```sql
select * from dbo.HR_Data
--1) What's the age distribution in the company?

--a) age distribution
select min(age) as youngest,
max(age) as oldest
from HR_Data;

--b) age group by gender
select age_group,gender,
count(*) as count
from
(select
case
when age <=22 and age <=30 then '22 to 30'
when age <=31 and age <=40 then '31 to 40'
when age <=41 and age <=50 then '41 to 50'
else '50 +'
end as age_group,gender
from HR_Data where new_termdate IS NULL
) as subquery
group by age_group,gender
order by age_group,gender;



--2) What's the gender breakdown in the company?

select
gender,
count(gender) as count
from HR_Data
where new_termdate is null
group by gender
order by gender ASC;

--3) How does gender vary across departments and job titles?P
select
department,jobtitle,gender,
count(gender) as count
from HR_Data
where new_termdate is null
group by department,jobtitle,gender
order by department,jobtitle,gender ASC;

--4) What's the race distribution in the company?
select
race,
count(*) as count
from  HR_Data
where new_termdate is null
group by race
```

```
order by count DESC;

--5) What's the average length of employment in the company?
select
avg(datediff(year,hire_date,new_termdate)) as tenure
from HR_Data
where new_termdate is not null and new_termdate < = GETDATE();

--6) which department has the highest turnover rate?

select department,
count(*) as total_count,
sum(case
when new_termdate is not null and new_termdate <= getdate()then 1 else 0 end
) as terminated_count
from HR_Data
group by department

--a) get total count
--b) get terminated count
--c) terminated count/total count

select
department,
total_count,
terminated_count,
(round((cast(terminated_count as float)/total_count),2))*100 as turnover_rate
from
(select department,
count(*) as total_count,
sum(case
when new_termdate is not null and new_termdate <= getdate() then 1 else 0 end
) as terminated_count
from HR_Data
group by department) as subquery
order by turnover_rate desc;

--7) What's the tenure distribution for each department?

select department,
avg(datediff(year,hire_date,new_termdate)) as tenure
from HR_Data
where new_termdate is not null and new_termdate < = GETDATE()
group by department
order by tenure desc;

--8) How many employees work remotely for each department?

select
location ,
count(*) as count
from HR_Data
where new_termdate is null
```

```sql
group by location;

--9) What's the distribution  of employees across different states?
select
location_state,
count(*) as count from HR_Data
where new_termdate is null
group by location_state
order by count desc;

--10) How are job title distribution in the company?

select
jobtitle,count(*) as count
from HR_Data
where new_termdate is null
group by jobtitle
order by count desc;

--11) How have employee hire counts over time?
--a) calculate hires
--b) calculate terminations
--c) (hires-terminations)/hires percent hire change

select  hire_year, hires,terminations,hires-terminations as net_change,
round(cast(hires-terminations as float)/hires,2)*100 as percent_hire_change
from(
select
year(hire_date) As hire_year,
count(*) as hires,
sum(case
when new_termdate is not null and new_termdate<=getdate() then 1 else 0 end
) as terminations
from HR_Data
group by year(hire_date) )as subquery
order by percent_hire_change asc;
```