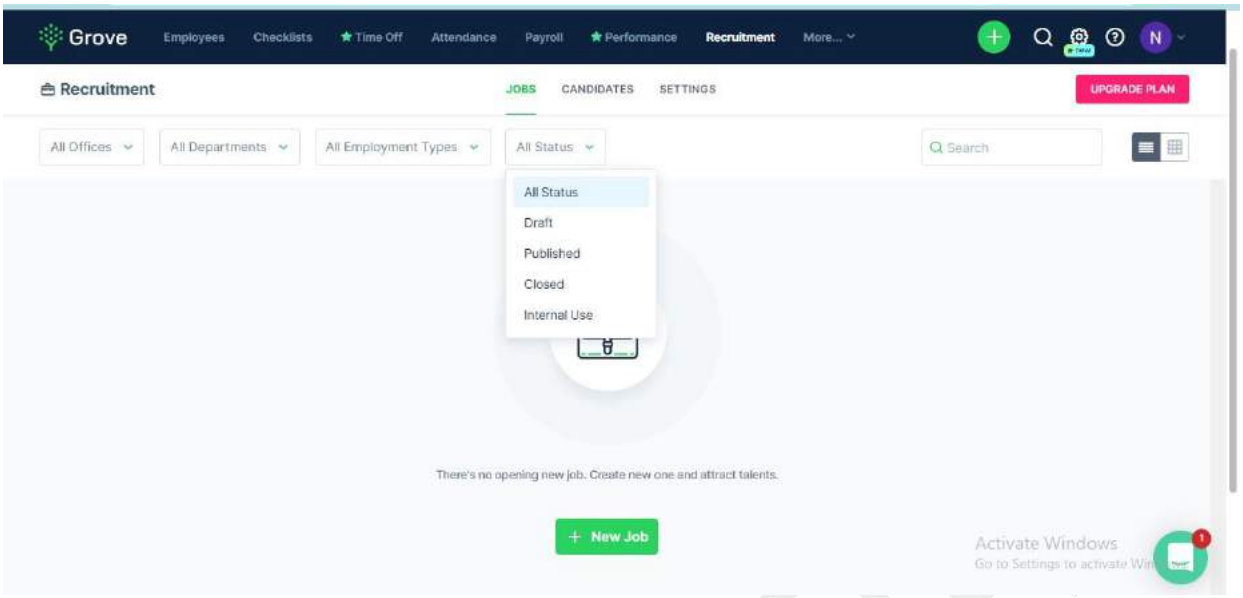
Department (Finance,HR,IT,management, marketing,operations,sales)



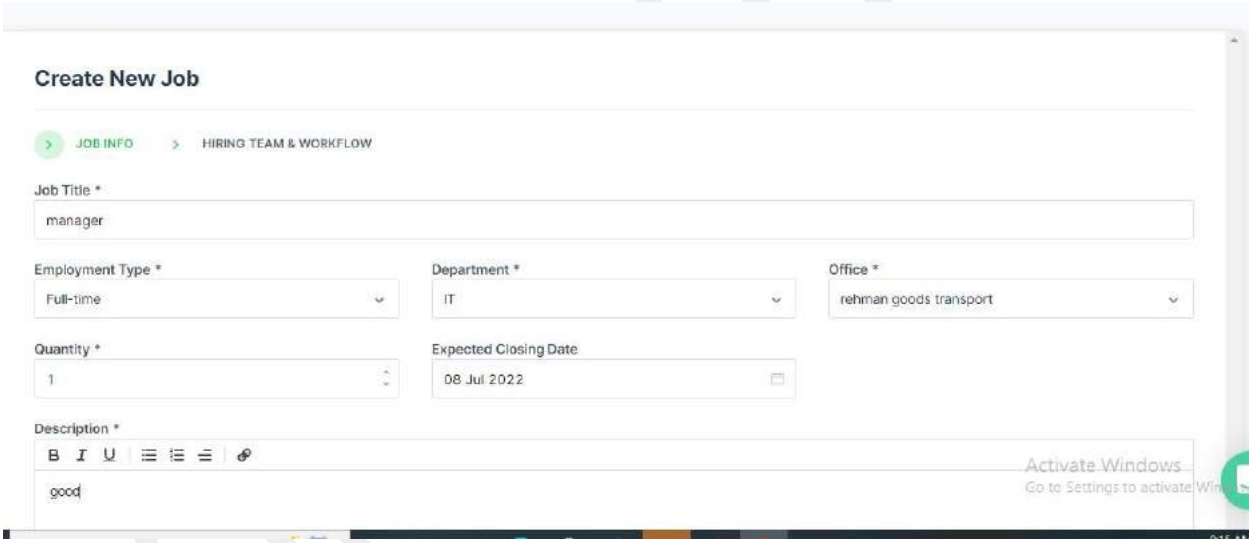
Employee types(contractor,freelancer,Fulltime,intern,part-time)

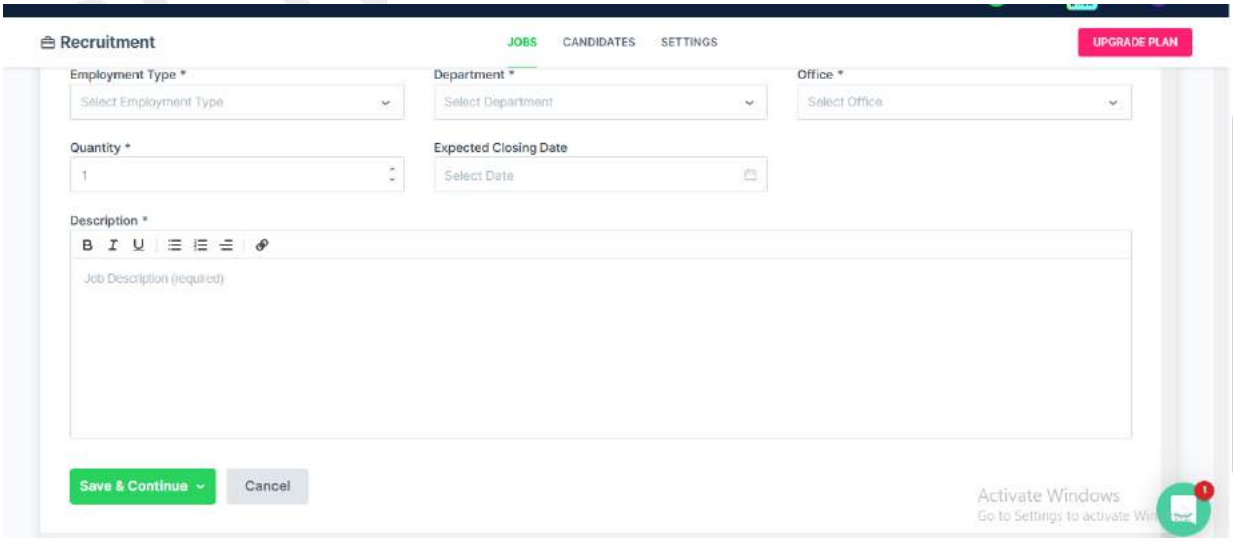


Status(draft,published,closed,internal use)

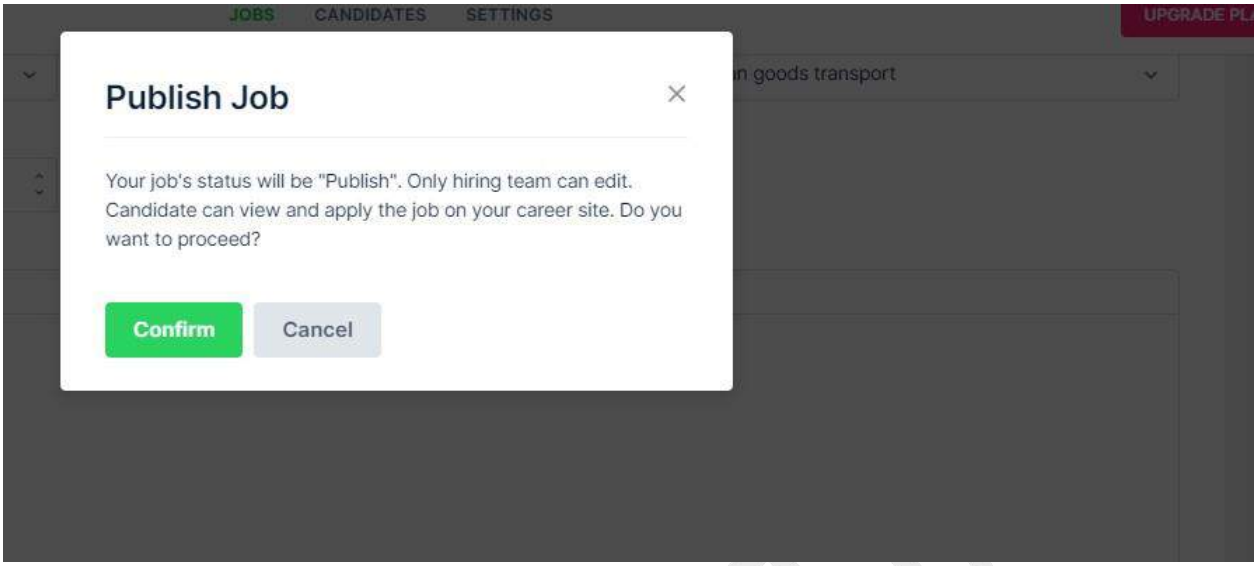


Create new job(job title,employment type,Department, office,Quantity,expected closingdate,description)

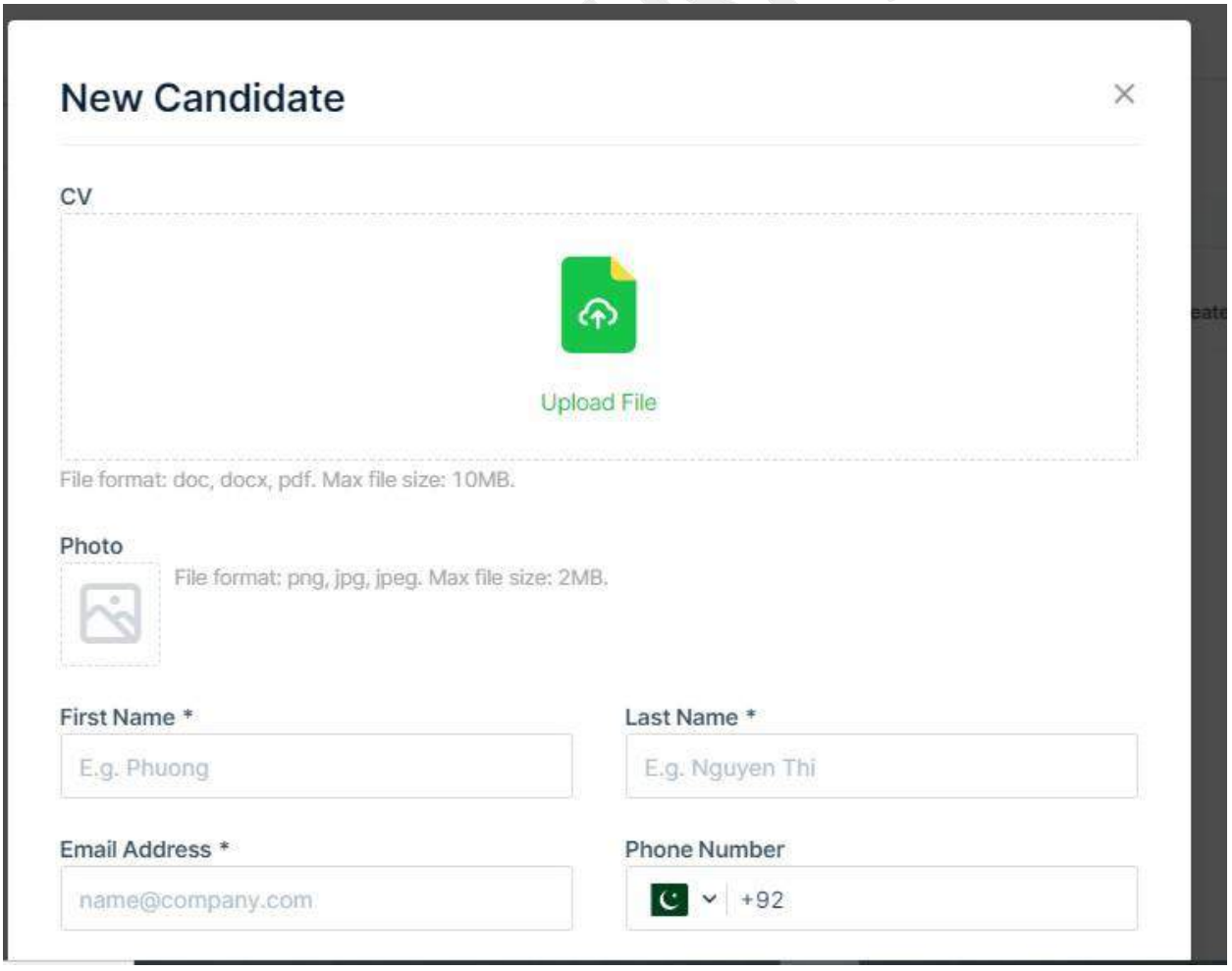


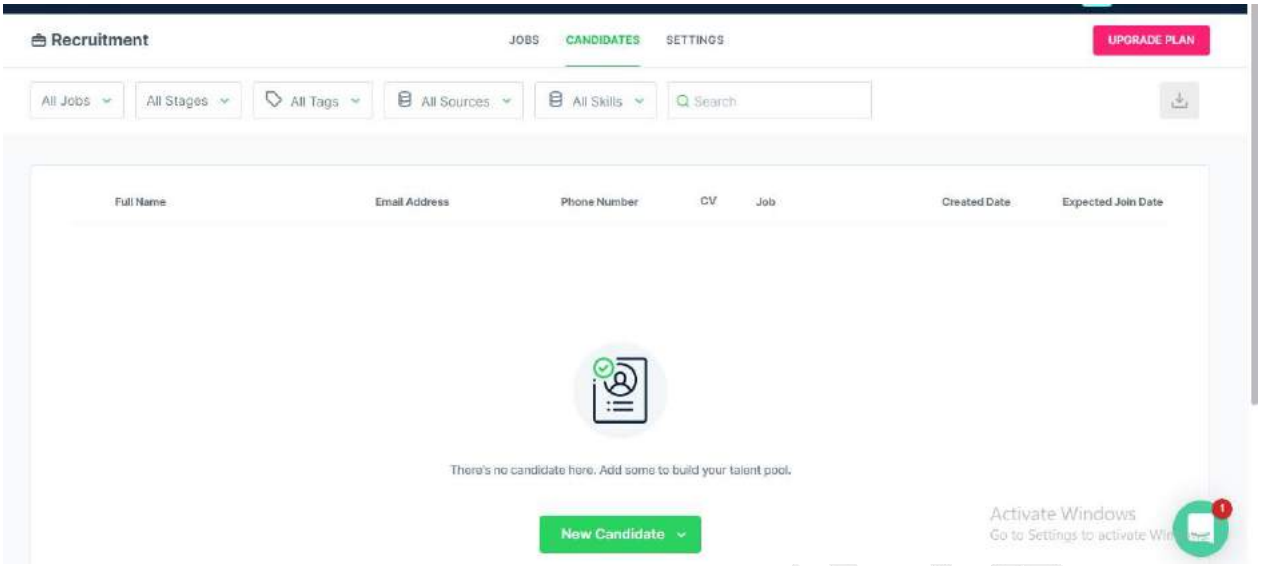


Job status(published,internal,draft)

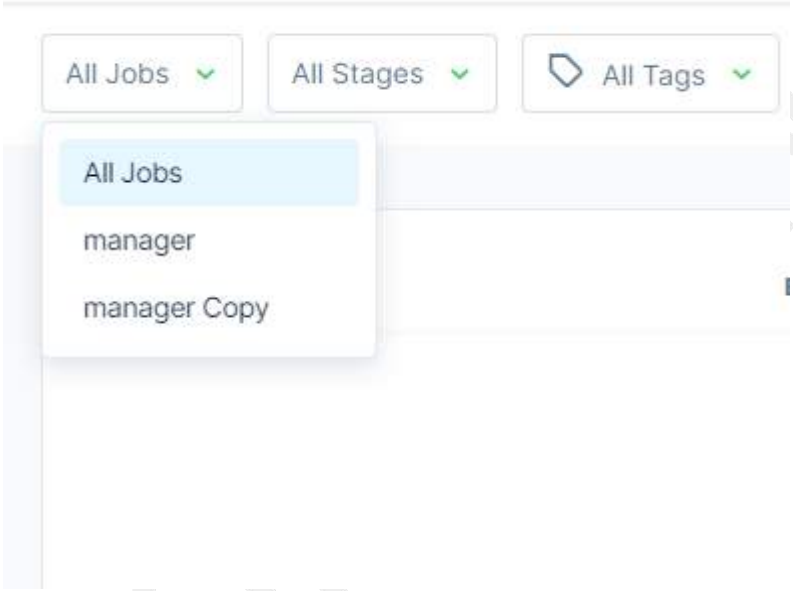


Candidates (fullname,email,phonenumber,cc,job,created date,expected join date)

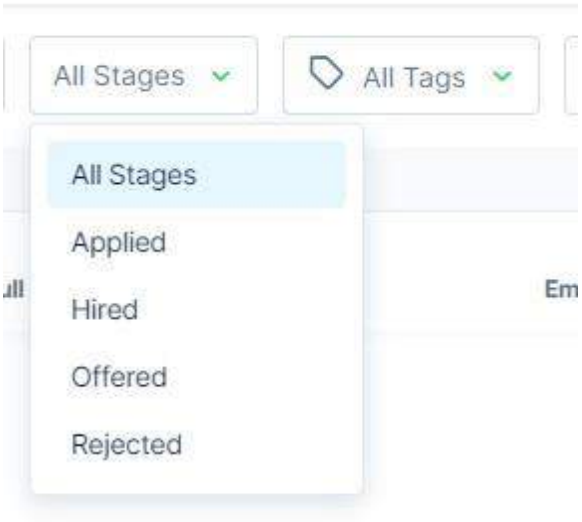




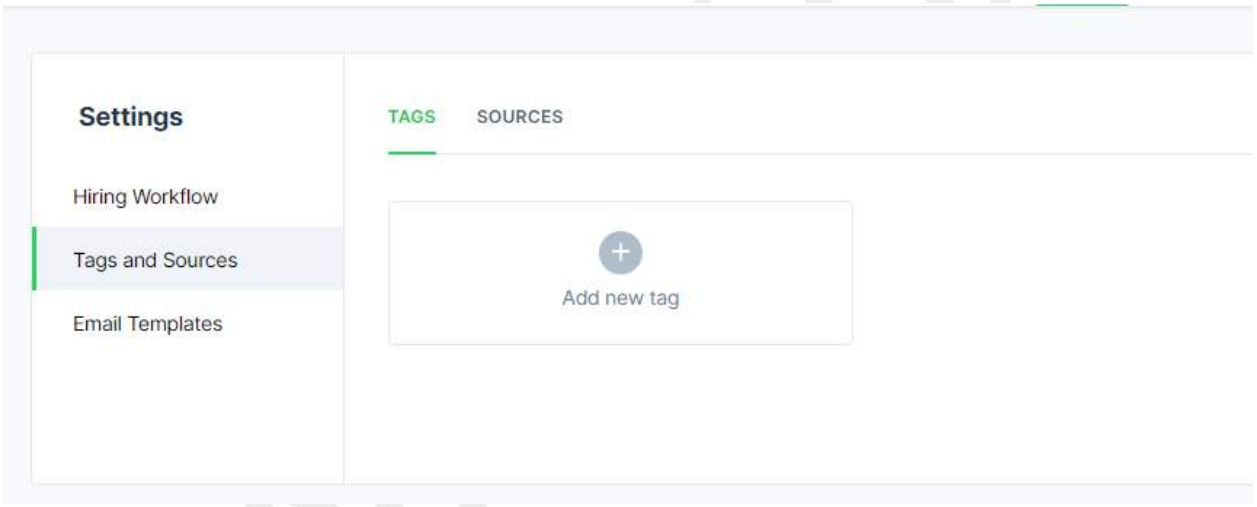
All Jobs which we create(manager)



All stage(applied,hired,offered,rejected)

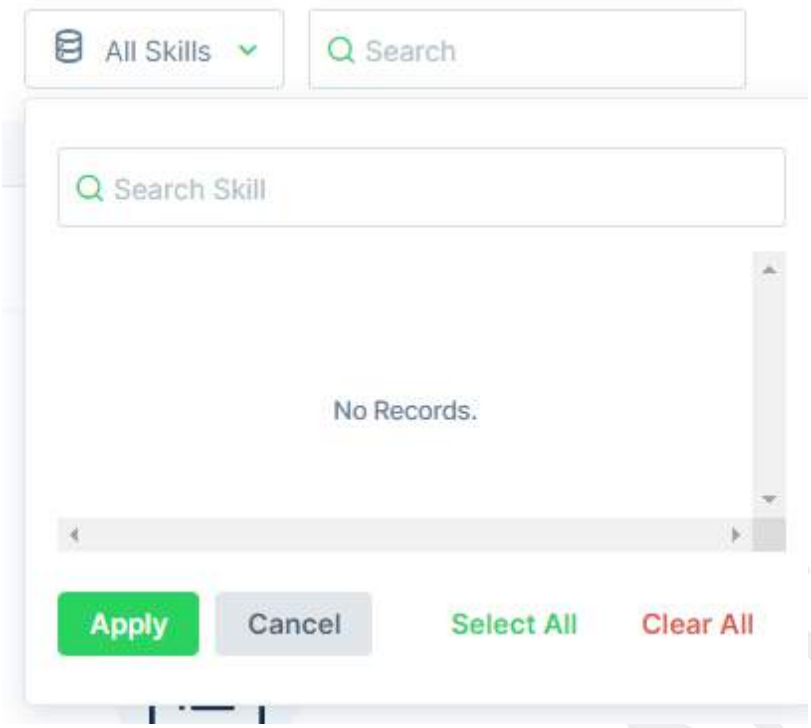


All tags(person name)

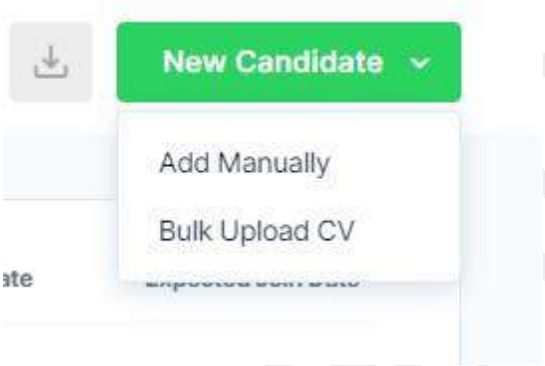


All sources (agency,career site,facebook,linkedin)

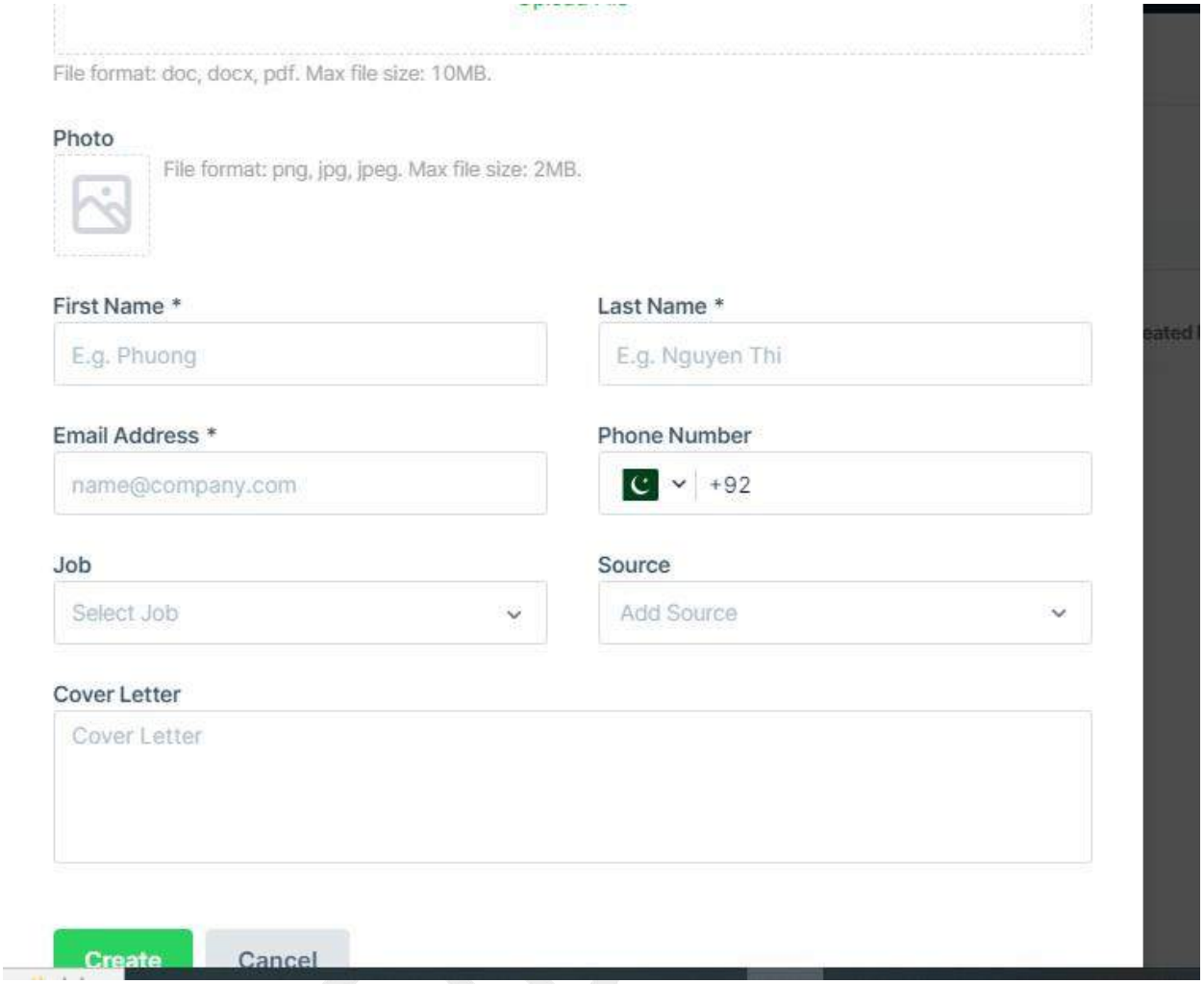
Add skill options()



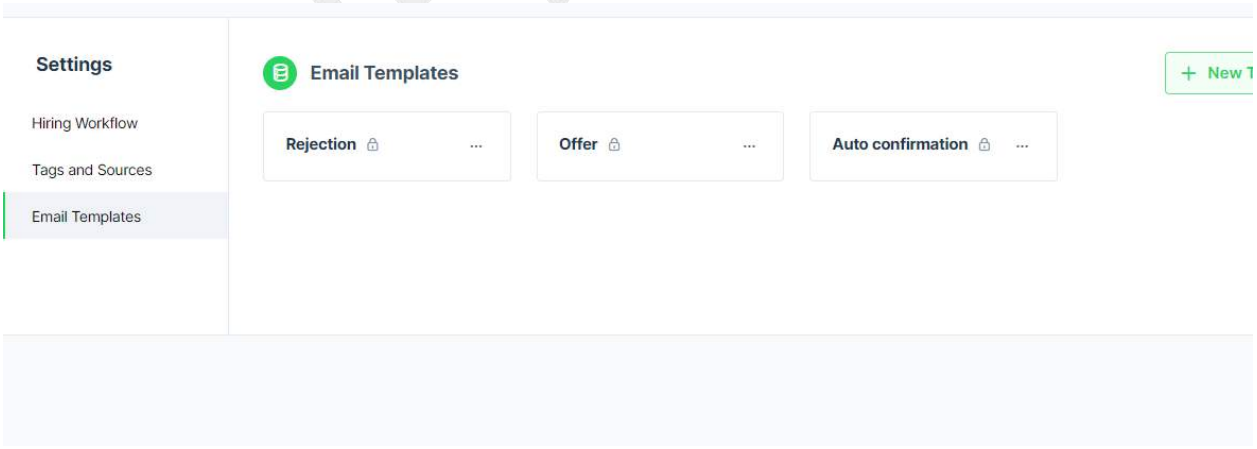
New candidate (add manually,bulk upload cv)



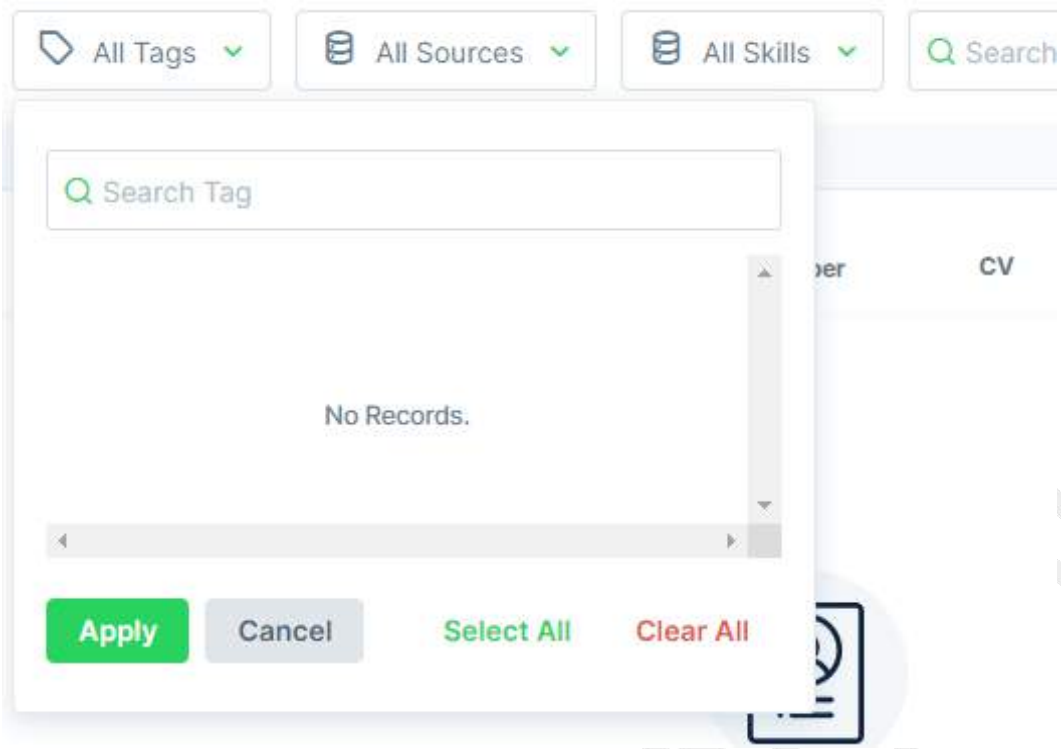
Manually add(cv,photo,first name,last name,email address, phone number)Upload cv(resume)



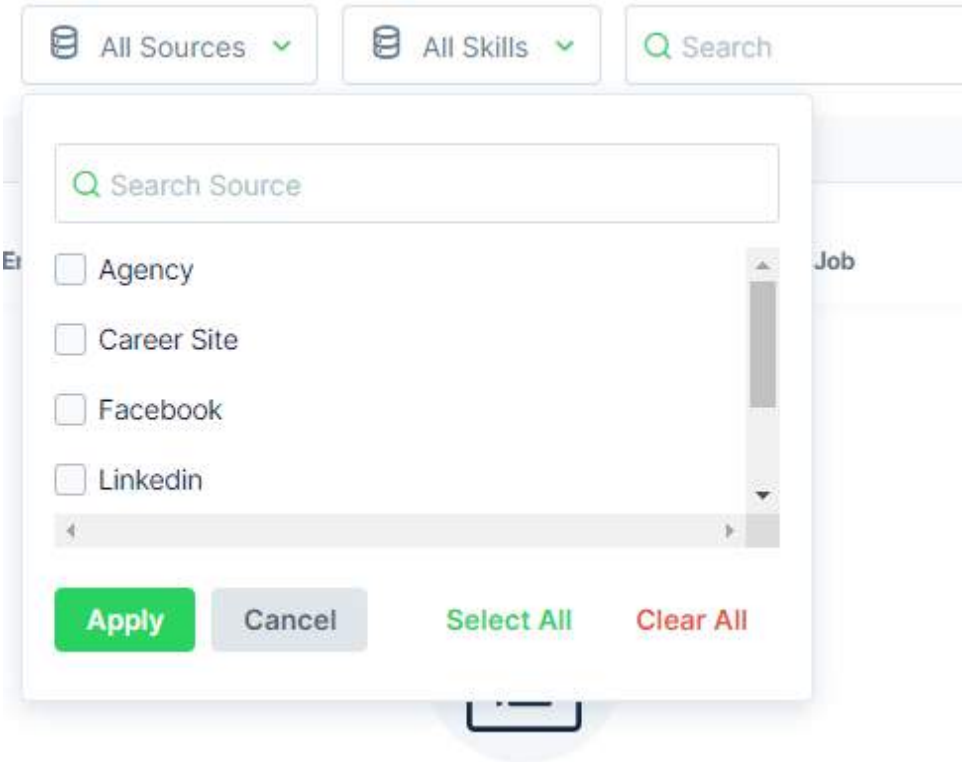
Setting (hiring workflow,tags and source,eamil)

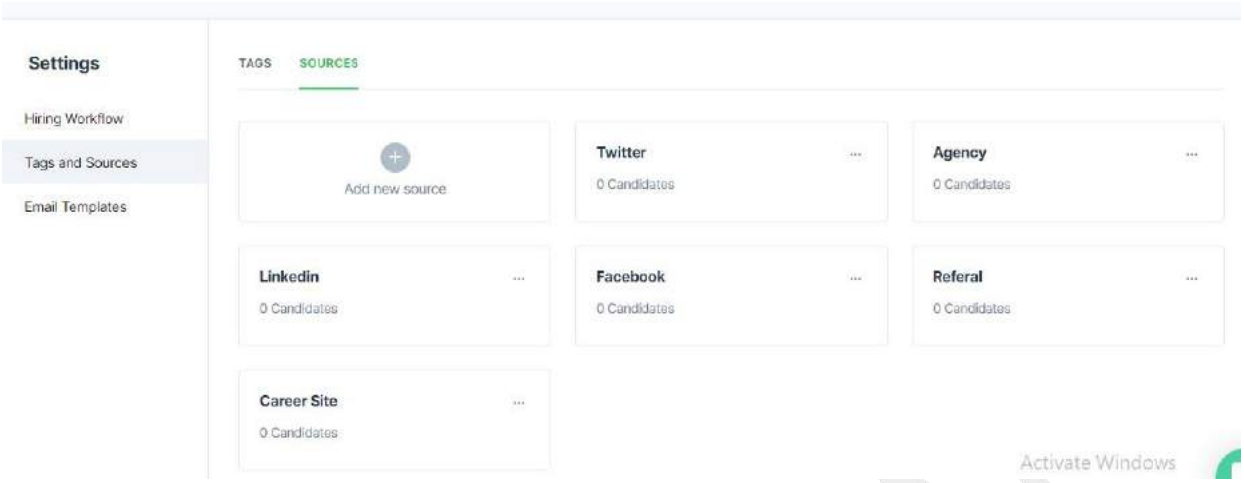


Tags (tags,source)

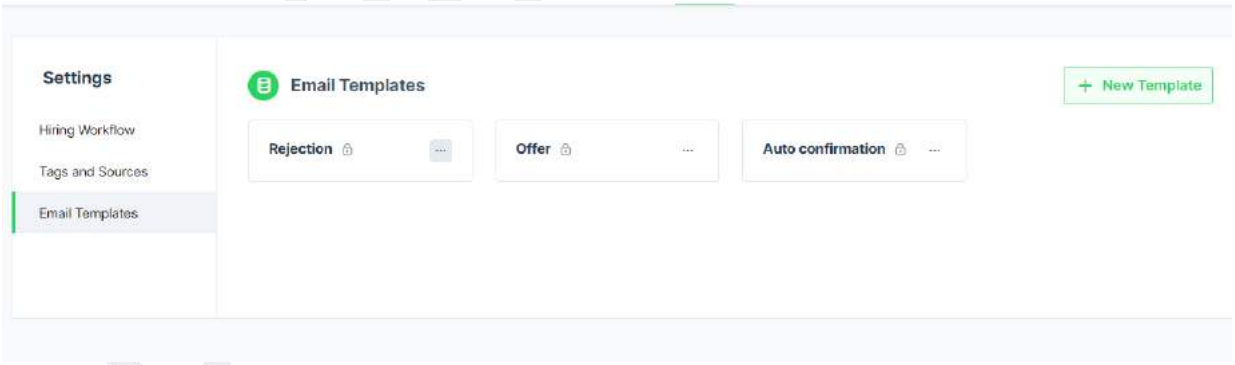


Source(addnew source,Twitter, agency,referral,facebook,LinkedIn,career site)





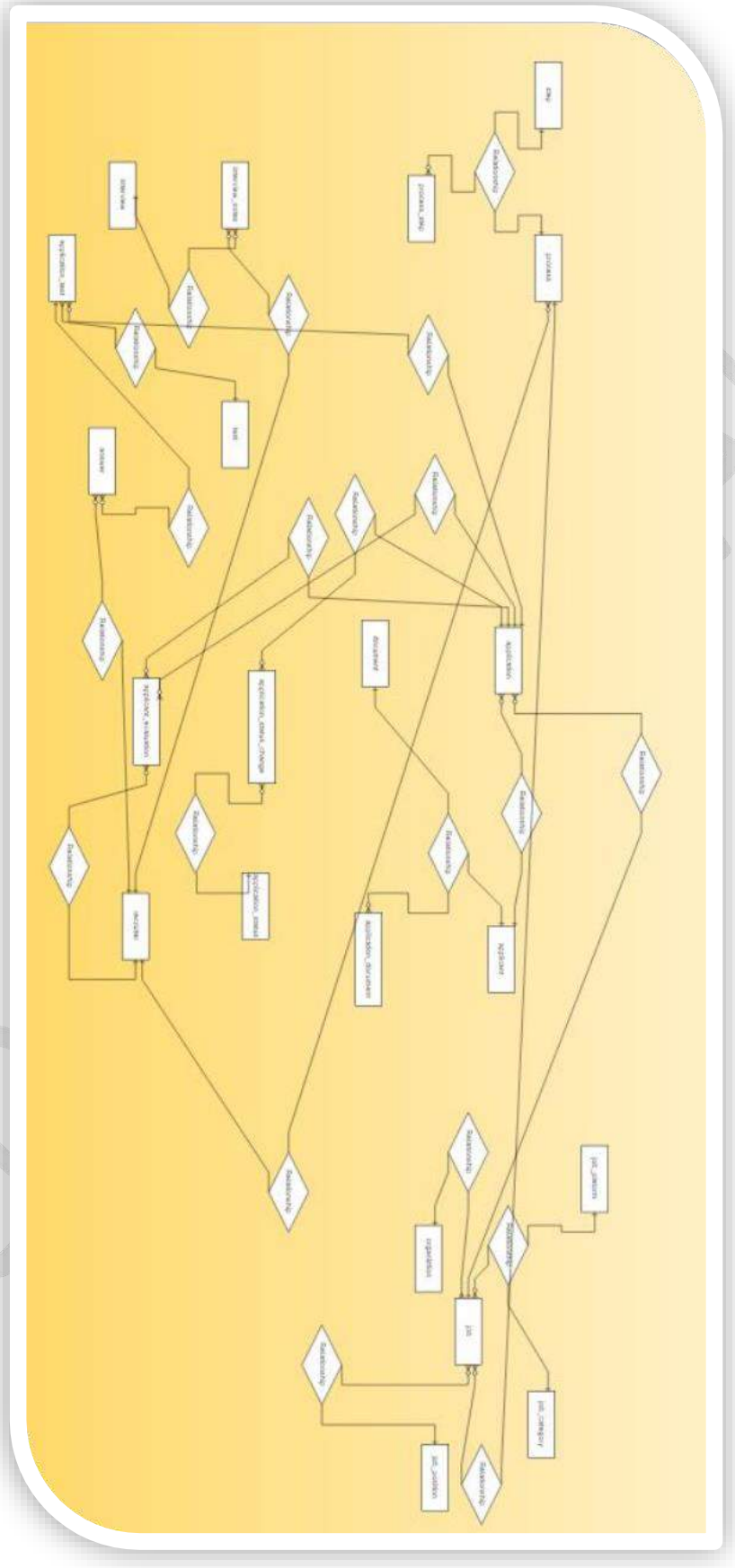
Email(rejection, offer, Auto confirmation)



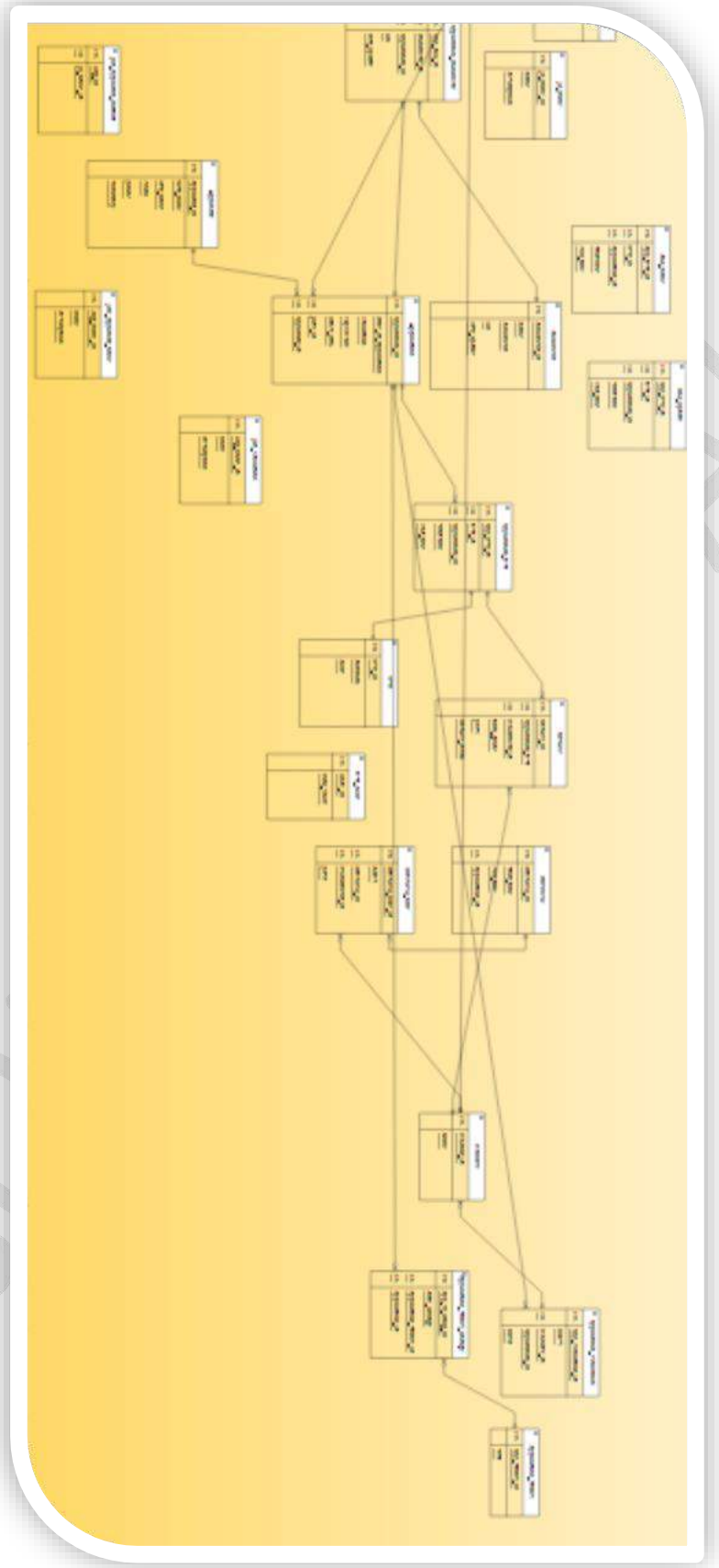
Business rules of promotion Panel:

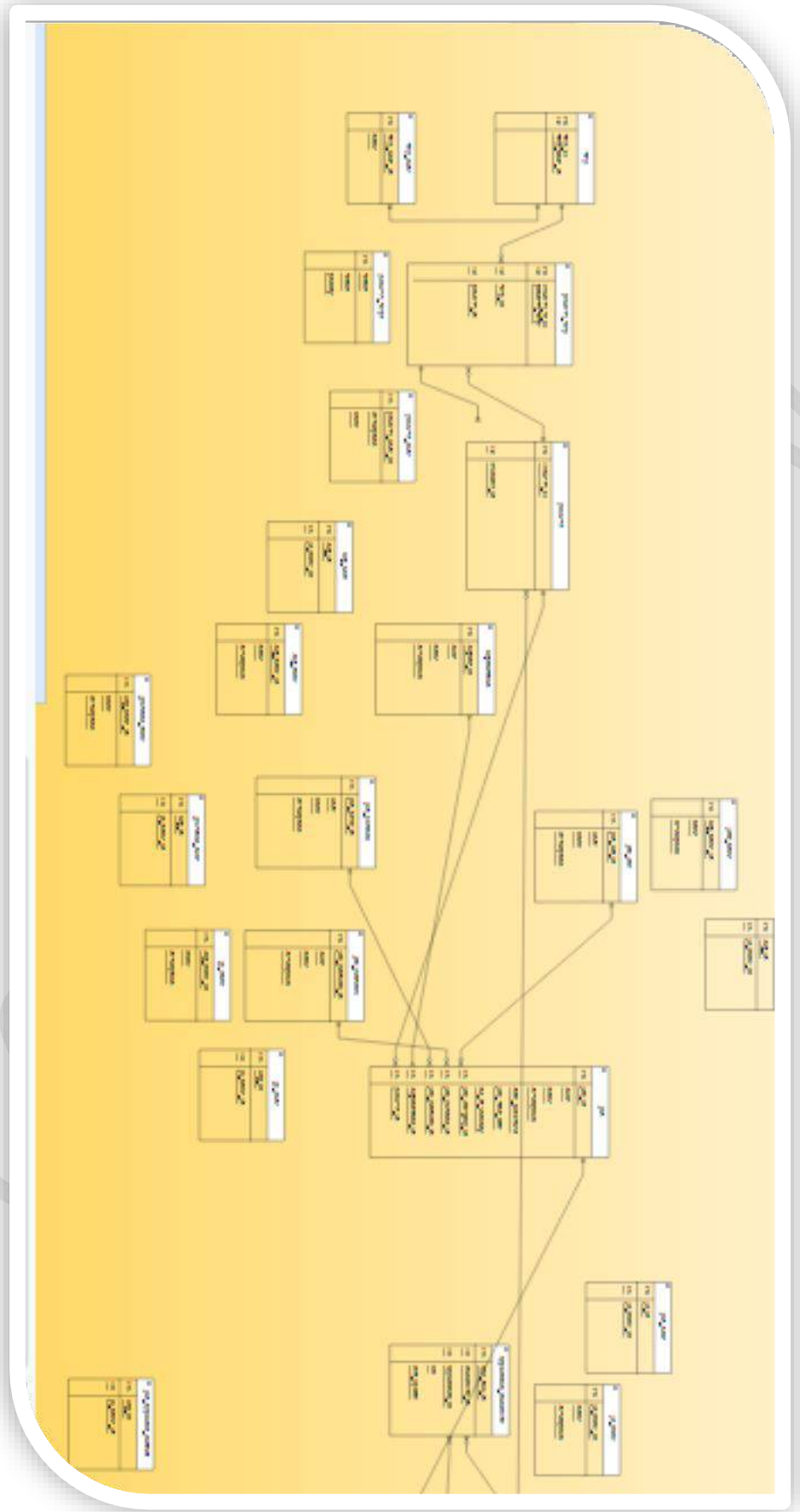
1. Process Process have one and many step to conducting hiring process..
2. step. Many Step belong to one relationship.
3. Job have optional and many relationship with one job_platform.job have optional and many relationships with one job_category.
4. Job have many to one relationship with organization.job have optional and many relationships with one job position.
5. job-category. Job category have One to optional and many relationships with job.
6. Organization's Organization's have one to many relationships with job.
7. Job position Job position have one to optional and many relationships with job.
8. Job platform have one to optional and many relationships with job .
9. Applicant have one to optional and many relationships with application.
10. Applicant will have only one email and phone which should not be multi valued.
11. Application have one to optional and many relationships with applications document.
12. Document have one to optional and many relationships with application and document.
13. Application document have optional and many relationships with application .application-document have optional and many relationships with one application.
14. Test have one to many relationships with application-test.
15. Answer have optional and many relationship with one application-test.
16. Interview have one to many optional and many relationships.
17. Interview notes have optional and many relationships with interview.
18. Application -test. have one to many and optional relationship with answer.
19. Recruiter have one to optional and many relationships with applicant_evaluation.
20. Application_status have one to optional and many relationships with application-status-change.
21. Application_status-change have optional and many relationships with application_ status.
22. -Application_evaluation have one to optional and many relationships with applicant_evaluation.

Entity Relationship Diagram



Conceptual to Logical Mapping





Normalized Tables up to BCNF

Functional Dependencies after BCNF Normalization

Applicant (**id,phone,**name,summary)

Application(application_id,date_of_application,**jobs_id,education_id,applicant_id)**

Education**(id**,experience,other_info)

Document(**document_id**,name,url,document_last_update)

Application_document(**id,applicant_id,contact_id,document_id,education_id)**

Job

Job(**id,**code,name,description,date_published,job_start_date,no_of_vaccanci,**job_category_id,job_position_id,job_platform_id,organization_id,process_id)**

Job_category(**id,**code,name,descriptio)

Job_platform(**id,**code,name,descriptio)

Organization(org_id,code,name,descriptio)

Job_position(job_position_id,code,name,descriptio)

Application_evaluation(**id**,notes,**recruiter_id,**application_id,hired)

Recruiter(**id,**name)

Application_status(**id**,status)

Application_status_change(**id,**date_changed,application_status,application_id)

Test(**id,**code,duration,max_score)

Application_test(**id,test_id**,**application_id,**start_time,end_time)

Answer(**id,application test**,**recruiter_id,**total grade,pass,answer_detail)

Interview(**id,**start_time,end_time,**application_id)**

Interview note(**id,**notes,**interview_id,recruiter_id,**pass)

Process(**id,**code,descriptio,**recruiter_id**)

Code

```
create table Recruiter (

----------------------------attributes
```

```
Recruiter_ID int primary key,
First_name nvarchar(100),
Last_name nvarchar(100),
)
create table process (
----------attributes
Process_id int primary key,
code nvarchar(10),
descriptio nvarchar(max),
----------Foreign Keys

Recruiter_ID int  foreign key references recruiter(Recruiter_ID)
)
create table step (
----------attributes
step_ID int primary key,
code varchar(10),
name nvarchar(10),

)
create table process_step (
----------attributes
Process_step_ID int primary key,
----------Foreign Keys
Process_id int foreign key references Process (Process_id),
step_ID int foreign key references step(step_ID)
)


create table job_category (
----------attributes
job_category_id int primary key,
code nvarchar(20),
name nvarchar(100),
Descripti nvarchar(max),
```

```
)
create table job_platform (
--------------------------attributes
job_platform_ID int primary key,
code varchar(20),
name nvarchar(100),
Descriptio nvarchar(max)
)
create table position (
--------------------------attributes
position_ID int primary key,
Code nvarchar(10),
name varchar(100),
Descriptio nvarchar(max)
)
create table organization (
--------------------------attributes
organization_ID int primary key,
Code nvarchar(10),
Name nvarchar(100),
Descriptio nvarchar(max)
)
create table job (
--------------------------attributes
job_ID int primary key,
Code nvarchar(10),
Name nvarchar(100),
Descriptio nvarchar(400),
Date_published datetime,
Job_start_date datetime,
No_of_vacancy int,
--------------------------Foreign Keys
job_category_id int foreign key references job_category(job_category_id ),
position_ID int foreign key references position(position_ID ),
organization_ID int foreign key references organization(organization_ID  ),
```

```
 job_platform_ID int foreign key references job_platform(job_platform_ID ),
Process_id int foreign key references  Process(Process_id )
)



create table applicant (
--------------------------attributes
applicant_ID int primary key,
First_name Varchar(100),
last_name Varchar(100),
Email nvarchar(100),
phone nvarchar(100),
Summary nvarchar(100),
)
create table application (
--------------------------attributes
application_Id int primary key,
date_of_application datetime,
education nvarchar(max),
Experience nvarchar(max),
Other_info nvarchar(max),
job_ID int  foreign key references job(job_ID ),
 applicant_ID int foreign key references  applicant(applicant_ID ),
)
create table document (
--------------------------attributes
document_ID int primary key,
Name  varchar(20),
document  binary(1000),
url nvarchar(200),
Last_date_update datetime,
--------------------------Foreign Keys
)
create table Application_document (
```

```
----------attributes
Application_document_ID int primary key,

----------Foreign Keys
document_ID int foreign key references document(document_ID ),
application_Id int foreign key references  application(application_Id ),

)



create table applicant_evaluation (
----------attributes
applicant_evaluation_ID int primary key,
Notes nvarchar(100),
last_name nvarchar(100),
Recruiter_ID int foreign key references Recruiter(Recruiter_ID),
application_Id int foreign key references application (application_Id)

)
create table application_status (
application_status_id int primary key,
Stat nvarchar(100)
)
create table application_status_change (
----------attributes
application_status_change int primary key,
Date_change datetime,
Discription Text,
----------Foreign Keys
application_status_id int foreign key references
application_status(application_status_id ),
application_Id int foreign key references  application(application_Id )
)
```

```
create table Test (
--------------------------attributes
Test_id int primary key,
Code  nvarchar(10),
Duration int ,
Max_score int,
)
create table application_test (
--------------------------attributes
application_test_id int primary key,
Start_time datetime,
end_time datetime,
--------------------------Foreign Keys
Test_id int foreign key references  Test(Test_id ),
application_Id int foreign key references  application(application_Id ),

)
create table answer (
--------------------------attributes
Answer_id int primary key,
Total_grades nvarchar(10),
Pass varchar(100),
Answer_details varchar(30),

--------------------------Foreign Keys
application_test_id int foreign key references  application_test(application_test_id
),
Recruiter_ID int foreign key references  Recruiter(Recruiter_ID )

)
create table interview (
--------------------------attributes
Interview_id int primary key,
Start_time datetime,
```

```
end_time datetime,

due_to Text,
----------------------------Foreign Keys
Application_id int foreign key references  application(Application_id )
)
create table interview_notes (
----------------------------attributes
interview_notes_id int primary key,
Notes  nvarchar(20),
----------------------------Foreign Keys
Interview_id int foreign key references Interview(Interview_id),
Recruiter_ID int foreign key references  Recruiter(Recruiter_ID)
)
```

Sample DDL/DML/Triggers/Stored Proc/Views/Stored Functions

Function:

Procedures

Triggers

Views

ScreenShots

Tables

Functions

Procedures

Views

Payroll Database

Introduction

Payroll is defined as the process of paying salary to a company's employees. It starts with preparing a list of employees to be paid and ends with recording those expenses. It is a tangled process that needs different teams such as Payroll, HR, and Finance to work together.

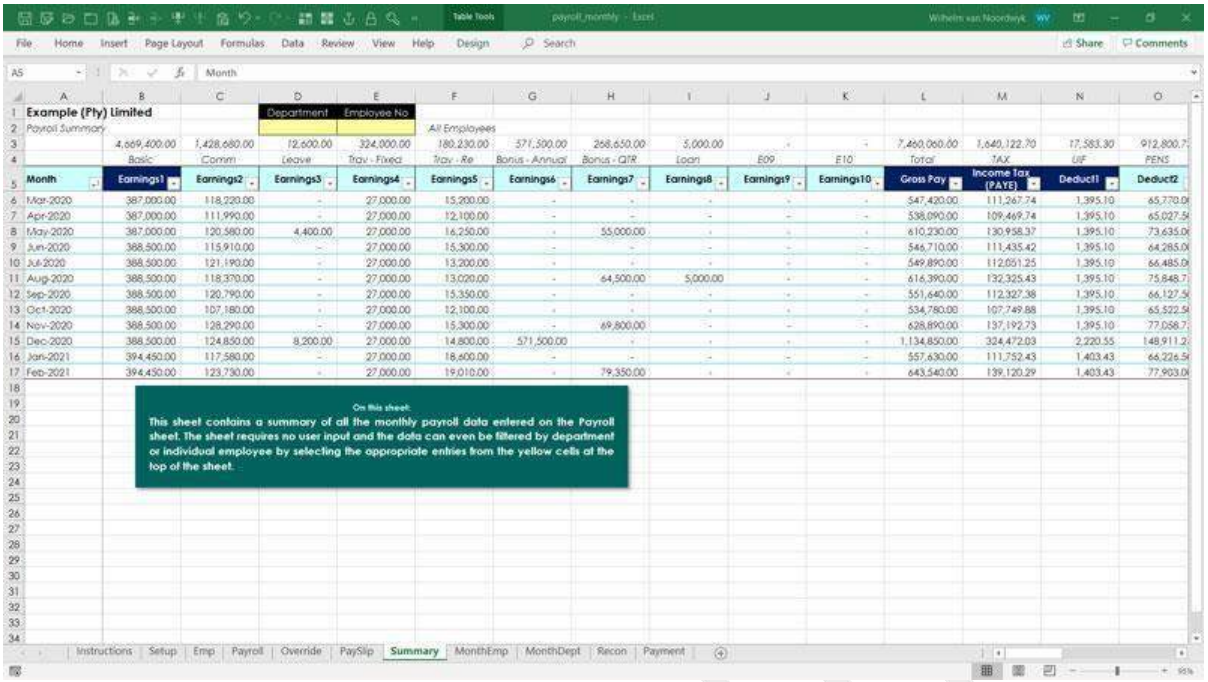
Analysis Screenshots

Excel Template for Payroll

F2 | =(B2*C2)+(D2*E2)

	A	B	C	D	E	F	G
1	Employee Name	Pay	Total Hours Worked	Overtime	Total Overtime Hours	Gross Pay	Income Tax
2	Rohan Singh	250	160	1500	10	55000	
3	Karan Grover	300	155	1000	20	66500	
4	Neha Jain	625	162	2000	30	161250	
5	Sonal Dhawan	500	140	1500	15	92500	
6	Dhruv Kohli	875	148	1200	40	177500	

	A	B	C	D	E	F	G	H	I
1	Employee Name	Pay/Hour	Total Hours Worked	Overtime /Hour	Total Overtime Hours	Gross Pay	Income Tax	Other Deductibles (If Any)	Net Pay
2	Mathew Roy	20	160	30	10	3500	525	200	2,775
3	Rogger Peng	30	140	40	20	5000	750	-	4,250
4	Ram Prakash	20	155	30	10	3400	510	300	2,590
5	Tom Furlan	25	148	35	40	5100	765	300	4,035
6	Ronnie Brook	30	160	40	20	5600	840	-	4,760
7	**Total**		**763**		**100**	**22,600**	**3,390**	**800**	**18,410**
8									

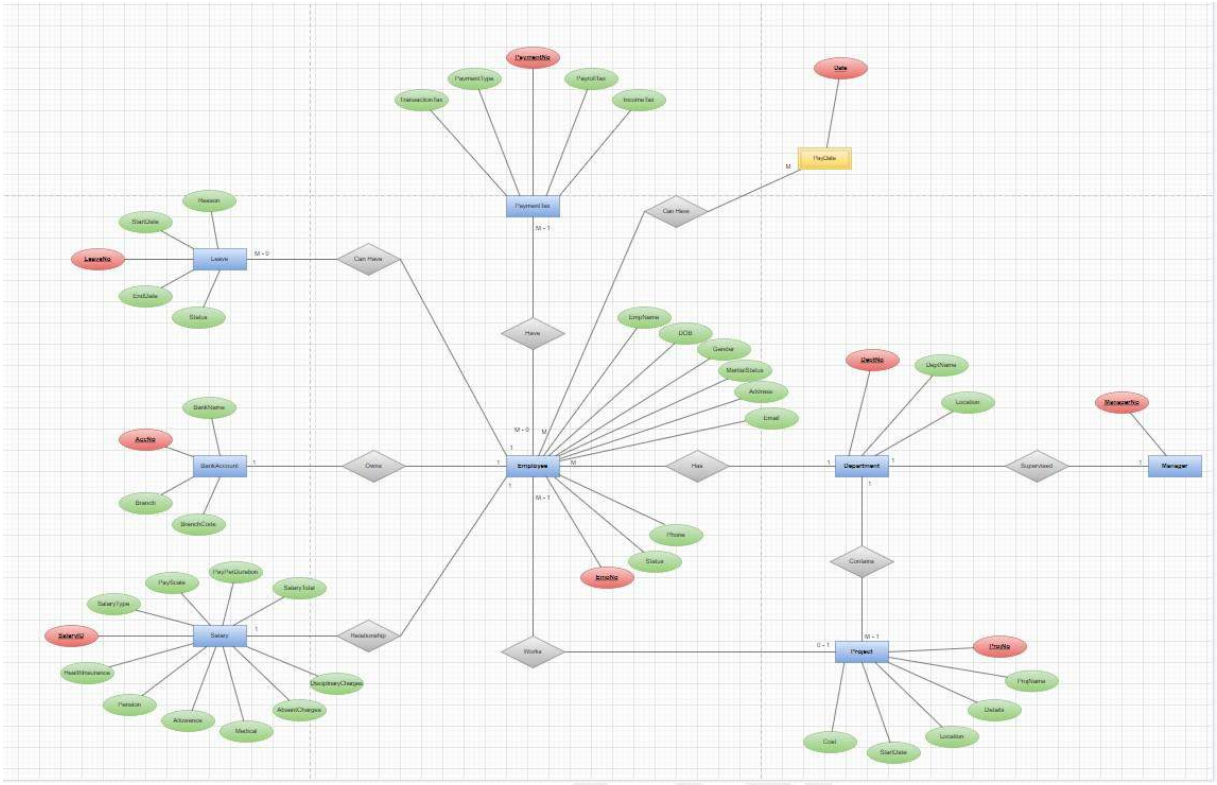


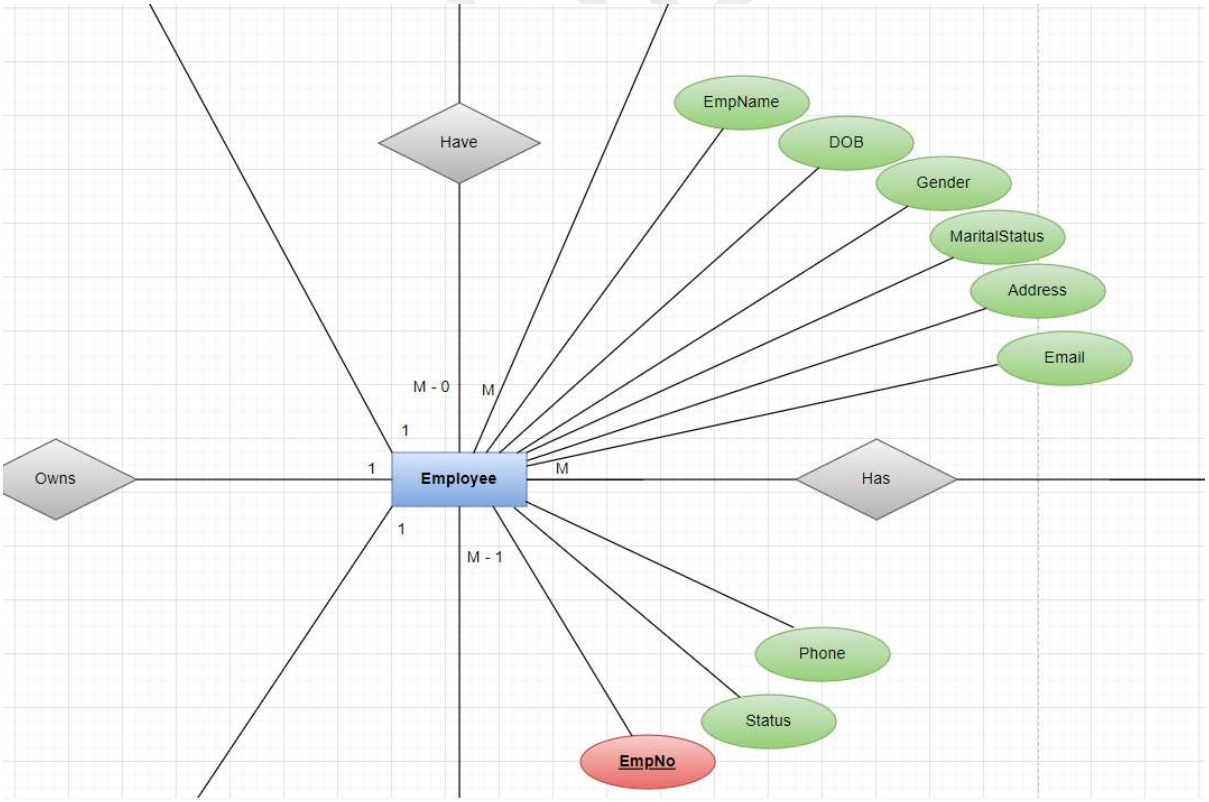
Business Rules

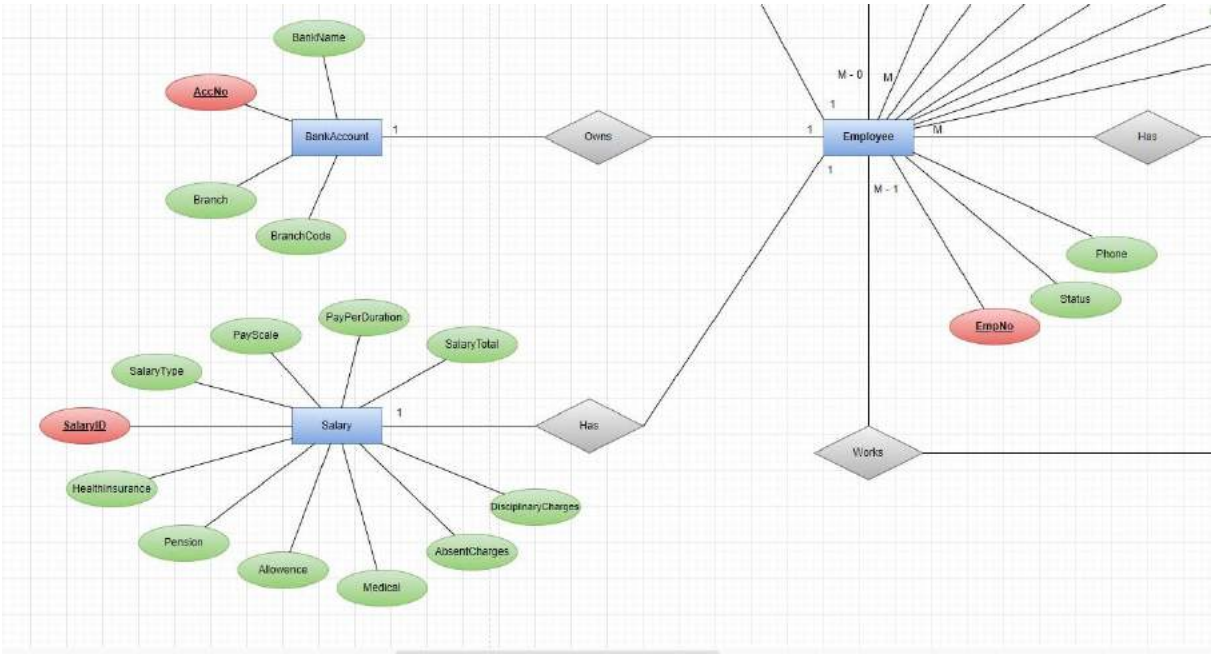
1. It is Compulsory for an Employee to be in a department.
2. A Department will have at least one employee working in it. Or there can be many more.
3. An Employee can work in 1 Project at most, or he may not even work on any.
4. A project will contain many Employees working on it. Or there should be at least 1 employee to be working on it.
5. Employee must have only one Bank Account Detail for his Transactions.
6. A single Bank Account Detail will only be owned by a single Employee.
7. Employee can have multiple Tax paying Method. It is compulsory to have at least 1 Method of Paying Tax.
8. A Tax Paying Method can be used by multiple Employees. Or there could be none to use the same payment method.
9. Employee can have Multiple Leaves during his work. It is possible he may not even go on a single leave.
10. A single Leave can only be used by one and only Employee. No other employee can have the same Leave.
11. Employee can have only one Salary. He cannot have Multiple Salaries during his work.
12. Each Salary will be owned by their respective Employee only.
13. A Department will have only one manager who will manage it.
14. Each manager will only manage only one Department. No more than that.
15. Each Department can have Multiple Projects or at least 1 project.
16. 1 Single Project can only be owned by 1 distinguished Department.
17. Salary Must Contain Bonus. Whether the bonus is 0 or Bonus can be Millions.
18. A Single Bonus will be used for a single salary
19. Salary Must also contain Charges. Whether it is empty or penalty.
20. Charges will be used for a single salary Only.

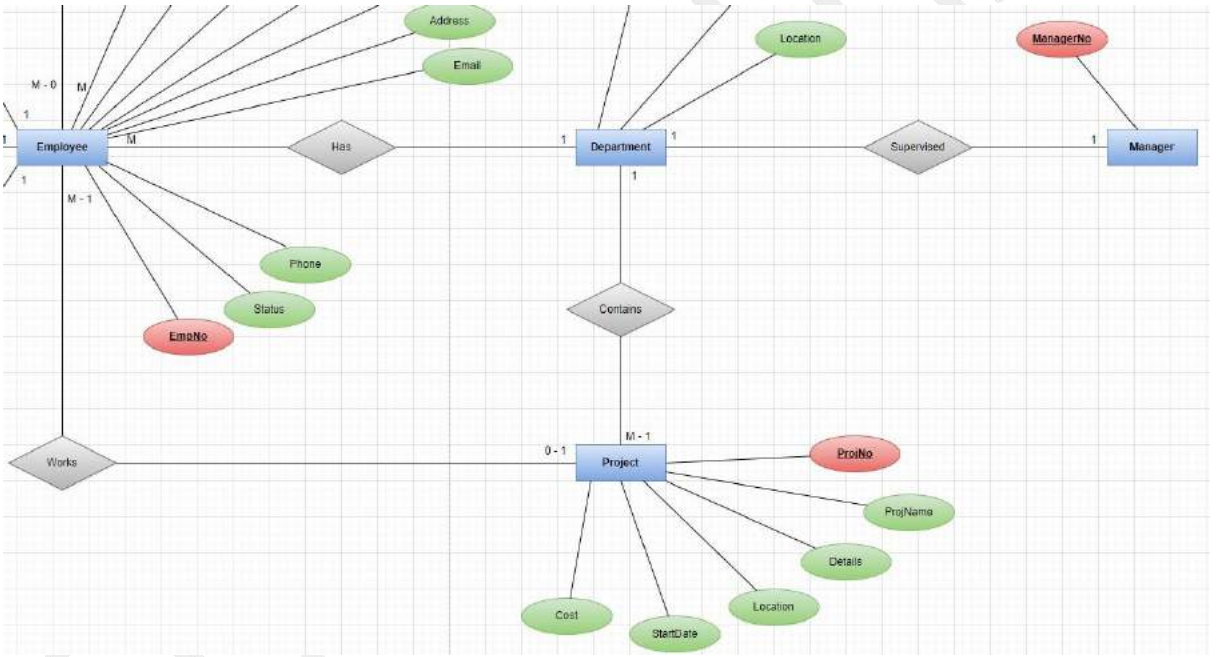
21. 1 Single Payroll will contain Detail of at least 1 employee or there could be many.
22. An Employee will only have 1 payroll at a time.
23. 1 Single Payroll will contain Detail of at least 1 department detail of an Employee or there could be many.
24. A department will have only 1 payroll at a time.
25. 1 Single Payroll will contain Detail of at least 1 working Project of a Department or there could be many.
26. 1 Single Payroll will contain Detail of at least 1 Salary of an Employee or there could be many.
27. 1 Single Payroll will contain Detail of at least 1 Leave Information of an Employee or there could be many leave info for multiple employees.
28. 1 Single Payroll will contain Detail of at least 1 Tax Payment Method of an Employee or there could be many more as much as the number of employees.
29. 1 Single Payroll will contain Detail of at least 1 Bank Details of an Employee or there could be multiple details for multiple employees.
30. A Payroll will have only 1 Paydate.
31. Paydate may contain multiple payrolls of that time or there could be none.

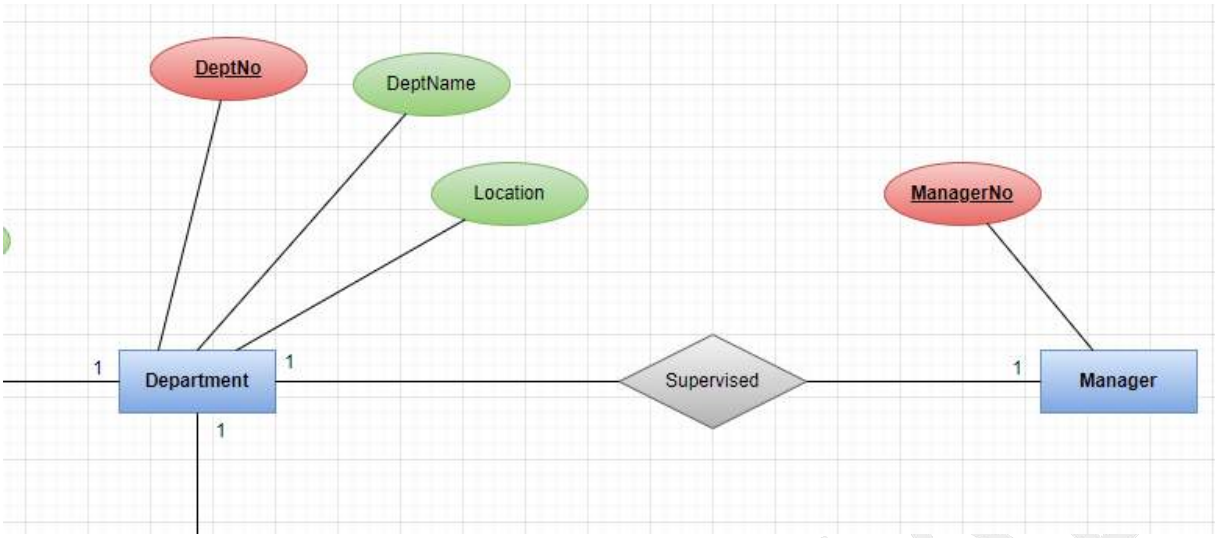
Entity-Relationship Diagram Payroll

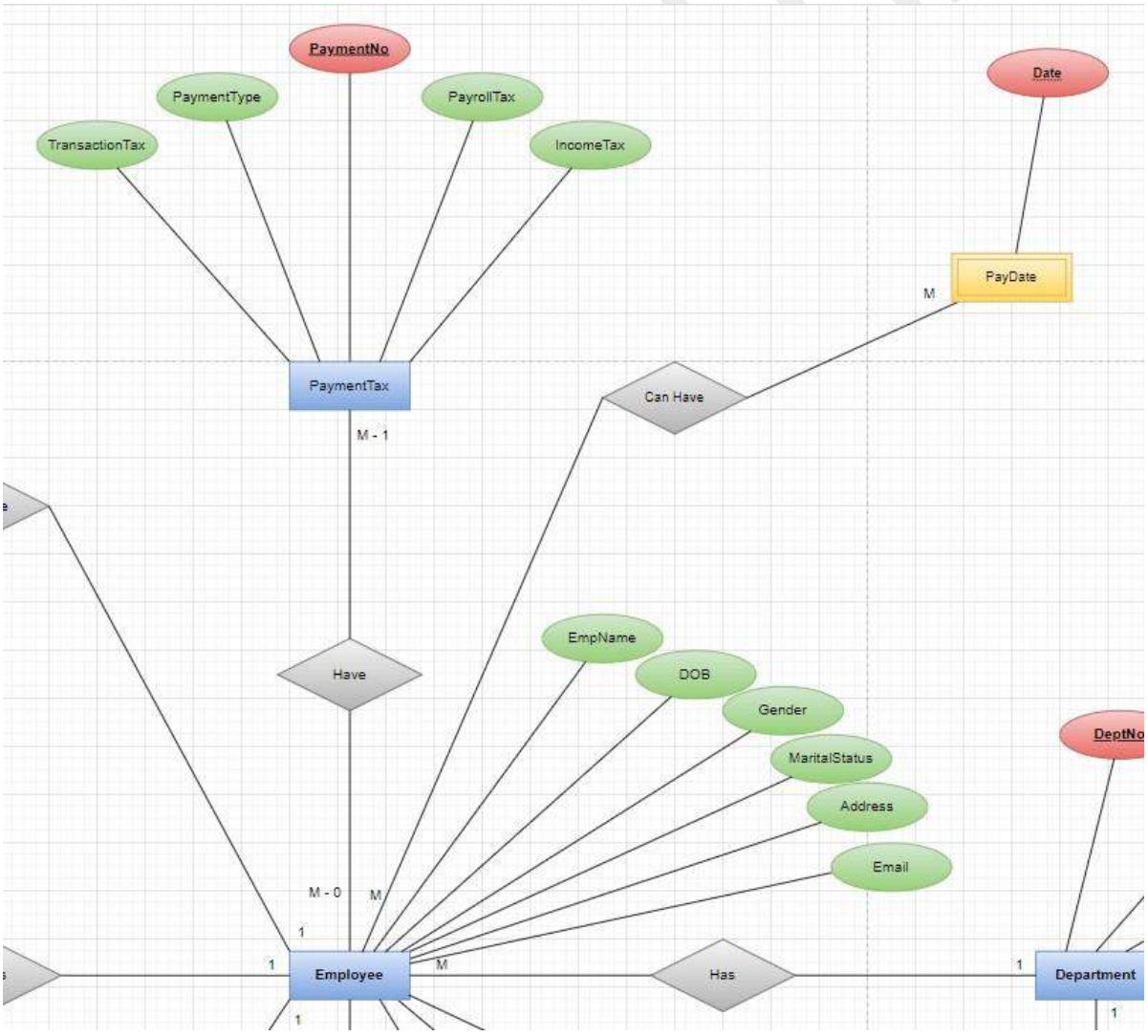


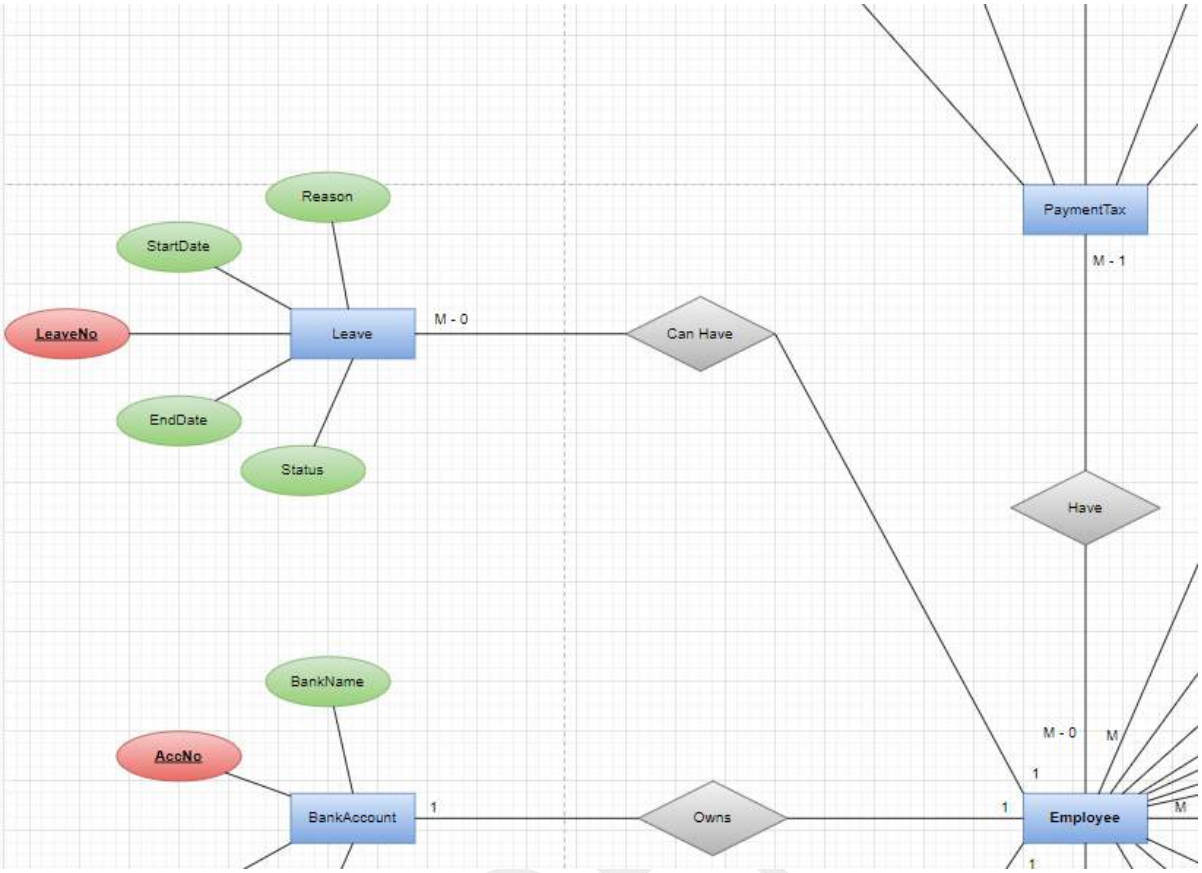

Have
EmpName
DOB
Gender
MaritalStatus
Address
Email
M - 0
M
1
Owns
1
Employee
M
Has
1
M - 1
Phone
Status
EmpNo


BankName
AccNo
BankAccount
Branch
BranchCode
1
Owns
M - 0
M
1
Employee
M
Has
1
M - 1
Phone
Status
EmpNo
PayScale
PayPerDuration
SalaryTotal
SalaryType
SalaryID
Salary
1
Has
Works
HealthInsurance
Pension
Allowence
Medical
AbsentCharges
DisciplinaryCharges


Address
Email
M - 0
M
1
Employee
M
Has
1
Department
1
Supervised
1
Manager
Location
ManagerNo
1
M - 1
Phone
Status
EmpNo
Contains
M - 1
0 - 1
Works
Project
ProjNo
ProjName
Details
Location
Cost
StartDate


DeptNo
DeptName
Location
ManagerNo
1
Department
1
Supervised
1
Manager
1


PaymentNo
PaymentType
PayrollTax
TransactionTax
IncomeTax
Date
PayDate
M
PaymentTax
Can Have
M - 1
EmpName
Have
DOB
Gender
MaritalStatus
Address
Email
DeptNo
M - 0
M
1
1
Employee
M
Has
1
Department
1
1



ERD Link: https://drive.google.com/file/d/1ewI9VF-duXv-fbqbJsqWNcS6AS3XQiEK/view?usp=sharing

Download the File and open it in https://www.Draw.io

Functional Dependencies and Normalization

Payroll (**PNo**, **EmpNo**, EmpName, Dob, Gender, MaritalStatus, Address, Email, Phone, EmpHireDate, EmpStatus, **DeptNo**, DeptName, DeptLocation, **ManagerNo**, ManagerName, **ProjNo**, ProjName, ProjDetail, ProjLocation, ProjStartDate, ProjCost, **AccNo**, BankName, Branch, BranchCode, **SalaryID**, SalaryType, PayScale, PayPerDuration, SalaryTotal, **ChargesID** , AbsentCharges, DisciplinaryCharges, **BonusCode**, HealthInsurance, Pension, Allowence, Medical, **PaymentNo**, PaymentTax, TransactionTax, PayrollTax, IncomeTax, **LeaveNo**, LeaveStartDate, LeaveEndDate, Reason, LeaveStatus, HoursWorked, Date, Report, TotalAmmount)

1st Normalization Form

PayrollDetail (**PNo**, **EmpNo**, **DeptNo**, **ProjNo**, **AccNo**, **SalaryID**, **PaymentNo**, **LeaveNo,** HoursWorked, Date, Report, TotalAmmount)

Employee(**EmpNo**, EmpName, Dob, Gender, MaritalStatus, Address, Email, Phone, EmpHireDate, EmpStatus)

Department(**DeptNo**, DeptName, DeptLocation, **ManagerNo**, ManagerName)

Project(**ProjNo**, ProjName, ProjDetail, ProjLocation, ProjStartDate, ProjCost)

Bank(**AccNo**, BankName, Branch, BranchCode)

Salary(**SalaryID**, SalaryType, PayScale, PayPerDuration, SalaryTotal, **ChargesID** , AbsentCharges, DisciplinaryCharges, **BonusCode**, HealthInsurance, Pension, Allowence, Medical)

PaymentTax(**PaymentNo**, PaymentTax, TransactionTax, PayrollTax, IncomeTax)

Leave(**LeaveNo**, LeaveStartDate, LeaveEndDate, Reason, LeaveStatus)

2nd Normalization Form

PayrollDetail (**PNo**, **EmpNo**, **DeptNo**, **ProjNo**, **AccNo**, **SalaryID**, **PaymentNo**, **LeaveNo**, HoursWorked, Date, Report, TotalAmmount)

Employee(**EmpNo**, EmpName, Dob, Gender, MaritalStatus, Address, Email, Phone, EmpHireDate, EmpStatus)

Department(**DeptNo**, DeptName, DeptLocation, ManagerNo)

Manager (**ManagerNo**, ManagerName)

Project(**ProjNo**, ProjName, ProjDetail, ProjLocation, ProjStartDate, ProjCost)

Bank(**AccNo**, BankName, Branch, BranchCode)

Salary(**SalaryID**, SalaryType, PayScale, PayPerDuration, SalaryTotal, ChargesID, BonusCode)

Charges(**ChargesID**, AbsentCharges, DisciplinaryCharges)

Bonus(**BonusCode**, HealthInsurance, Pension, Allowence, Medical)

PaymentTax(PaymentNo, PaymentTax, TransactionTax, PayrollTax, IncomeTax)

Leave(LeaveNo, LeaveStartDate, LeaveEndDate, Reason, LeaveStatus)

3rd Normalization Form

PayDate (Date, PNo)

PayrollDetail (PNo, EmpNo, DeptNo, ProjNo, AccNo, SalaryID, PaymentNo, LeaveNo, HoursWorked, Report, TotalAmmount)

Employee(EmpNo, EmpName, Dob, Gender, MaritalStatus, Address, Email, Phone, EmpHireDate, EmpStatus, DeptNo, ProjNo)

Department(DeptNo, DeptName, DeptLocation, ManagerNo)

Manager (ManagerNo, ManagerName)

Project(ProjNo, ProjName, ProjDetail, ProjLocation, ProjStartDate, ProjCost, DeptNo)

Bank(AccNo, BankName, Branch, BranchCode, EmpNo)

Salary(SalaryID, SalaryType, PayScale, PayPerDuration, SalaryTotal, ChargesID, BonusCode, EmpNo)

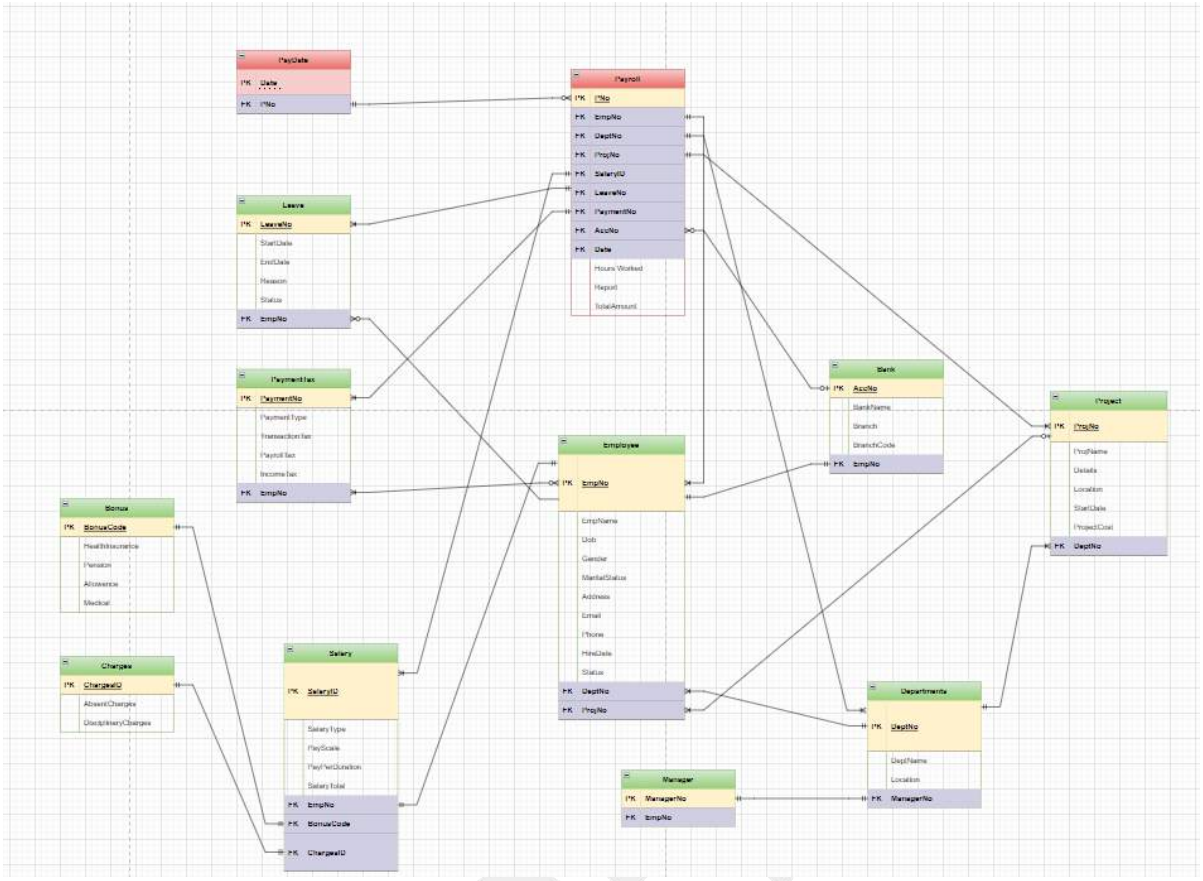
Charges(ChargesID, AbsentCharges, DisciplinaryCharges)

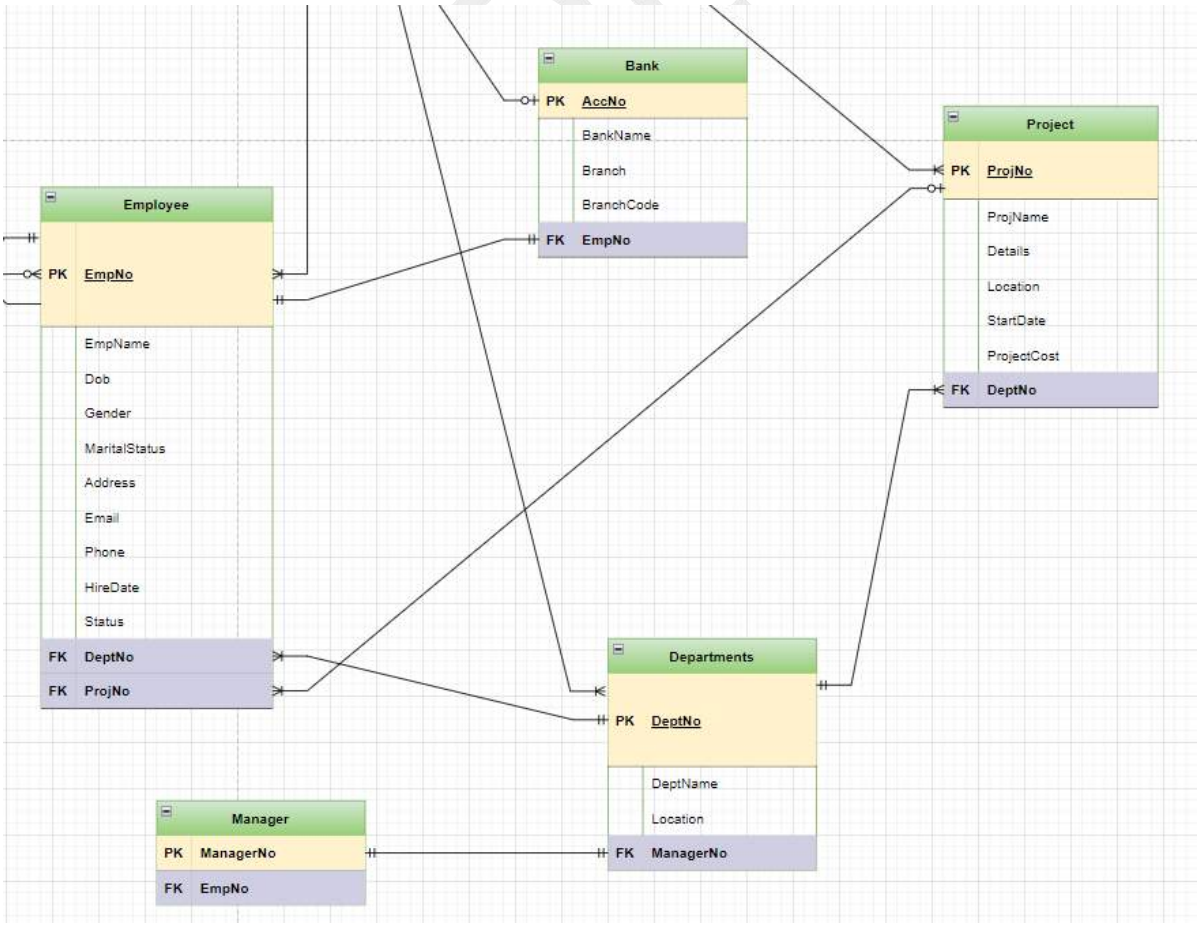
Bonus(BonusCode, HealthInsurance, Pension, Allowence, Medical)

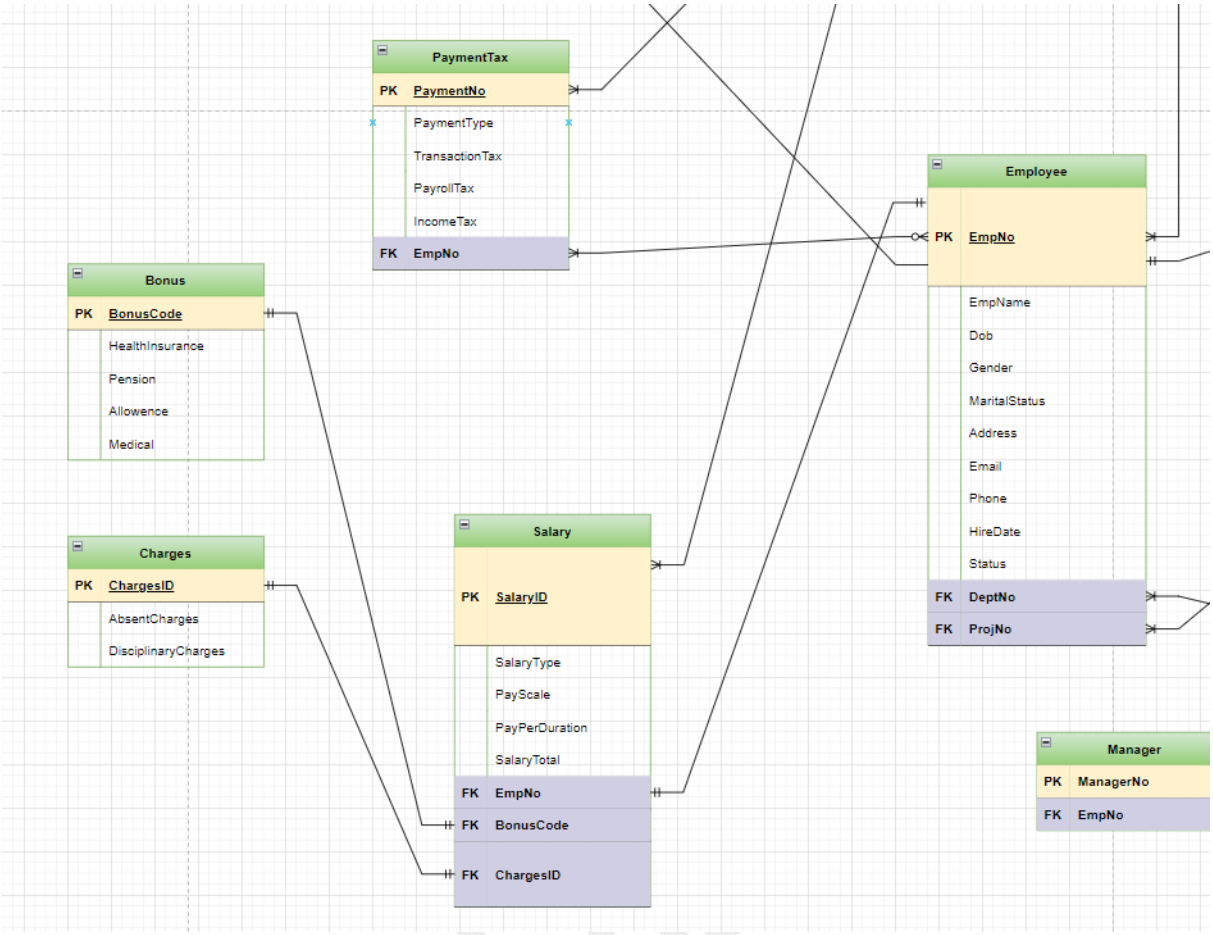
PaymentTax(PaymentNo, PaymentTax, TransactionTax, PayrollTax, IncomeTax, EmpNo)

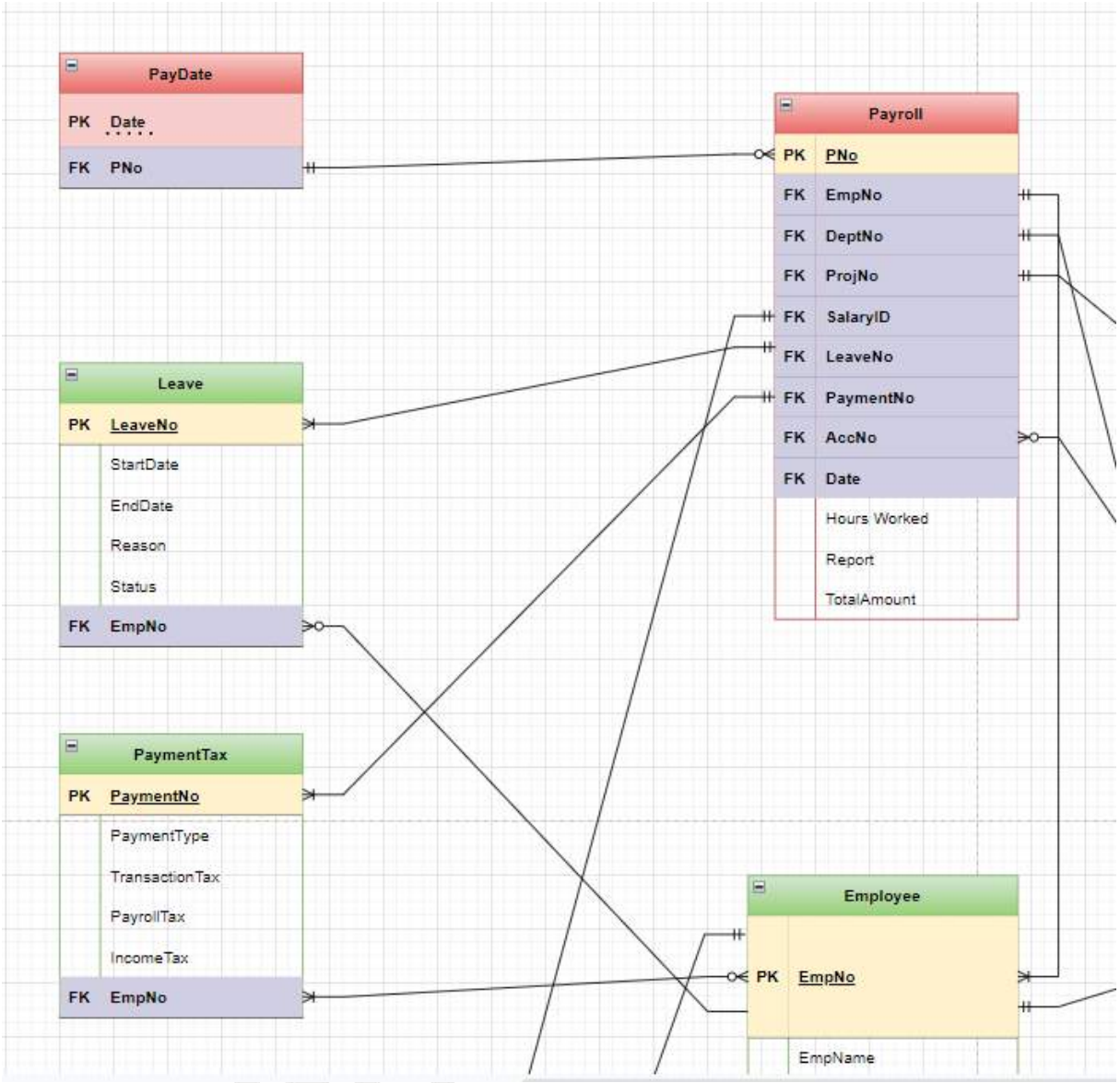
Leave(LeaveNo, LeaveStartDate, LeaveEndDate, Reason, LeaveStatus, EmpNo)

Logical Schema After Normalization




Bank
PK AccNo
BankName
Branch
BranchCode
FK EmpNo
Project
PK ProjNo
ProjName
Details
Location
StartDate
ProjectCost
FK DeptNo
Employee
PK EmpNo
EmpName
Dob
Gender
MaritalStatus
Address
Email
Phone
HireDate
Status
FK DeptNo
FK ProjNo
Departments
PK DeptNo
DeptName
Location
Manager
PK ManagerNo
FK EmpNo
FK ManagerNo





Coding of Database Payroll

Creating Database

```
create Database Payroll
```

Table Employee:

```
Create Table Employee (
EmpNo Int Not Null,
EmpName Varchar(25) not null,
DOB date,
```

```
Gender varchar(10),
MaritalStatus varchar(10),
EmpAddress varchar(30),
PhoneNo varchar(20),
HireDate Date,
Status varchar(10),
DeptNo int not null,
ProjNo int

constraint PK_EmpNo Primary Key (EmpNo)
)
```

Changes/Upgradation of Employee

```
Alter Table Employee Add Constraint FK_EmpDeptNo Foreign Key (DeptNo) References
Department(DeptNo)
Alter Table Employee Add Constraint FK_EmpProjNo Foreign Key (ProjNo) References
Project(ProjNo)
```

Procedure for insertion in Employee:

```
create procedure AddEmployee(@EmpID int, @Name varchar(25), @DoBb date, @Genderr
varchar(20), @Marital varchar(20), @Email varchar(30), @Phone varchar (20), @HireDate
date, @Statuss varchar(20), @Deptt int, @Projj int)
as begin
Insert into Employee(EmpNo, EmpName, DOB, Gender, MaritalStatus, EmpAddress, PhoneNo,
HireDate, Status, DeptNo, ProjNo) values (@EmpID, @Name, @DoBb, @Genderr, @Marital,
@Email, @Phone, @HireDate, @Statuss, @Deptt, @Projj)
End
```

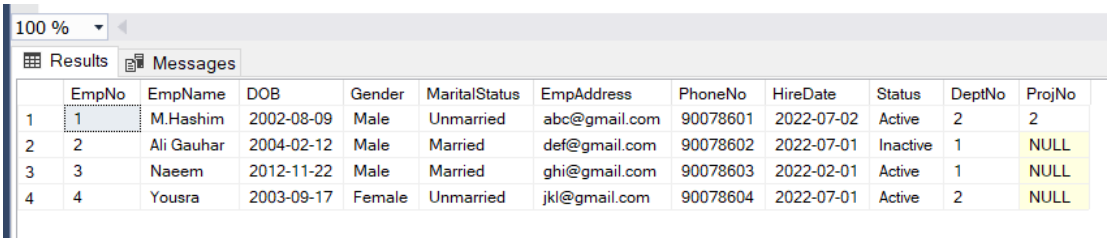
Procedure for removal of Employee:

```
create procedure RemoveEmployee(@EmpID int)
as begin
Delete from Employee where EmpNo = @EmpID
End
```

Insertion/Deletion of Employee

```
exec AddEmployee 5, 'Taha', '2001-01-23','Male', 'Unmarried',
'dadomazzoayo@yahoo.com', 41231113223, '2021-04-01', 'Inactive', 2, 2

exec RemoveEmployee 3
```

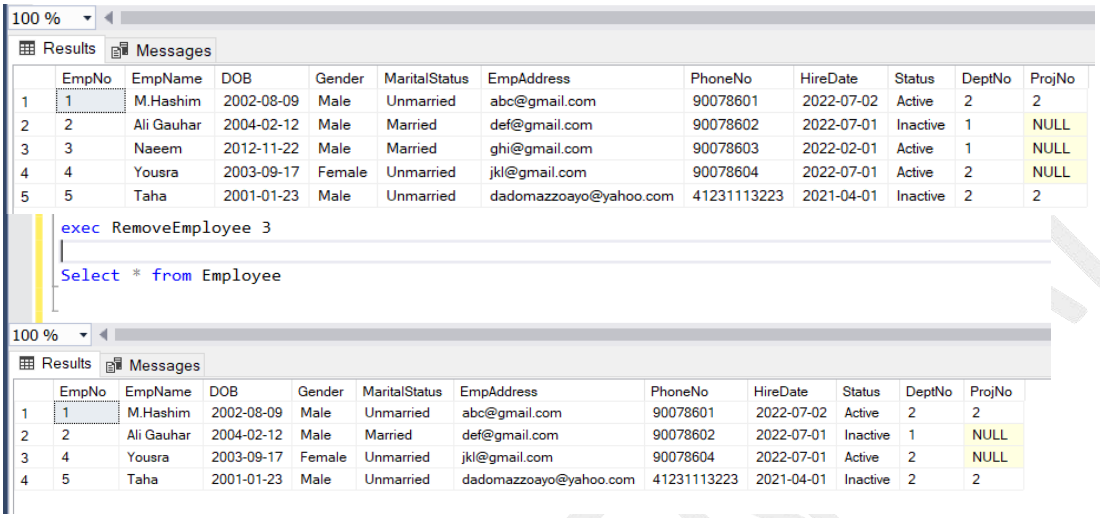
Screenshot:



100 %

Results | Messages

	EmpNo	EmpName	DOB	Gender	MaritalStatus	EmpAddress	PhoneNo	HireDate	Status	DeptNo	ProjNo
1	1	M.Hashim	2002-08-09	Male	Unmarried	abc@gmail.com	90078601	2022-07-02	Active	2	2
2	2	Ali Gauhar	2004-02-12	Male	Married	def@gmail.com	90078602	2022-07-01	Inactive	1	NULL
3	3	Naeem	2012-11-22	Male	Married	ghi@gmail.com	90078603	2022-02-01	Active	1	NULL
4	4	Yousra	2003-09-17	Female	Unmarried	jkl@gmail.com	90078604	2022-07-01	Active	2	NULL



100 %

Results | Messages

	EmpNo	EmpName	DOB	Gender	MaritalStatus	EmpAddress	PhoneNo	HireDate	Status	DeptNo	ProjNo
1	1	M.Hashim	2002-08-09	Male	Unmarried	abc@gmail.com	90078601	2022-07-02	Active	2	2
2	2	Ali Gauhar	2004-02-12	Male	Married	def@gmail.com	90078602	2022-07-01	Inactive	1	NULL
3	3	Naeem	2012-11-22	Male	Married	ghi@gmail.com	90078603	2022-02-01	Active	1	NULL
4	4	Yousra	2003-09-17	Female	Unmarried	jkl@gmail.com	90078604	2022-07-01	Active	2	NULL
5	5	Taha	2001-01-23	Male	Unmarried	dadomazzoayo@yahoo.com	41231113223	2021-04-01	Inactive	2	2

```
exec RemoveEmployee 3

Select * from Employee
```

100 %

Results | Messages

	EmpNo	EmpName	DOB	Gender	MaritalStatus	EmpAddress	PhoneNo	HireDate	Status	DeptNo	ProjNo
1	1	M.Hashim	2002-08-09	Male	Unmarried	abc@gmail.com	90078601	2022-07-02	Active	2	2
2	2	Ali Gauhar	2004-02-12	Male	Married	def@gmail.com	90078602	2022-07-01	Inactive	1	NULL
3	4	Yousra	2003-09-17	Female	Unmarried	jkl@gmail.com	90078604	2022-07-01	Active	2	NULL
4	5	Taha	2001-01-23	Male	Unmarried	dadomazzoayo@yahoo.com	41231113223	2021-04-01	Inactive	2	2

Table Department:

```
Create Table Department (

DeptNo int not null,
DeptName varchar (25) not null,
DeptLocation varchar (30)

constraint PK_DeptNo Primary Key (DeptNo)
)
```

Changes/Upgradation of Department:

```
Alter Table Department alter Column ManagerNo int not null
Alter Table Department add constraint FK_DeptManagerNo Foreign Key (ManagerNo)
References Manager(ManagerNo)
```

Procedure for insertion in Department:

```
create procedure AddDepartment(@DeptID int, @Name varchar(30), @Location varchar(30),
@ManagerID int)
as begin
Insert into Department(DeptNo, DeptName, DeptLocation, ManagerNo) values (@DeptID,
@Name, @Location, @ManagerID)
end
```

Procedure for removal of Department:

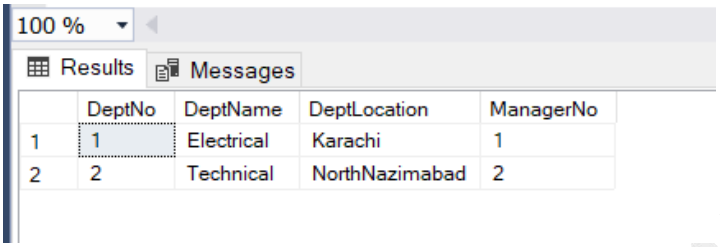
```
create Procedure RemoveDepartment(@DeptID int)
```

```
as begin
Delete from Department where DeptNo = @DeptID
end
```

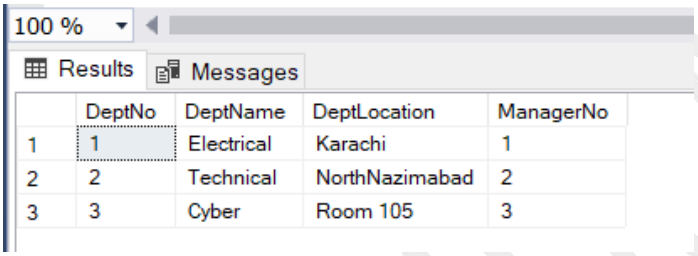
Insertion/Deletion of Department:

```
exec AddDepartment 3, 'Cyber', 'Room 105', 3
exec RemoveDepartment 3
```

Screenshot:



	DeptNo	DeptName	DeptLocation	ManagerNo
1	1	Electrical	Karachi	1
2	2	Technical	NorthNazimabad	2



	DeptNo	DeptName	DeptLocation	ManagerNo
1	1	Electrical	Karachi	1
2	2	Technical	NorthNazimabad	2
3	3	Cyber	Room 105	3

Table Project:

```
Create Table Project (

ProjNo int not null,
ProjName varchar (25) not null,
ProjDetail varchar (30),
ProjLocation varchar (30) not null,
ProjStartDate Date not null,
ProjCost decimal,
DeptNo int not null,

constraint FK_ProjDeptNo Foreign Key (DeptNo) References Department(DeptNo),
constraint PK_ProjNo Primary Key (ProjNo)
)
```

Changes/Upgradation of Project:

```
Alter Table Project Alter column ProjName Varchar(40) not null
```

Procedure for insertion in Project:

```
create procedure AddProject(@ProjID int, @Name varchar(30), @Detail varchar(40),
@Location varchar(30), @Date date, @Cost decimal, @DeptID int)
```

```
as begin
Insert into Project(ProjNo, ProjName, ProjDetail, ProjLocation, ProjStartDate,
ProjCost, DeptNo) values (@ProjID , @Name , @Detail , @Location , @Date , @Cost ,
@DeptID)
end
```

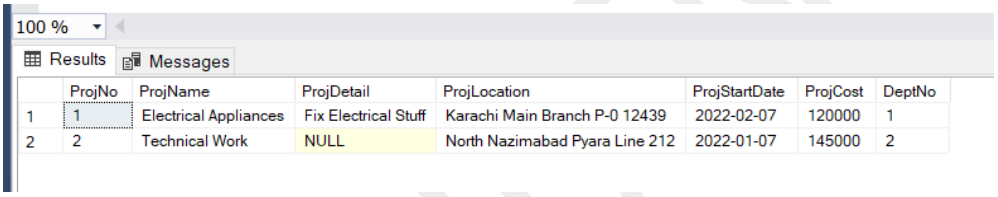
Procedure for removal of Project:

```
create Procedure RemoveProject(@ProjID int)
as begin
Delete from Project where ProjNo = @ProjID
end
```

Insertion/Deletion of Project:

```
exec AddProject 3, 'CyberAnalysis', 'To Check for any Cyber Issue', 'CyberRoom 212',
'2020-02-1', 300000, 3
exec AddProject 4, 'CyberDefence', null, 'CyberRoom 213', '2020-01-12', 300000, 3
```

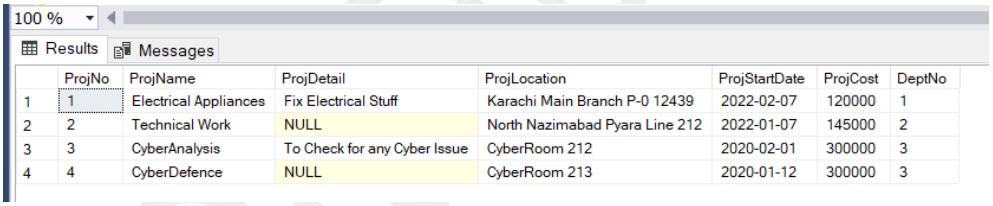
Screenshot:



100 %

Results | Messages

	ProjNo	ProjName	ProjDetail	ProjLocation	ProjStartDate	ProjCost	DeptNo
1	1	Electrical Appliances	Fix Electrical Stuff	Karachi Main Branch P-0 12439	2022-02-07	120000	1
2	2	Technical Work	NULL	North Nazimabad Pyara Line 212	2022-01-07	145000	2



100 %

Results | Messages

	ProjNo	ProjName	ProjDetail	ProjLocation	ProjStartDate	ProjCost	DeptNo
1	1	Electrical Appliances	Fix Electrical Stuff	Karachi Main Branch P-0 12439	2022-02-07	120000	1
2	2	Technical Work	NULL	North Nazimabad Pyara Line 212	2022-01-07	145000	2
3	3	CyberAnalysis	To Check for any Cyber Issue	CyberRoom 212	2020-02-01	300000	3
4	4	CyberDefence	NULL	CyberRoom 213	2020-01-12	300000	3

Table Manager:

```
Create Table Manager (
ManagerNo int not null,
EmpNo int not null unique,

constraint PK_ManagerNo Primary Key (ManagerNo),
constraint FK_ManagerEmpNo Foreign Key (EmpNo) References Employee(EmpNo),
)
```

Insertion/Deletion of Manager:

Procedure for insertion in Manager:

```
create procedure AddManager(@ManagerID int, @EmpID int)
as begin
```

```
Insert into Manager(ManagerNo, EmpNo) values (@ManagerID, @EmpID)
end
```

Procedure for removal of Manager:

```
create Procedure RemoveManager(@ManagerID int)
as begin
Delete from Manager where ManagerNo = @managerID
End
```

```
exec AddManager 3, 4
```

Screenshot:

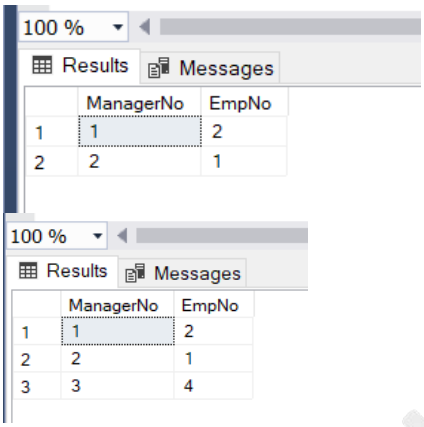


Table Bank:

```
Create Table Bank (
AccNo int not null unique,
BankName int,
Branch varchar (20),
BranchCode int,
EmpNo int not null

constraint PK_AccNo Primary Key (AccNo),
constraint FK_BankEmpNo Foreign Key (EmpNo) References Employee(EmpNo),
)
```

Insertion/Deletion of Bank:

Procedure for insertion in Bank:

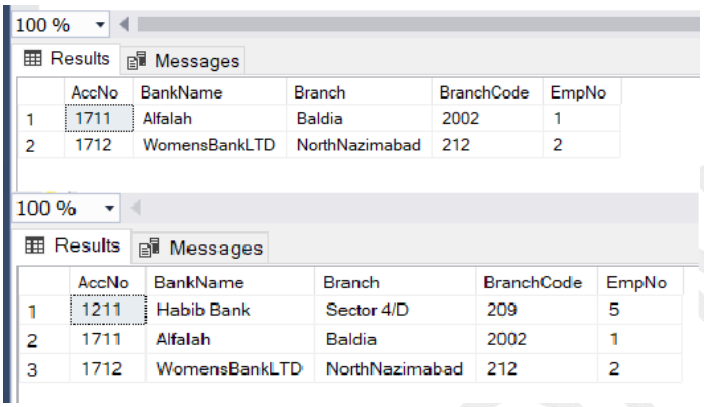
```
create procedure AddBank(@AccNo int, @Name varchar(30), @Branch varchar(40),
@Branchcode varchar(30), @Emp int)
as begin
Insert into Bank(AccNo, BankName, Branch, BranchCode, EmpNo) values (@AccNo, @Name,
@Branch, @Branchcode, @Emp)
```

```
End
```

Procedure for removal of Bank:

```
create Procedure RemoveBank(@AccNo int)
as begin
Delete from Bank where AccNo = @AccNo
end

exec AddBank 1211, 'Habib Bank', 'Sector 4/D', '209', 5
```

Screenshot:



100 %

Results | Messages

	AccNo	BankName	Branch	BranchCode	EmpNo
1	1711	Alfalah	Baldia	2002	1
2	1712	WomensBankLTD	NorthNazimabad	212	2

100 %

Results | Messages

	AccNo	BankName	Branch	BranchCode	EmpNo
1	1211	Habib Bank	Sector 4/D	209	5
2	1711	Alfalah	Baldia	2002	1
3	1712	WomensBankLTD	NorthNazimabad	212	2

Table Bonus:

```
Create Table Bonus (
BonusCode int not null,
HealthInsurance decimal,
Pension decimal,
Allowence decimal,
Medical decimal,

constraint PK_BonusCode Primary Key (BonusCode)
)
```

Changes/Upgradation of Bonus:

```
Alter Table Bonus Add constraint DF_HealthInsurance Default 0 for HealthInsurance
Alter Table Bonus Add constraint DF_Pension Default 0 for Pension
Alter Table Bonus Add constraint DF_Allowence Default 0 for Allowence
Alter Table Bonus Add constraint DF_Medical Default 0 for Medical
```

Insertion/Deletion of Bonus:

Procedure for insertion in Bonus:

```
create procedure AddBonus(@BonusCode int, @Health decimal, @pension decimal, @allow
decimal, @medical decimal)
as begin
Insert into Bonus(BonusCode, HealthInsurance, Pension, Allowence, Medical) values
(@BonusCode , @Health , @pension , @allow , @medical )
end
```

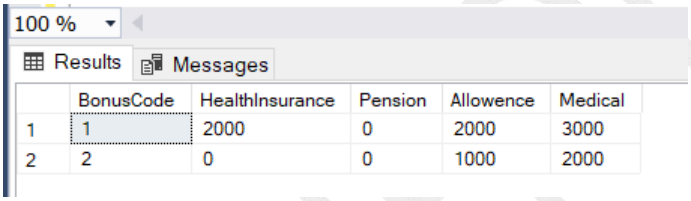
Procedure for removal of Bonus:

```
create Procedure RemoveBonus(@Bonus int)
as begin
Delete from Bonus where BonusCode = @Bonus
End
```

```
exec AddBonus 2, 0, 0, 1000, 2000
```

Screenshot:

	BonusCode	HealthInsurance	Pension	Allowence	Medical
1	1	2000	0	2000	3000



	BonusCode	HealthInsurance	Pension	Allowence	Medical
1	1	2000	0	2000	3000
2	2	0	0	1000	2000

Table Charges:

```
Create Table Charges (
ChargesID int not null,
AbsentCharges decimal,
DisciplinaryCharges decimal,

constraint PK_ChargesID Primary Key (ChargesID)
)
```

Changes/Upgradation of Charges:

```
Alter Table Charges Add constraint DF_AbsentCharges Default 0 for AbsentCharges
Alter Table Charges Add constraint DF_DisciplinaryCharges Default 0 for
DisciplinaryCharges
```

Insertion/Deletion of Charges:

Procedure for insertion in Charges:

```
create procedure Addcharges(@Id int, @charge1 decimal, @charge2 decimal)
as begin
Insert into Charges(ChargesID, AbsentCharges, DisciplinaryCharges) values (@id ,
@charge1 , @charge2)
end
```

Procedure for removal of Charges:

```
create Procedure Removecharges(@id int)
as begin
Delete from charges where ChargesID = @id
end

exec AddCharges 2, 300, 2000
```

Screenshot:

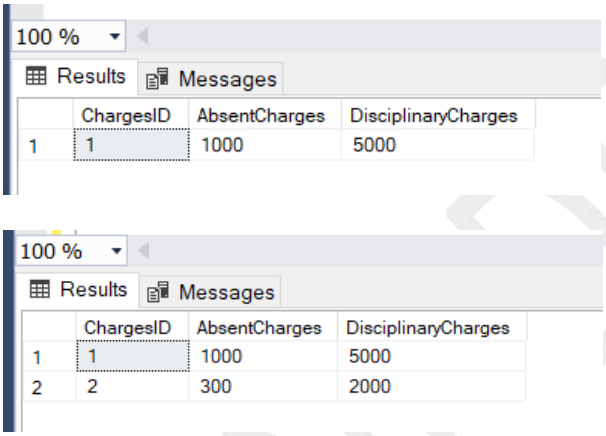


Table Salary:

```
create table Salary (
SalaryID int not null,
SalaryType varchar (25) not null,
PayScale decimal default 0,
PayPerDuration varchar (25),
SalaryTotal decimal,
EmpNo int not null unique,
BonusCode int,
ChargesID int

Constraint PK_SalaryID Primary Key (SalaryID),
Constraint FK_EmpNoSalary Foreign Key (EmpNo) References Employee(EmpNo),
Constraint FK_BonusCodeSalary Foreign Key (BonusCode) References Bonus(BonusCode),
Constraint FK_ChargesIDSalary Foreign Key (ChargesID) References Charges(ChargesID)
)
```

Insertion/Deletion of Salary:

Procedure for insertion in Salary:

```
create procedure AddSalary(@SID int, @SType varchar(30), @PS decimal, @PPD
varchar(20), @emp int, @BC int, @CID int)
as begin
Insert Into Salary(SalaryID, SalaryType, PayScale, PayPerDuration, EmpNo, BonusCode,
ChargesID) values (@SID, @Stype, @PS, @PPD, @emp, @BC, @CID)
Update Salary Set SalaryTotal = (Select HealthInsurance+Pension+Allowence+Medical-
AbsentCharges-DisciplinaryCharges from Bonus, Charges where BonusCode = @BC AND
ChargesID = @CID)+@PS where SalaryID = @SID
End
```

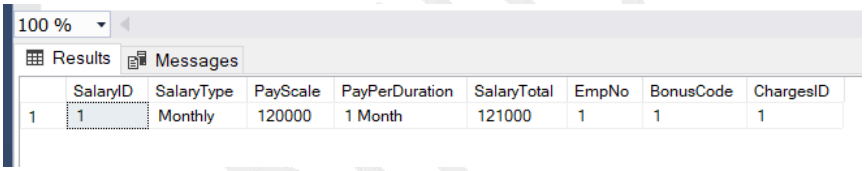
Procedure for removal of Salary:

```
create procedure RemoveSalary(@Emp int)
as begin
Delete from Salary where EmpNo = @emp
End
```

Salary Will be removed on EmployeeNo

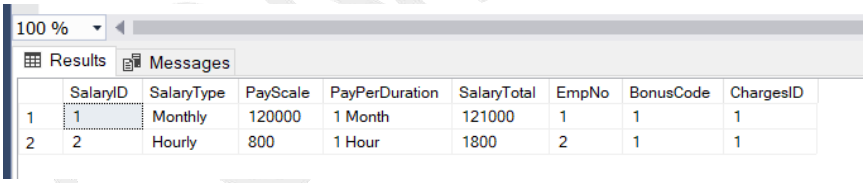
```
exec AddSalary 2, 'Hourly', 800, '1 Hour', 2, 1, 1
```

Screenshot:



100 % | Results | Messages

	SalaryID	SalaryType	PayScale	PayPerDuration	SalaryTotal	EmpNo	BonusCode	ChargesID
1	1	Monthly	120000	1 Month	121000	1	1	1



100 % | Results | Messages

	SalaryID	SalaryType	PayScale	PayPerDuration	SalaryTotal	EmpNo	BonusCode	ChargesID
1	1	Monthly	120000	1 Month	121000	1	1	1
2	2	Hourly	800	1 Hour	1800	2	1	1

Table PaymentTax:

```
Create Table PaymentTax (
PaymentNo int not null,
PaymentType varchar (25),
TransactionTax decimal not null,
PayrollTax decimal,
IncomeTax decimal,
EmpNo int

constraint PK_PaymentNo Primary Key (PaymentNo),
constraint FK_PaymentTaxEmpNo Foreign Key (EmpNo) references Employee(EmpNo)
)
```

Changes/Upgradation of PaymentTax:

```
Alter Table PaymentTax Add constraint DF_TransactionTax Default 0 for TransactionTax
Alter Table PaymentTax Add constraint DF_PayrollTax Default 0 for PayrollTax
Alter Table PaymentTax Add constraint DF_IncomeTax Default 0 for IncomeTax
```

Insertion/Deletion of PaymentTax:

```
Insert Into PaymentTax(PaymentNo,PaymentType, TransactionTax, PayrollTax, IncomeTax,
EmpNo) Values (1,'Bank Transaction', 250, 50, 300,1)
```

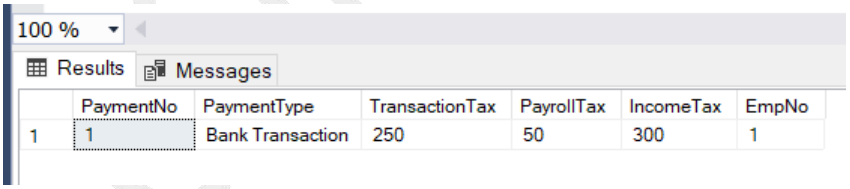
Procedure for insertion in PaymentTax:

```
create procedure AddPaymentTax(@Pno int, @Ptype varchar(30), @Tt decimal, @Pt Decimal,
@It decimal, @emp int)
as begin
Insert Into
PaymentTax(PaymentNo,PaymentType,TransactionTax,PayrollTax,IncomeTax,EmpNo) values
(@Pno, @Ptype, @Tt, @Pt, @It, @emp)
end
```

Procedure for removal of PaymentTax:

```
create procedure RemovePaymentTax(@Pno int)
as begin
Delete From PaymentTax where PaymentNo = @Pno
End

exec AddPaymentTax 2, 'Cash', 0, 50, 350, 4
```

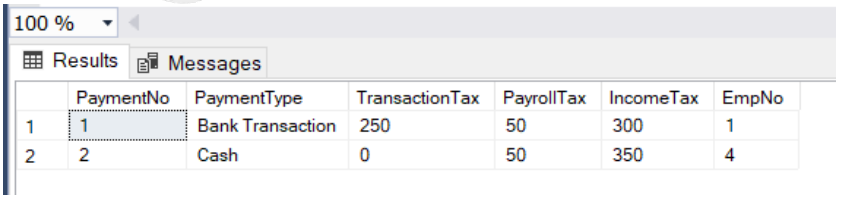
Screenshot:



100 %

Results | Messages

	PaymentNo	PaymentType	TransactionTax	PayrollTax	IncomeTax	EmpNo
1	1	Bank Transaction	250	50	300	1



100 %

Results | Messages

	PaymentNo	PaymentType	TransactionTax	PayrollTax	IncomeTax	EmpNo
1	1	Bank Transaction	250	50	300	1
2	2	Cash	0	50	350	4

Table Leave:

```
Create Table Leave (
```

```
LeaveNo int not null,
StartDate Date,
EndDate Date,
Reason varchar (25),
Status varchar (10),
EmpNo int

constraint PK_LeaveNo Primary Key (LeaveNo),
constraint FK_LeaveEmpNo Foreign Key (EmpNo) references Employee(EmpNo)
)
```

Insertion/Deletion of Leave:

Procedure for insertion in Leave:

```
create procedure AddLeave(@Lno int, @Sdate date, @eDate date, @reason varchar(30),
@status varchar(20), @emp int)
as begin
Insert Into Leave(LeaveNo,StartDate,EndDate,Reason,Status,EmpNo) values (@Lno, @Sdate,
@eDate, @reason, @status, @emp)
end
```

Procedure for removal of Leave:

```
create procedure RemoveLeave(@Lno int)
as begin
Delete From Leave where LeaveNo = @Lno
End

exec AddLeave 1, '2022-07-05', '2022-07-20', 'Sick Leave', 'Active', 2
```

Screenshot:

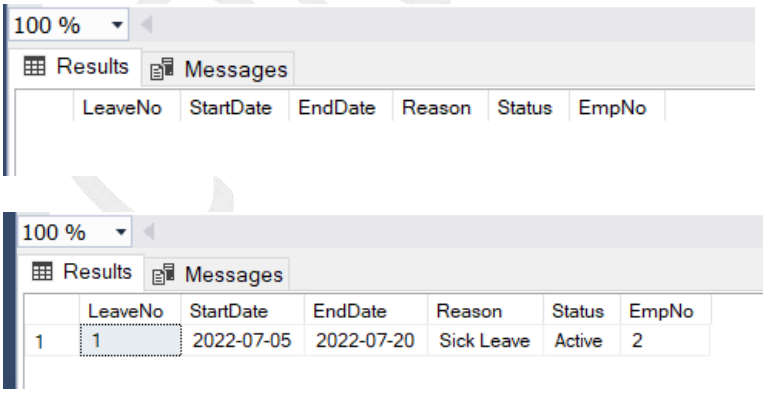


Table PayrollDetail:

```
Create Table PayrollDetail (
PNo int not null unique,
```

```
EmpNo int not null,
DeptNo int not null,
ProjNo int,
SalaryID int not Null,
LeaveNo int,
PaymentNo int not null,
AccNo int,
Date Date not null,
HoursWorked int,
Report varchar (40),
TotalAmmount decimal not null

constraint PK_PNo Primary Key (PNo),
constraint FK_PayrollEmpNo Foreign Key (EmpNo) references Employee(EmpNo),
constraint FK_PayrollDeptNo Foreign Key (DeptNo) references Department(DeptNo),
constraint FK_PayrollProjNo Foreign Key (ProjNo) references Project(ProjNo),
constraint FK_PayrollLeaveNo Foreign Key (LeaveNo) references Leave(LeaveNo),
constraint FK_PayrollPaymentNo Foreign Key (PaymentNo) references
PaymentTax(PaymentNo),
constraint FK_PayrollAccNo Foreign Key (AccNo) references Bank(AccNo)
)
```

Changes/Upgradation of PayrollDetail:

```
Alter Table PayrollDetail Add Constraint FK_PayrollDetailSalaryID Foreign Key
(SalaryID) References Salary(SalaryID)
```

Insertion/Deletion of PayrollDetail:

```
Insert Into PayrollDetail(PNo, EmpNo, DeptNo, ProjNo, SalaryID, PaymentNo, AccNo,
Date, HoursWorked, Report, TotalAmmount) Values (1011, 1, (Select DeptNo from Employee
where EmpNo = 1), (Select ProjNo from Employee where EmpNo = 1), (Select SalaryID from
Salary where EmpNo = 1), (Select PaymentNo from PaymentTax where EmpNo = 1), (Select
AccNo from Bank where EmpNo = 1), '07-04-2022',12, 'Good Code of Conduct', (Select
SalaryTotal from Salary where EmpNo = 1)-(Select TransactionTax+PayrollTax+IncomeTax
from PaymentTax where EmpNo = 1))


Update PayrollDetail Set ProjNo = (Select ProjNo from Employee where EmpNo = 1)
```

Procedure for insertion in Payroll Monthly:

```
create procedure AddPayrollMonthly(@pnoo int, @eno int, @d date, @hw int, @rprt
varchar (50))
as begin
Insert Into PayrollDetail(PNo, EmpNo, DeptNo, ProjNo, SalaryID, LeaveNo, PaymentNo,
AccNo, Date, HoursWorked, Report, TotalAmmount) Values (@pnoo, @eno,(Select DeptNo
from Employee where EmpNo = @eno),(Select ProjNo from Employee where EmpNo =
@eno),(Select SalaryID from Salary where EmpNo = @eno),(Select LeaveNo from Leave
where EmpNo = @eno),(Select PaymentNo from PaymentTax where EmpNo = @eno),(Select
AccNo from Bank where EmpNo = @eno),@d, @hw, @rprt, (Select SalaryTotal from Salary
where EmpNo = @eno)-(Select TransactionTax+PayrollTax+IncomeTax from PaymentTax where
EmpNo = @eno))
end
```

Procedure for insertion in Payroll Weekly:

```
create procedure AddPayrollWeekly(@pnoo int, @eno int, @d date, @hw int, @rprt varchar
(50))
as begin
Insert Into PayrollDetail(PNo, EmpNo, DeptNo, ProjNo, SalaryID, LeaveNo, PaymentNo,
AccNo, Date, HoursWorked, Report, TotalAmmount) Values (@pnoo, @eno,(Select DeptNo
from Employee where EmpNo = @eno),(Select ProjNo from Employee where EmpNo =
@eno),(Select SalaryID from Salary where EmpNo = @eno),(Select LeaveNo from Leave
where EmpNo = @eno),(Select PaymentNo from PaymentTax where EmpNo = @eno),(Select
AccNo from Bank where EmpNo = @eno),@d, @hw, @rprt, (Select SalaryTotal from Salary
where EmpNo = @eno)*7-(Select TransactionTax+PayrollTax+IncomeTax from PaymentTax
where EmpNo = @eno))
end
```

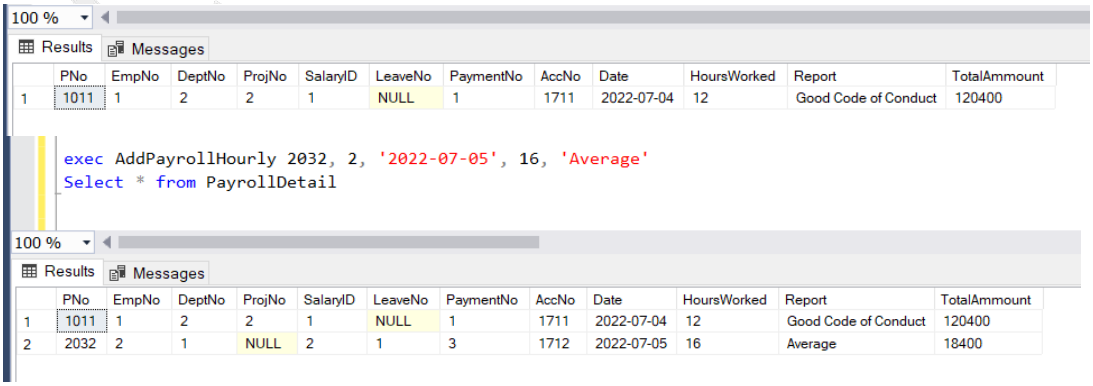
Procedure for insertion in Payroll Hourly:

```
create procedure AddPayrollHourly(@pnoo int, @eno int, @d date, @hw int, @rprt varchar
(50))
as begin
Insert Into PayrollDetail(PNo, EmpNo, DeptNo, ProjNo, SalaryID, LeaveNo, PaymentNo,
AccNo, Date, HoursWorked, Report, TotalAmmount) Values (@pnoo, @eno,(Select DeptNo
from Employee where EmpNo = @eno),(Select ProjNo from Employee where EmpNo =
@eno),(Select SalaryID from Salary where EmpNo = @eno),(Select LeaveNo from Leave
where EmpNo = @eno),(Select PaymentNo from PaymentTax where EmpNo = @eno),(Select
AccNo from Bank where EmpNo = @eno),@d, @hw, @rprt, ((Select SalaryTotal from Salary
where EmpNo = @eno)-(Select TransactionTax+PayrollTax+IncomeTax from PaymentTax where
EmpNo = @eno))*@Hw)
end
```

Procedure for removal of Payroll:

```
create procedure RemovePayrollDetail (@pno int)
as begin
delete from PayrollDetail where Pno = @Pno
end
```

Screenshot:



```
exec AddPayrollWeekly 2032, 2, '2022-07-05', 16, 'Average'
Select * from PayrollDetail
```

100 %

Results | Messages

	PNo	EmpNo	DeptNo	ProjNo	SalaryID	LeaveNo	PaymentNo	AccNo	Date	HoursWorked	Report	TotalAmmount
1	1011	1	2	2	1	NULL	1	1711	2022-07-04	12	Good Code of Conduct	120400
2	2032	2	1	NULL	2	1	3	1712	2022-07-05	16	Average	11950

```
exec AddPayrollMonthly 2032, 1, '2022-07-05', 16, 'Average'
Select * from PayrollDetail
```

100 %

Results | Messages

	PNo	EmpNo	DeptNo	ProjNo	SalaryID	LeaveNo	PaymentNo	AccNo	Date	HoursWorked	Report	TotalAmmount
1	1011	1	2	2	1	NULL	1	1711	2022-07-04	12	Good Code of Conduct	120400
2	2032	1	2	2	1	NULL	1	1711	2022-07-05	16	Average	120400

Table PayDate:

```
create table PayDate (
Date Date,
PNo int

Constraint PK_DatePayDate Primary Key(Date),
Constraint FK_PNoPayDate Foreign Key(PNo) References PayrollDetail(PNo)
)
```

Insertion/Deletion of PayDate:

```
Insert Into PayDate(Date, PNo) Values ('2022-07-04', 1011)
```

Procedure for insertion in PayDate:

```
create procedure AddPayDate(@D date, @Pno int)
as begin
Insert Into PayDate(Date, PNo) values (@D, @Pno)
end
```

Procedure for removal of PayDate:

```
create procedure RemovePayDate(@Pno int)
as begin
Delete From Paydate where Pno = @Pno
end
```

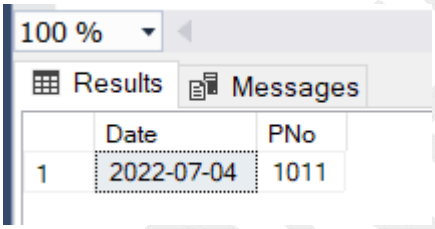
Function for retrieving PayDate using Employee No:

```
create function ShowPayDateEmployee(@Emp int)
returns table as
return
(
Select pd.Date, p.PNo, e.EmpNo, EmpName, TotalAmmount
from PayDate pd, PayrollDetail p, Employee e
where pd.Date = p.Date and p.EmpNo = e.EmpNo AND p.EmpNo = @emp
)


SELECT * FROM ShowPayDateEmployee(1)
```

Function for retrieving PayDate using Date:

```
create function ShowPayDate(@D date)
returns table as
return
(
Select pd.Date, p.PNo, e.EmpNo, EmpName, TotalAmmount
from PayDate pd, PayrollDetail p, Employee e
where pd.Date = p.Date and p.EmpNo = e.EmpNo AND pd.Date = @D
)

SELECT * FROM ShowPayDate('2022-07-04')
```

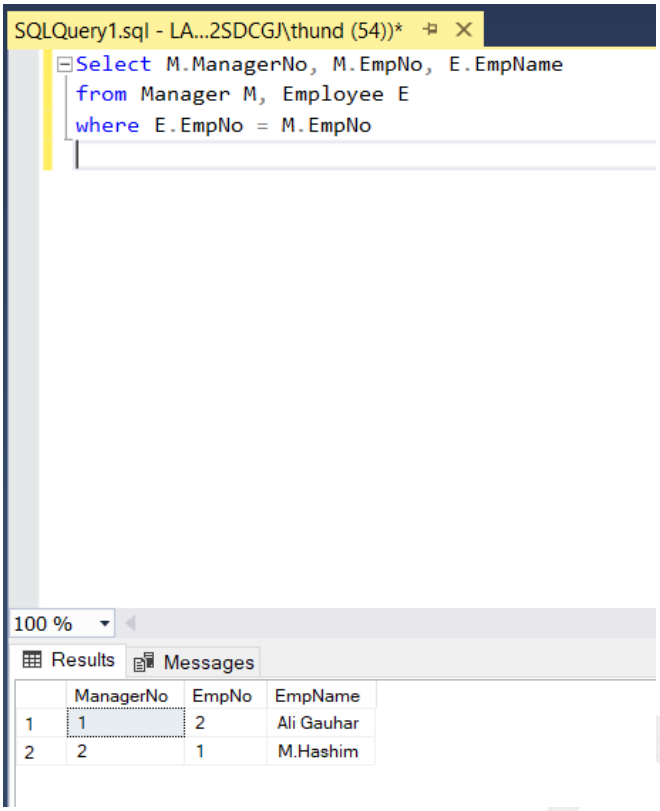
Screenshot:



Queries Tested on Database

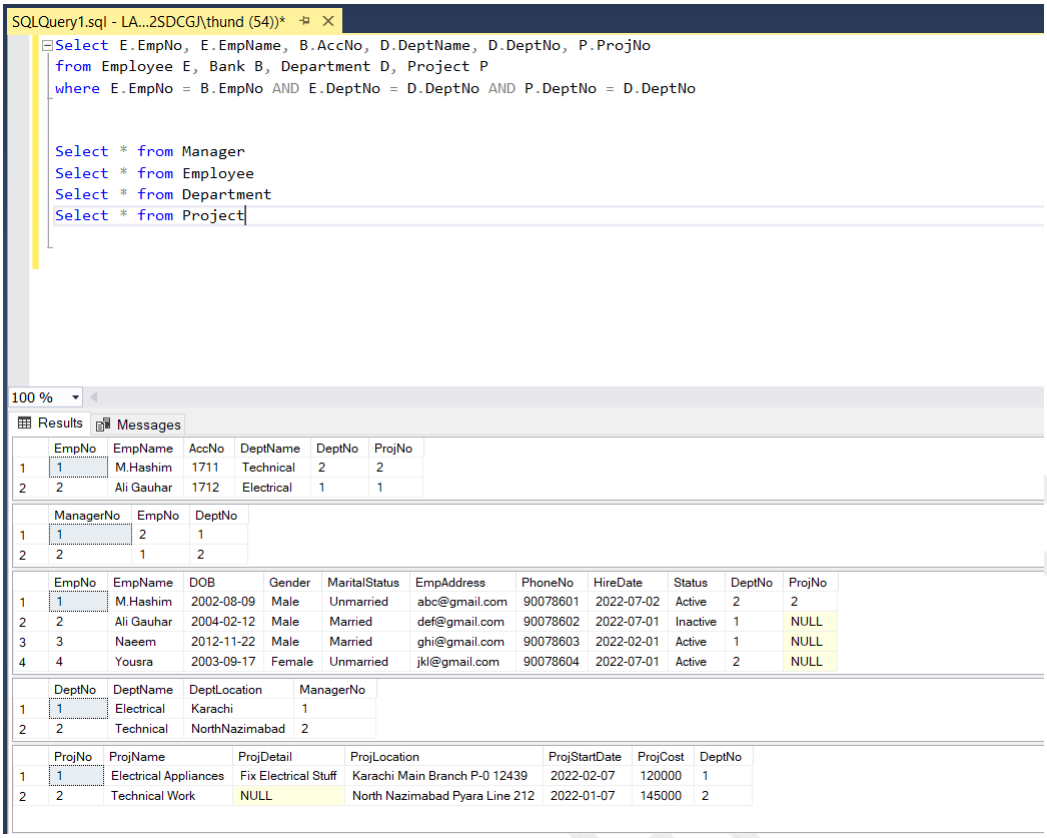
Testing Employee, Manager Relationship

```
Select M.ManagerNo, M.EmpNo, E.EmpName
from Manager M, Employee E
where E.EmpNo = M.EmpNo
```



Testing Manager, Employee, Department and Project Relationship:

```
Select E.EmpNo, E.EmpName, B.AccNo, D.DeptName, D.DeptNo, P.ProjNo
from Employee E, Bank B, Department D, Project P
where E.EmpNo = B.EmpNo AND E.DeptNo = D.DeptNo AND P.DeptNo = D.DeptNo
```



```
SQLQuery1.sql - LA...2SDCGJ\thund (54))*
Select E.EmpNo, E.EmpName, B.AccNo, D.DeptName, D.DeptNo, P.ProjNo
from Employee E, Bank B, Department D, Project P
where E.EmpNo = B.EmpNo AND E.DeptNo = D.DeptNo


Select * from Manager
Select * from Employee
Select * from Department
Select * from Project
```

100 %

Results | Messages

	EmpNo	EmpName	AccNo	DeptName	DeptNo	ProjNo
1	1	M.Hashim	1711	Technical	2	2
2	2	Ali Gauhar	1712	Electrical	1	1

	ManagerNo	EmpNo	DeptNo
1	1	2	1
2	2	1	2

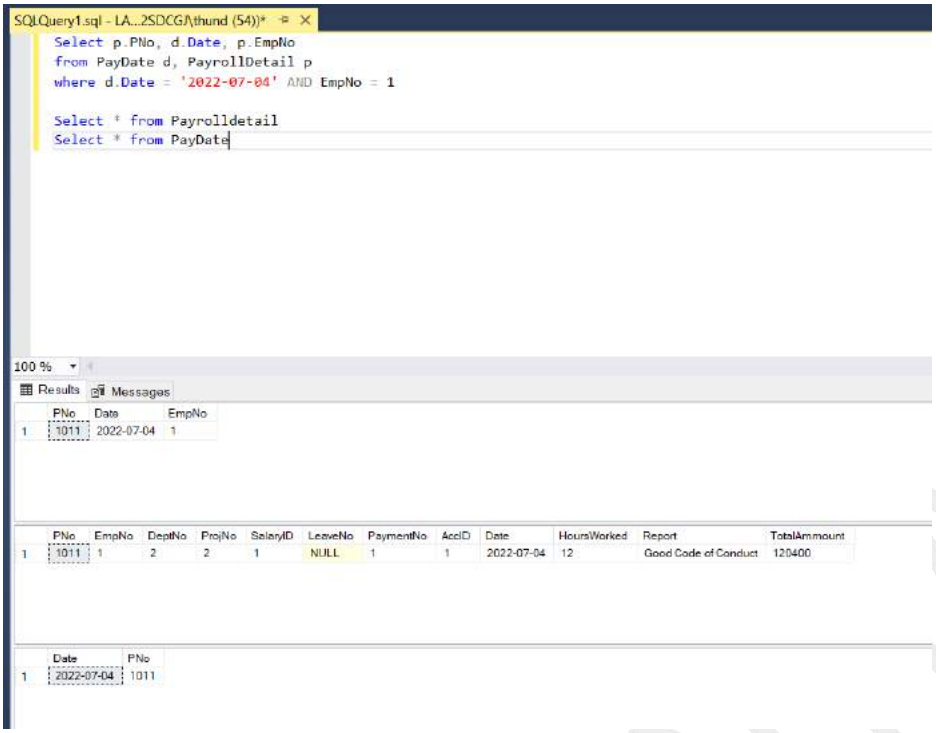
	EmpNo	EmpName	DOB	Gender	MaritalStatus	EmpAddress	PhoneNo	HireDate	Status	DeptNo	ProjNo
1	1	M.Hashim	2002-08-09	Male	Unmarried	abc@gmail.com	90078601	2022-07-02	Active	2	2
2	2	Ali Gauhar	2004-02-12	Male	Married	def@gmail.com	90078602	2022-07-01	Inactive	1	NULL
3	3	Naeem	2012-11-22	Male	Married	ghi@gmail.com	90078603	2022-02-01	Active	1	NULL
4	4	Yousra	2003-09-17	Female	Unmarried	jkl@gmail.com	90078604	2022-07-01	Active	2	NULL

	DeptNo	DeptName	DeptLocation	ManagerNo
1	1	Electrical	Karachi	1
2	2	Technical	NorthNazimabad	2

	ProjNo	ProjName	ProjDetail	ProjLocation	ProjStartDate	ProjCost	DeptNo
1	1	Electrical Appliances	Fix Electrical Stuff	Karachi Main Branch P-0 12439	2022-02-07	120000	1
2	2	Technical Work	NULL	North Nazimabad Pyara Line 212	2022-01-07	145000	2

Testing PayDate and Payroll Relationship

```
Select p.PNo, d.Date, p.EmpNo
from PayDate d, PayrollDetail p
where d.Date = '2022-07-04' AND EmpNo = 1
```



Testing PayDate with a date that has No Payroll Detail in it