```
CREATE TABLE addresses (
address_ID integer,
address_line_one varchar(15),
address_line_two varchar(15),
city varchar(15),
state varchar(2),
zip varchar(10),
country varchar(50),
CONSTRAINT address_pkey PRIMARY KEY (address_ID)
);

CREATE TABLE paygrade (
paygrade_ID integer,
paygrade integer,
pay_rate integer,
overtime_rate integer,
CONSTRAINT paygrade_pkey PRIMARY KEY (paygrade_ID)
);

CREATE SEQUENCE department_id_seq;

CREATE TABLE department (
department_ID integer,
department_name varchar,
CONSTRAINT department_pkey PRIMARY KEY (department_ID)
);

ALTER TABLE department
ALTER COLUMN department_id SET DEFAULT nextval('department_id_seq');

CREATE SEQUENCE employee_id_seq;

CREATE TABLE employee (
emp_ID integer, manager_ID integer, address_ID integer, paygrade_ID integer, department_ID
integer,
first_name varchar(30) NOT NULL, middle_name varchar(30), last_name varchar(30) NOT
NULL,
phone_number integer,
email varchar(50),
ssn integer,
birth_date date,
username varchar (50),
password_ varchar(50),
```

```
position_name varchar(50),
CONSTRAINT emp_pkey PRIMARY KEY (emp_ID),
CONSTRAINT emp_fkey1 FOREIGN KEY (manager_ID) REFERENCES employee (emp_ID)
ON DELETE CASCADE ON UPDATE CASCADE,
CONSTRAINT emp_fkey2 FOREIGN KEY (address_ID) REFERENCES addresses
(address_ID)
ON DELETE CASCADE
ON UPDATE CASCADE,
CONSTRAINT emp_fkey3 FOREIGN KEY (paygrade_ID) REFERENCES paygrade
(paygrade_ID)
ON DELETE CASCADE
ON UPDATE CASCADE,
CONSTRAINT emp_fkey4 FOREIGN KEY (department_ID) REFERENCES department
(department_ID)
ON DELETE CASCADE
ON UPDATE CASCADE
);

ALTER TABLE employee
ALTER COLUMN emp_id SET DEFAULT nextval('employee_id_seq');

CREATE TABLE time_punch(
time_punch_ID integer, emp_ID integer,
clock_in timestamp,
clock_out timestamp,
overtime_hours decimal,
total_hours decimal,
CONSTRAINT time_punch_pkey PRIMARY KEY (time_punch_ID),
CONSTRAINT time_punch_fkey1 FOREIGN KEY (emp_ID) REFERENCES employee
(emp_ID)
ON DELETE CASCADE ON UPDATE CASCADE
);

CREATE TABLE time_off(
time_req_ID integer, emp_ID integer,
start_date date,
end_date date,
comments_ varchar,
status varchar,
CONSTRAINT time_req_pkey PRIMARY KEY (time_req_ID),
CONSTRAINT time_req_fkey1 FOREIGN KEY (emp_ID) REFERENCES employee (emp_ID)
ON DELETE CASCADE ON UPDATE CASCADE
);
```

```
CREATE TABLE salary(
salary_ID integer, emp_ID integer, paygrade_ID integer, time_punch_ID integer,
base_salary money,
overtime_pay money,
gross_salary money,
CONSTRAINT salary_pkey PRIMARY KEY (salary_ID),
CONSTRAINT salary_fkey1 FOREIGN KEY (emp_ID) REFERENCES employee (emp_ID)
ON DELETE CASCADE ON UPDATE CASCADE,
CONSTRAINT salary_fkey2 FOREIGN KEY (paygrade_ID) REFERENCES paygrade
(paygrade_ID)
ON DELETE CASCADE ON UPDATE CASCADE,
CONSTRAINT salary_fkey3 FOREIGN KEY (time_punch_ID) REFERENCES time_punch
(time_punch_ID)
ON DELETE CASCADE ON UPDATE CASCADE
);

CREATE TABLE admin (
admin_ID integer, emp_ID integer,
email varchar,
password_ varchar,
CONSTRAINT admin_pkey PRIMARY KEY (admin_ID),
CONSTRAINT admin_fkey1 FOREIGN KEY (emp_ID) REFERENCES employee (emp_ID)
ON DELETE CASCADE ON UPDATE CASCADE
);

CREATE TABLE deduction(
deduction_ID integer,
federal_WH decimal,
medicare decimal,
social_security decimal,
penn_state_WH decimal,
township_tax decimal,
pennsylvania_ULHCWF decimal,
total_deduction decimal,
CONSTRAINT deduction_pkey PRIMARY KEY (deduction_ID)
);

CREATE TABLE payroll (
payroll_ID integer, emp_ID integer, salary_ID integer, deduction_ID integer,
net_salary money,
CONSTRAINT payroll_pkey PRIMARY KEY (payroll_ID),
CONSTRAINT emp_fkey1 FOREIGN KEY (emp_ID) REFERENCES employee (emp_ID)
ON DELETE CASCADE ON UPDATE CASCADE,
CONSTRAINT emp_fkey2 FOREIGN KEY (salary_ID) REFERENCES salary (salary_ID)
```

```
ON DELETE CASCADE
ON UPDATE CASCADE,
CONSTRAINT emp_fkey3 FOREIGN KEY (deduction_ID) REFERENCES deduction
(deduction_ID)
ON DELETE CASCADE
ON UPDATE CASCADE
);


INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state, zip, country)
VALUES ('1','123 Main st','apt 1','King of Prussia','CA','11223','USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
VALUES ('2','124 Oak St','apt 10','Phoenexville', 'MI','12345', 'USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
VALUES ('3','23 Maple Ave','Suite 20','Homestead', 'FL','33031', 'USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
VALUES ('4','29 Elm street','unit 25','Rivertown', 'TX','90124', 'USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
VALUES ('5','64 Cedar Dr','Suite 5B','Lynn Ave', 'CA','19458', 'USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
VALUES ('6','Blantyre rd','room 12','Harbor city', 'MI','90896', 'USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
VALUES ('7','634 Cenur Drive','Suite 1000','Riverdale', 'IL','78907', 'USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
VALUES ('8','23 Blue lane','Unit 34','Townsville', 'FL','33039', 'USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
VALUES ('9','44 Fast lane','Unit 3','Snowville', 'FL','32045', 'USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
VALUES ('10','950 N 63rd rd','Unit 10','Philadelphia', 'PA','19983', 'USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
VALUES ('11','110 Alex rd','Unit 3','Perk', 'MA','12403', 'USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
```

```
VALUES ('12','13 Blantyre rd','room 6','Boston', 'MA','12063', 'USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
VALUES ('13','2207 Fayette rd','Unit 34','King of Prussia', 'PA','19873', 'USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
VALUES ('14','21 King road','Unit 51','King Of Prussia', 'PA','19403', 'USA');
INSERT INTO addresses
(address_ID,address_line_one,address_line_two,city,state,zip, country)
VALUES ('15','32 Eagle rd','Apartment 23','Wayne', 'PA','319434', 'USA');


INSERT INTO paygrade
(paygrade_ID, paygrade, pay_rate, overtime_rate)
VALUES (1000, 1, 20, 30);
INSERT INTO paygrade
(paygrade_ID, paygrade, pay_rate, overtime_rate)
VALUES (1001, 2, 30, 45);
INSERT INTO paygrade
(paygrade_ID, paygrade, pay_rate, overtime_rate)
VALUES (1002, 3, 40, 60);
INSERT INTO paygrade
(paygrade_ID, paygrade, pay_rate, overtime_rate)
VALUES (1003, 4, 50, 75);

INSERT INTO department
(department_ID, department_name)
VALUES (2001, 'Accounting');
INSERT INTO department
(department_ID, department_name)
VALUES (2002, 'HR');
INSERT INTO department
(department_ID, department_name)
VALUES (2003, 'Sales&Marketing');
INSERT INTO department
(department_ID, department_name)
VALUES (2004, 'IT');
INSERT INTO department
(department_ID, department_name)
VALUES (2005, 'CustomerService');

CREATE OR REPLACE FUNCTION calculate_hours()
        RETURNS TRIGGER
        LANGUAGE plpgsql
```

```
        AS $$
                BEGIN
                NEW.total_hours := EXTRACT(EPOCH FROM (NEW.clock_out - NEW.clock_in))
/ 3600.0;
        IF NEW.total_hours > 8.0 THEN
                NEW.overtime_hours := NEW.total_hours - 8.0;
        ELSE
                 NEW.overtime_hours := 0.0;
        END IF;
   RETURN NEW;
END;
$$;

CREATE TRIGGER calculate_hours_trigger
BEFORE INSERT ON time_punch
FOR EACH ROW
EXECUTE FUNCTION calculate_hours();


 INSERT INTO employee
(emp_ID,manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name )
VALUES (3000, NULL, 1, 1003, 2002, 'Caroline', 'Lynn', 'Demeno', 610325670,
'carolinedemeno@icloud.com', 23456765, '1997-06-30', 'carolinedemeno','password123'
,'Manager' );
INSERT INTO employee
(emp_ID,manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name )
VALUES (3001, NULL, 2, 1002, 2001, 'Alice', 'Lyv', 'Dent', 610800982, 'alicedent@gmail.com',
123456789, '1983-03-29', 'alicedent','passwordsecure' ,'Manager' );
INSERT INTO employee
(emp_ID,manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name )
VALUES (3002, NULL, 3, 1002, 2003, 'Nick', 'Robert', 'Howel', 267300527,
'nickhowel@icloud.com', 765435430, '1994-10-03', 'nickhowel','passwordsecure123' ,'Manager'
);
INSERT INTO employee
(emp_ID,manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name )
VALUES (3003, NULL, 4, 1003, 2004, 'Mark', 'Bob', 'Dennis', 610980997,
'markbob@gmail.com', 856879000, '1999-11-24', 'markdennis','secure000' ,'Manager' );
INSERT INTO employee
(emp_ID,manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name )
```

```
VALUES (3004, NULL, 5, 1002, 2005, 'Gracelynn', 'vicky', 'Bonface', 267532465,
'gracelynnbonface@gmail.com', 225634594, '1986-01-31', 'gracelynnbon','verysecure534'
,'Manager' );
INSERT INTO employee
(emp_ID,manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name )
VALUES (3005, 3000, 6, 1001, 2002, 'David', 'Dan', 'Milton', 610334455,
'davidmiller@icloud.com', 222333444, '1995-04-30', 'davidmiller','securepass' ,'HR Coordinator'
);
INSERT INTO employee
(emp_ID,manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name )
VALUES (3006, 3000, 7, 1000, 2002, 'Isabella', 'Cathy', 'Kent', 610100200,
'isabellacathy@yahoo.com', 444555666, '1990-05-15', 'isabellacathy','password456'
,'Recruitment coordinator' );
INSERT INTO employee
(emp_ID,manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name )
VALUES (3007, 3001, 8, 1000, 2001, 'Clare', 'Mulei', 'Taylor', 610900345,
'claretaylor@yahoo.com', 111555095, '1980-06-30', 'claretaylor','taylorpass' ,'Accoutant' );
INSERT INTO employee
(emp_ID,manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name )
VALUES (3008, 3001, 9, 1001, 2001, 'Courtney', 'Lynn', 'Denzel', 286940535,
'courtneyden@icloud.com', 209098765, '1988-12-30', 'courtneydenz','123secure', 'Accounant' );
INSERT INTO employee
(emp_ID, manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name)
VALUES (3009, 3002, 10, 1002, 2003, 'Michael', 'Dan', 'Smith', 610543514,
'michaelsmith@yahoo.com', 123456777, '1985-09-15', 'michaelsmith', 'securepass321', 'Sales
Representative');
INSERT INTO employee
(emp_ID, manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name)
VALUES (3010, 3002, 11, 1001, 2003, 'Emily', 'Rose', 'Davis', 620789567,
'emily.davis@gmail.com', 980654321, '1990-04-08', 'emilyrose', 'pass123emily', 'Marketing
Representitive');
INSERT INTO employee
(emp_ID, manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name)
VALUES (3011, 3003, 12, 1002, 2004, 'Christopher', 'Michael', 'Jackson', 610876444,
'chrisjackson@gmail.com', 876754323, '1988-04-18', 'chrisjackson', 'securepass779', 'IT
specialist');
INSERT INTO employee
```

```
(emp_ID, manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name)
VALUES (3012, 3003, 13, 1001, 2004, 'Sophia', 'Richie', 'Walker', 217976543,
'sophiarichie@gmail.com', 198767876, '1993-07-25', 'sophiarichie', 'pass456secure', 'Software
engineer');
INSERT INTO employee
(emp_ID, manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name)
VALUES (3013, 3004, 14, 1000, 2005, 'Beyonce', 'Knowls', 'Hill', 610678901,
'beyoncehill@yahoo.com', 345434565, '1987-02-10', 'beyoncehill', 'hillsecure123', 'Customer
Service Reprisentitive');
INSERT INTO employee
(emp_ID, manager_ID, address_ID, paygrade_ID, department_ID, first_name, middle_name,
last_name, phone_number, email, ssn, birth_date, username, password_, position_name)
VALUES (3014, 3004, 15, 1000, 2005, 'Rihanna', 'Mac', 'Miller', 267043684,
'rihanna.miller@gmail.com', 763210987, '1995-04-07', 'rihannamiller', 'securerihanna99',
'Customer Service Reprisentitive');

 INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4000, 3000, '2024-01-22 09:00:00', '2024-01-22 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4001, 3000, '2024-01-23 09:15:00', '2024-01-23 17:00:00', 0, 7.75);------
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4002, 3000, '2024-01-24 08:45:00', '2024-01-24 16:45:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4003, 3000, '2024-01-25 09:30:00', '2024-01-25 18:00:00', 0.5, 8.5);----
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4004, 3000, '2024-01-26 09:00:00', '2024-01-26 17:00:00', 0, 8);


 INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4005, 3001, '2024-01-22 09:00:00', '2024-01-22 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4006, 3001, '2024-01-23 09:00:00', '2024-01-23 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4007, 3001, '2024-01-24 08:45:00', '2024-01-24 16:45:00', 0, 8);
```

```
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4008, 3001, '2024-01-25 08:45:00', '2024-01-25 16:45:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4009, 3001, '2024-01-26 09:00:00', '2024-01-26 17:00:00', 0, 8);

 INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4010, 3002, '2024-01-22 09:00:00', '2024-01-22 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4011, 3002, '2024-01-23 09:00:00', '2024-01-23 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4012, 3002, '2024-01-24 08:45:00', '2024-01-24 16:45:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4013, 3002, '2024-01-25 08:00:00', '2024-01-25 16:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4014, 3002, '2024-01-26 09:00:00', '2024-01-26 17:00:00', 0, 8);


 INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4015, 3003, '2024-01-22 09:00:00', '2024-01-22 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4016, 3003, '2024-01-23 09:00:00', '2024-01-23 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4017, 3003, '2024-01-24 09:00:00', '2024-01-24 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4018, 3003, '2024-01-25 09:00:00', '2024-01-25 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4019, 3003, '2024-01-26 09:00:00', '2024-01-26 17:00:00', 0, 8);


 INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4020, 3004, '2024-01-22 08:45:00', '2024-01-22 16:45:00', 0, 8);
```

```
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4021, 3004, '2024-01-23 08:45:00', '2024-01-23 16:45:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4022, 3004, '2024-01-24 08:54:00', '2024-01-24 16:45:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4023, 3004, '2024-01-25 08:45:00', '2024-01-25 16:45:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4024, 3004, '2024-01-26 08:45:00', '2024-01-26 16:45:00', 0, 8);

/*Time punch for employees*/


INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4025, 3005, '2024-01-22 09:00:00', '2024-01-22 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4026, 3005, '2024-01-23 09:00:00', '2024-01-23 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4027, 3005, '2024-01-24 09:00:00', '2024-01-24 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4028, 3005, '2024-01-25 09:00:00', '2024-01-25 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4029, 3005, '2024-01-26 09:00:00', '2024-01-26 17:00:00', 0, 8);



INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4030, 3006, '2024-01-22 09:00:00', '2024-01-22 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4031, 3006, '2024-01-23 08:30:00', '2024-01-23 17:00:00', 0.5, 8.5);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4032, 3006, '2024-01-24 08:30:00', '2024-01-24 17:00:00', 0.5, 8.5);
INSERT INTO time_punch
```

```
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4033, 3006, '2024-01-25 08:30:00', '2024-01-25 17:00:00', 0.5, 8.5);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4034, 3006, '2024-01-26 08:30:00', '2024-01-26 17:00:00', 0.5, 8.5);


INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4035, 3007, '2024-01-22 09:00:00', '2024-01-22 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4036, 3007, '2024-01-23 09:00:00', '2024-01-23 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4037, 3007, '2024-01-24 09:00:00', '2024-01-24 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4038, 3007, '2024-01-25 09:00:00', '2024-01-25 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4039, 3007, '2024-01-26 09:00:00', '2024-01-26 17:00:00', 0, 8);



 INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4040, 3008, '2024-01-22 08:00:00', '2024-01-22 16:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4041, 3008, '2024-01-23 08:00:00', '2024-01-23 16:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4042, 3008, '2024-01-24 08:00:00', '2024-01-24 16:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4043, 3008, '2024-01-25 08:00:00', '2024-01-25 16:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4044, 3008, '2024-01-26 08:00:00', '2024-01-26 16:00:00', 0, 8);


INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
```

```
VALUES (4045, 3009, '2024-01-22 09:15:00', '2024-01-22 17:00:00', 0, 7.45);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4046, 3009, '2024-01-23 09:30:00', '2024-01-23 17:00:00', 0, 7.30);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4047, 3009, '2024-01-24 09:00:00', '2024-01-24 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4048, 3009, '2024-01-25 10:00:00', '2024-01-25 17:00:00', 0, 7);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4049, 3009, '2024-01-26 09:15:00', '2024-01-26 17:00:00', 0, 7.45);

 INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4050, 3010, '2024-01-22 09:00:00', '2024-01-22 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4051, 3010, '2024-01-23 09:00:00', '2024-01-23 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4052, 3010, '2024-01-24 09:00:00', '2024-01-24 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4053, 3010, '2024-01-25 09:00:00', '2024-01-25 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4054, 3010, '2024-01-26 09:00:00', '2024-01-26 17:00:00', 0, 8);


 INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4055, 3011, '2024-01-22 09:00:00', '2024-01-22 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4056, 3011, '2024-01-23 09:00:00', '2024-01-23 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4057, 3011, '2024-01-24 09:00:00', '2024-01-24 17:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4058, 3011, '2024-01-25 09:00:00', '2024-01-25 17:00:00', 0, 8);
INSERT INTO time_punch
```

```
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4059, 3011, '2024-01-26 09:00:00', '2024-01-26 17:00:00', 0, 8);


INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4060, 3012, '2024-01-22 08:00:00', '2024-01-22 16:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4061, 3012, '2024-01-23 08:00:00', '2024-01-23 16:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4062, 3012, '2024-01-24 08:00:00', '2024-01-24 16:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4063, 3012, '2024-01-25 08:00:00', '2024-01-25 16:00:00', 0, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4064, 3012, '2024-01-26 08:00:00', '2024-01-26 16:00:00', 0, 8);


 INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4065, 3013, '2024-01-22 08:00:00', '2024-01-22 18:00:00', 2, 10);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4066, 3013, '2024-01-23 09:00:00', '2024-01-23 17:00:00', 2, 10);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4067, 3013, '2024-01-24 09:00:00', '2024-01-24 17:00:00', 2, 10);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4068, 3013, '2024-01-25 09:00:00', '2024-01-25 17:00:00', 2, 10);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4069, 3013, '2024-01-26 09:00:00', '2024-01-26 17:00:00', 2, 10);


 INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4070, 3014, '2024-01-22 08:30:00', '2024-01-22 17:00:00', 0.5, 8);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4071, 3014, '2024-01-23 08:30:00', '2024-01-23 17:00:00', 0.5, 8.5);
```

```
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4072, 3014, '2024-01-24 08:30:00', '2024-01-24 17:00:00', 0.5, 8.5);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
VALUES (4073, 3014, '2024-01-25 08:30:00', '2024-01-25 17:00:00', 0.5, 8.5);
INSERT INTO time_punch
(time_punch_ID, emp_ID, clock_in, clock_out, overtime_hours, total_hours)
 VALUES (4074, 3014, '2024-01-26 08:30:00', '2024-01-26 17:00:00', 0.5, 8.5);


 INSERT INTO time_off
(time_req_ID, emp_ID, start_date, end_date, comments_, status)
VALUES (5000, 3006, '2024-04-02', '2024-04-10', 'Birthday', 'Approved');

INSERT INTO time_off
(time_req_ID, emp_ID, start_date, end_date, comments_, status)
VALUES (5001, 3009, '2024-01-28', '2024-01-29', 'Personal', 'Approved');

INSERT INTO time_off
(time_req_ID, emp_ID, start_date, end_date, comments_, status)
VALUES (5002, 3010, '2024-03-10', '2024-03-11', 'Medical', 'Approved');

INSERT INTO time_off
(time_req_ID, emp_ID, start_date, end_date, comments_, status)
VALUES (5003, 3014, '2024-06-05', '2024-06-15', 'Vacation', 'Pending');

INSERT INTO time_off
(time_req_ID, emp_ID, start_date, end_date, comments_, status)
VALUES (5004, 3014, '2024-02-05', '2024-02-09', 'Vacation', 'Pending');

INSERT INTO time_off
(time_req_ID, emp_ID, start_date, end_date, comments_, status)
VALUES (5005, 3006, '2024-05-01', '2024-05-08', 'Vacation', 'Pending');

INSERT INTO time_off
(time_req_ID, emp_ID, start_date, end_date, comments_, status)
VALUES (5006, 3006, '2024-07-01', '2024-07-08', 'Vacation', 'Pending');

INSERT INTO time_off
(time_req_ID, emp_ID, start_date, end_date, comments_, status)
VALUES (5007, 3006, '2024-09-01', '2024-09-13', 'Vacation', 'Pending');
```

```
INSERT INTO admin
(admin_ID, emp_ID, email, password_)
VALUES (6000, 3000, 'admin_hr@gmail.com', 'Pc@$1024');

INSERT INTO admin
(admin_ID, emp_ID, email, password_)
VALUES (6001, 3003, 'admin_IT@gmail.com', 'Pc@$1124');

 CREATE OR REPLACE FUNCTION salary_calculation()
        RETURNS TRIGGER
        LANGUAGE plpgsql
        AS
        $$
                DECLARE
                base_salary MONEY;
                overtime_pay MONEY;
                gross_salary MONEY;
                BEGIN
                        SELECT pg.pay_rate * (tp.total_hours - tp.overtime_hours),
        pg.overtime_rate * tp.overtime_hours
                INTO base_salary, overtime_pay
   FROM
      paygrade pg
      JOIN employee e ON e.paygrade_ID = pg.paygrade_ID
      JOIN time_punch tp ON tp.emp_ID = e.emp_ID
   WHERE
      e.emp_ID = NEW.emp_ID
      AND tp.time_punch_ID = NEW.time_punch_ID;

   gross_salary = base_salary + overtime_pay;

   NEW.base_salary = base_salary;
   NEW.overtime_pay = overtime_pay;
   NEW.gross_salary = gross_salary;

   RETURN NEW;
        END;
$$;

CREATE TRIGGER calculate_salary
BEFORE INSERT ON salary
FOR EACH ROW
EXECUTE FUNCTION salary_calculation();
```

```
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (1, 3003, 1003, 4015);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (2, 3003, 1003, 4016);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (3, 3003, 1003, 4017);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (4, 3003, 1003, 4018);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (5, 3003, 1003, 4019);

INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (6, 3001, 1002, 4005);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (7, 3001, 1002, 4006);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (8, 3001, 1002, 4007);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (9, 3001, 1002, 4008);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (10, 3001, 1002, 4009);

INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (11, 3002, 1002, 4010);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (12, 3002, 1002, 4011);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (13, 3002, 1002, 4012);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (14, 3002, 1002, 4013);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (15, 3002, 1002, 4014);

INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (16, 3004, 1002, 4020);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (17, 3004, 1002, 4021);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (18, 3004, 1002, 4022);
```

```
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (19, 3004, 1002, 4023);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (20, 3004, 1002, 4024);

INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (21, 3005, 1001, 4025);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (22, 3005, 1001, 4026);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (23, 3005, 1001, 4027);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (24, 3005, 1001, 4028);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (25, 3005, 1001, 4029);

INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (26, 3006, 1000, 4030);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (27, 3006, 1000, 4031);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (28, 3006, 1000, 4032);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (29, 3006, 1000, 4033);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (30, 3006, 1000, 4034);


INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (31, 3007, 1000, 4035);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (32, 3007, 1000, 4036);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (33, 3007, 1000, 4037);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (34, 3007, 1000, 4038);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (35, 3007, 1000, 4039);


INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (36, 3008, 1001, 4040);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (37, 3008, 1001, 4041);
```

```
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (38, 3008, 1001, 4042);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (39, 3008, 1001, 4043);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (40, 3008, 1001, 4044);

INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (41, 3009, 1002, 4045);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (42, 3009, 1002, 4046);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (43, 3009, 1002, 4047);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (44, 3009, 1002, 4048);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (45, 3009, 1002, 4049);

INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (46, 3010, 1001, 4050);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (47, 3010, 1001, 4051);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (48, 3010, 1001, 4052);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (49, 3010, 1001, 4053);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (50, 3010, 1001, 4054);

INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (51, 3011, 1002, 4055);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (52, 3011, 1002, 4056);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (53, 3011, 1002, 4057);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (54, 3011, 1002, 4058);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (55, 3011, 1002, 4059);
```

```
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (56, 3012, 1001, 4060);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (57, 3012, 1001, 4061);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (58, 3012, 1001, 4062);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (59, 3012, 1001, 4063);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (60, 3012, 1001, 4064);

INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (61, 3013, 1000, 4065);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (62, 3013, 1000, 4066);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (63, 3013, 1000, 4067);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (64, 3013, 1000, 4068);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (65, 3013, 1000, 4069);

INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (66, 3014, 1000, 4070);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (67, 3014, 1000, 4071);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (68, 3014, 1000, 4072);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (69, 3014, 1000, 4073);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (70, 3014, 1000, 4074);

INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (71, 3000, 1003, 4000);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (72, 3000, 1003, 4001);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (73, 3000, 1003, 4002);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
VALUES (74, 3000, 1003, 4003);
INSERT INTO salary (salary_ID, emp_ID, paygrade_ID, time_punch_ID)
```

```
VALUES (75, 3000, 1003, 4004);


INSERT INTO deduction (deduction_ID, federal_WH, medicare, social_security,
penn_state_WH, township_tax, pennsylvania_ULHCWF, total_deduction)
VALUES (1, 0.107, 0.014, 0.062, 0.031, 0.01, 0.0007, 00.2247);


CREATE OR REPLACE FUNCTION net_salary_calculation()
        RETURNS TRIGGER
        LANGUAGE plpgsql
        AS
        $$
                DECLARE
        net_salary MONEY;
                gross_salary MONEY;
                deduction_percent DECIMAL;
                total_deduction MONEY;

                BEGIN

                SELECT SUM(s.gross_salary) INTO gross_salary
                FROM salary s
                WHERE s.emp_ID = NEW.emp_ID;


SELECT d.total_deduction INTO deduction_percent
FROM deduction d;

         total_deduction := deduction_percent * gross_salary;
        net_salary := gross_salary - total_deduction;

        NEW.net_salary = net_salary;

   RETURN NEW;
        END;
$$;



CREATE TRIGGER calculate_netsalary
BEFORE INSERT ON payroll
FOR EACH ROW
EXECUTE FUNCTION net_salary_calculation();
```

```
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (102, 3000, 71, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (103, 3001, 6, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (104, 3002, 11, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (105, 3003, 1, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (106, 3004, 16, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (107, 3005, 21, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (108, 3006, 26, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (109, 3007, 31, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (110, 3008, 36, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (111, 3009, 41, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (112, 3010, 46, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (113, 3011, 51, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (114, 3012, 56, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (100, 3013, 61, 1);
INSERT INTO payroll (payroll_ID, emp_ID, salary_ID, deduction_ID)
VALUES (101, 3014, 66, 1);

ALTER TABLE employee
ALTER COLUMN password_ TYPE VARCHAR(150);

/*QUERIES*/

/* 1-This shows the total hours worked by each employee showing their departments. */
SELECT concat (e.first_name, ' ', e.middle_name, ' ', e.last_name) AS employee_Name,
SUM(tp.total_hours) AS total_hours_worked, e.position_name, d.department_name
FROM employee e
JOIN time_punch tp ON e.emp_ID = tp.emp_ID
JOIN department d ON e.department_ID = d.department_ID
GROUP BY employee_name, e.position_name, d.department_name
```

```
ORDER BY total_hours_worked DESC;

/*2-  which employee gets the most money from the company.*/

SELECT e.emp_ID, d.department_name, p.net_salary, concat (e.first_name, ' ', e.middle_name,
' ', e.last_name) AS employee_Name
FROM employee e
JOIN department d ON e.department_ID = d.department_ID
JOIN payroll p ON e.emp_ID = p.emp_ID
WHERE p.net_salary = (SELECT MAX(net_salary) FROM payroll);


/*3- Average Accounting salary*/

SELECT AVG (p.net_salary::numeric) AS Average_accounting_salary
        FROM payroll p
        JOIN employee e ON p.emp_ID = e.emp_ID
        JOIN department d ON e.department_ID = d.department_ID
        WHERE d.department_name = 'Accounting';

/*4-      Payroll Calculations calculating the gross salary, deductions and net salary of all
employees.*/

SELECT e.emp_ID, concat (e.first_name, ' ',e.middle_name, ' ', e.last_name) AS
employee_name,
(pg.pay_rate * 40) AS base_salary,
(pg.overtime_rate * t.overtime_hours) AS overtime_pay,
(pg.pay_rate * 40) + (pg.overtime_rate * t.overtime_hours) AS Gross_salary,
(((pg.pay_rate * 40) + (pg.overtime_rate * t.overtime_hours)) * d.total_deduction) AS
Total_deduction,
(pg.pay_rate * 40) + (pg.overtime_rate * t.overtime_hours) - (((pg.pay_rate * 40) +
(pg.overtime_rate * t.overtime_hours)) * d.total_deduction) AS Net_salary
FROM employee e
JOIN paygrade pg on e.paygrade_ID = pg.paygrade_ID
JOIN time_punch t on t.emp_ID = e.emp_ID
CROSS JOIN deduction d


/*5- Look at which employees do not come on time. clock-in time is past 9:15 AM. (Normal work
hours is 9-5)*/

SELECT t.emp_ID, concat (e.first_name, ' ',e.middle_name, ' ', e.last_name) AS
employee_name, t.clock_in
FROM time_punch t
```

```
JOIN employee e on e.emp_ID = t.emp_ID
WHERE EXTRACT(HOUR FROM clock_in) > 9 OR (EXTRACT(HOUR FROM clock_in) = 9
AND EXTRACT(MINUTE FROM clock_in) > 15);
```

6- Finding the average salary in each department

```
SELECT d.department_name, AVG (p.net_salary::numeric) AS avg_salary
        FROM payroll p
        JOIN employee e ON p.emp_ID = e.emp_ID
        JOIN department d ON e.department_ID = d.department_ID
        GROUP BY department_name;
```

/*7- Look at employees who are likely to receive a promotion- They come early and leave late. The manager would have to assess their performance.*/

```
SELECT t.emp_ID, d.department_name, concat (e.first_name, ' ',e.middle_name, ' ',
e.last_name) AS employee_name, t.clock_in, t.clock_out
FROM time_punch t
JOIN employee e on e.emp_ID = t.emp_ID
JOIN department d ON e.department_ID = d.department_ID
WHERE EXTRACT(HOUR FROM clock_in) = 8 AND EXTRACT(HOUR FROM clock_out) > 17;
```

/*8- Look at which employees take the most leave and why. */

```
SELECT e.emp_ID, concat (e.first_name, ' ',e.middle_name, ' ', e.last_name) AS
employee_name,
COUNT(t.time_req_ID) AS total_leave_requests, t.comments_
FROM employee e
JOIN time_off t ON e.emp_ID = t.emp_ID
GROUP BY e.emp_ID, employee_name, t.comments_
ORDER BY total_leave_requests DESC;
```

/*9- This looks at what department makes the most overtime */

```
SELECT d.department_name, sum(t.overtime_hours) AS total_overtime
FROM department d
JOIN employee e on d.department_ID = e.department_ID
JOIN time_punch t ON e.emp_ID = t.emp_ID
GROUP BY department_name
```

/*10- Which employee makes the most overtime:*/

```
SELECT d.department_name, concat (e.first_name, ' ',e.middle_name, ' ', e.last_name) AS
employee_name, sum(t.overtime_hours) AS total_overtime
FROM department d
JOIN employee e on d.department_ID = e.department_ID
JOIN time_punch t ON e.emp_ID = t.emp_ID
GROUP BY e.emp_ID, d.department_name
ORDER BY d.department_name
```

/* 11- How much cost is spent on overtime:*/

```
SELECT e.emp_ID, d.department_name, sum(s.overtime_pay) AS total_overtime_pay, concat
(e.first_name, ' ', e.middle_name, ' ', e.last_name) AS employee_Name
FROM employee e
JOIN department d ON e.department_ID = d.department_ID
JOIN salary s ON e.emp_ID = s.emp_ID
GROUP BY e.emp_ID, d.department_name
ORDER BY total_overtime_pay DESC
```

/*12- Looking at which employees make above average (based on the whole company average)*/

```
SELECT concat (e.first_name, ' ',e.middle_name, ' ', e.last_name) AS employee_name,
p.net_salary, (SELECT AVG(net_salary::numeric)

                                                                    FROM
payroll) AS Company_average
FROM employee e
JOIN payroll p ON e.emp_ID = p.emp_ID
WHERE p.net_salary::numeric > ( SELECT AVG (net_salary::numeric) FROM payroll);
```

/*13- How many employees from each department*/

```
SELECT department_name, COUNT(*) AS total_employees
FROM employee
JOIN department ON employee.department_ID = department.department_ID
GROUP BY department_name;
```

```
/*14- Finding the net salaries of the employees*/

SELECT p.net_salary, concat (e.first_name, ' ',e.middle_name, ' ', e.last_name) AS
employee_name
FROM payroll p
JOIN employee e on p.emp_ID = e.emp_ID;


/*15- The average gross salary from each paygrade*/

SELECT p.paygrade, AVG(s.gross_salary::numeric) AS avg_gross_salary
FROM salary s
JOIN paygrade p ON s.paygrade_ID = p.paygrade_ID
GROUP BY p.paygrade
ORDER BY avg_gross_salary DESC;
```