FIT3003 S2 2022

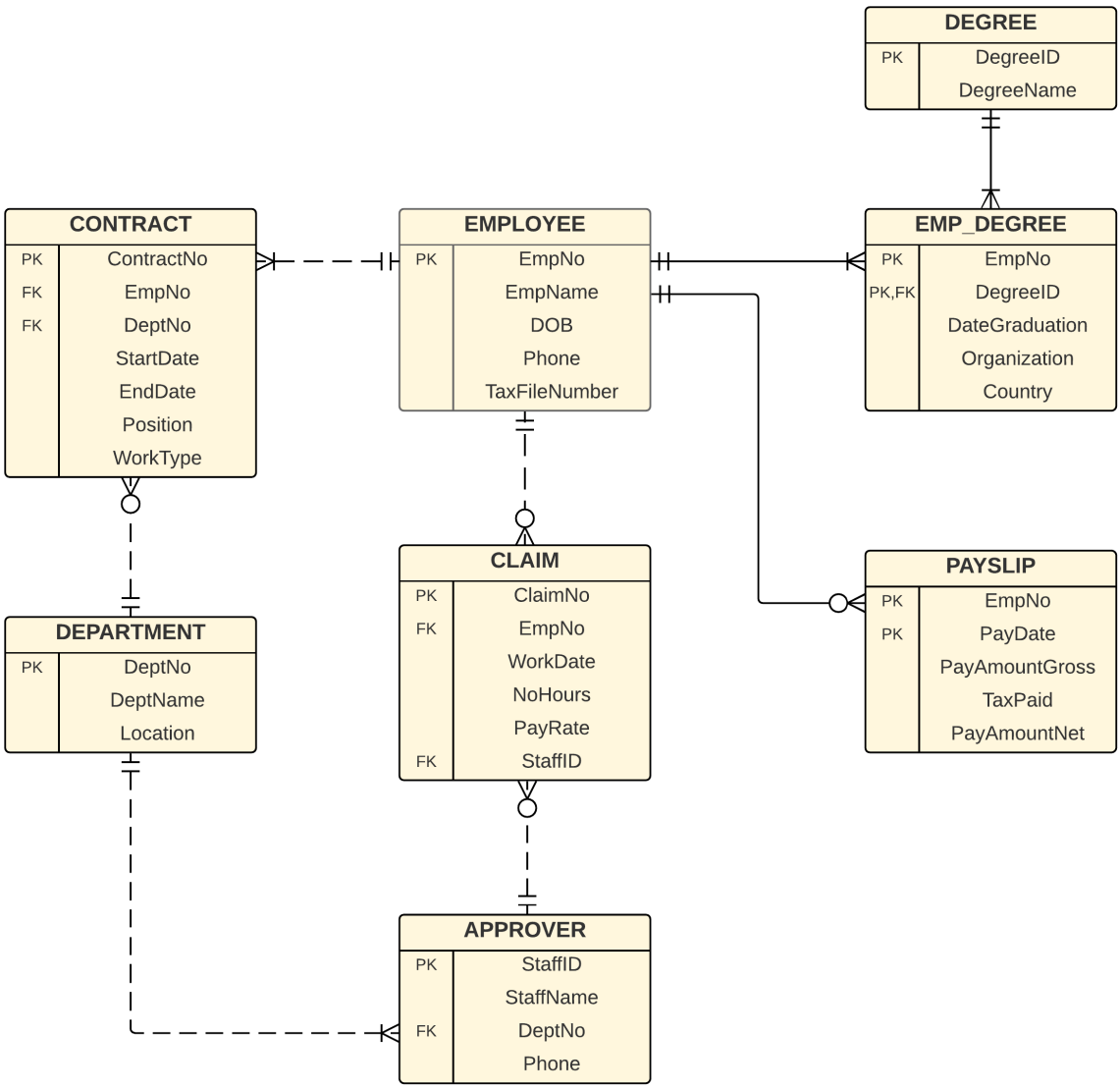
Lecture 5 Activity

Sessional Jobs Case Study

Monash University employs its students to do various jobs, such as tutoring, programming, etc. These jobs are called sessional jobs. For each sessional job, students need to sign a contract. For example, to do tutoring (one or more units), the student will sign a contract with Monash for one semester.

These sessional workers (e.g. sessional tutors) need to claim their work hours every week. This claim will need to be approved by a designated person in the faculty. Every fortnight, the sessional workers will get their pay.

The operational database, which keeps track of this system, is shown by the following E/R diagram.



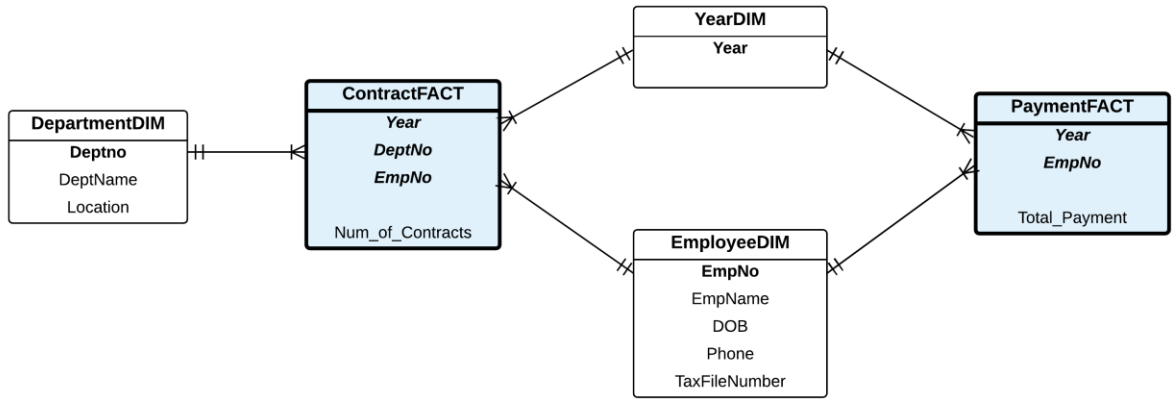
You are required to build a data warehouse to analyse the following:

- The total number of contracts made every year.
- The total payment made to each employee in 2020.
- The yearly number of contracts made in each department.

Question:
(a) Draw the star schema for this system.
(b) Write the SQL queries to create the fact and dimension tables.

Write your answers here:

(a) Star Schema



(b) SQL Queries

```
create table DepartmentDim as
select * from Department;

create table EmployeeDim as
select * from Employee;

create table YearDim as
select distinct to_char(StartDate, 'YYYY') as Year
from Contract
UNION
select distinct to_char(PayDate, 'YYYY') as Year
from Payslip;


create table ContractFact as
select
     to_char(C.StartDate, 'YYYY') as Year,
     E.EmpNo,
     D.DeptNo,
```

```
      COUNT(C.ContractNo) as Num_of_Contracts
from Employee E, Contract C, Department D
where E.EmpNo = C.EmpNo
and C.DeptNo = D.DeptNo
group by
      to_char(C.StartDate, 'YYYY'),
      E.EmpNo,
      C.DeptNo;

create table PaymentFact as
select
      to_char(P.PayDate, 'YYYY') as Year,
      E.EmpNo,
      SUM(P.PayAmountNet) as Total_Payment
from Employee E, Payslip P
where E.EmpNo = P.EmpNo
group by
      to_char(P.PayDate, 'YYYY'),
      E.EmpNo;
```

THE END