

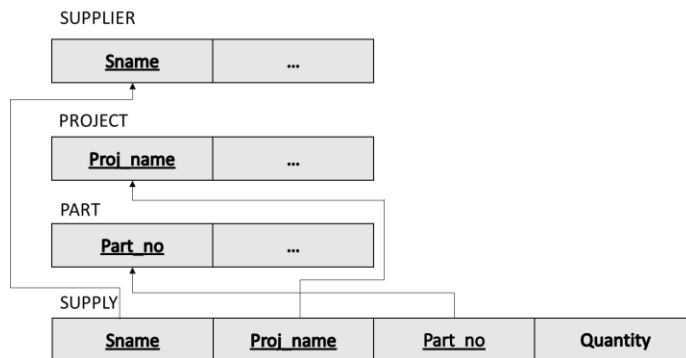
COMPSCI 751 S1 C – Lab 03

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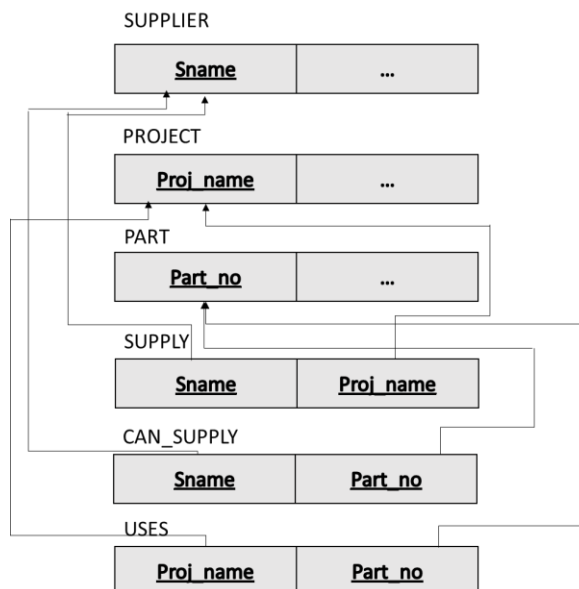
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Q1,

- (A) A ternary relationship type structure: Primary keys are Sname in SUPPLIER, Proj_name in PROJECT, Part_no in PART and combination of {Sname, Proj_name, Part_no} in SUPPLY table. Foreign keys are Sname in SUPPLY, Proj_name in SUPPLY and Part_no in SUPPLY.

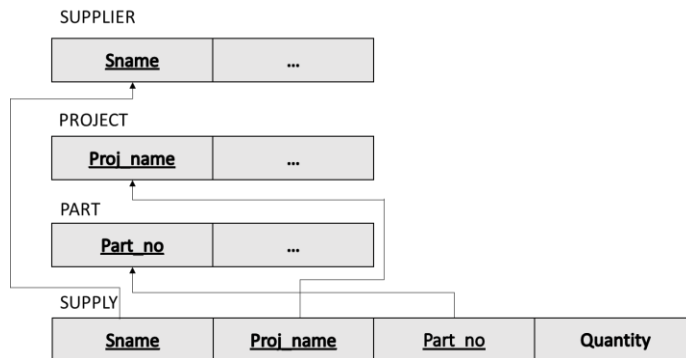


- (B) A three binary relationship types structure. Primary keys are Sname in SUPPLIER, Proj_name in PROJECT, Part_no in PART, combination of {Sname, Proj_name} in SUPPLY table, combination of {Sname, Part_no} in CAN_SUPPLY table, and combination of {Proj_name, Part_no} in USES table. Foreign keys are Sname, Proj_name in SUPPLY table, Sname and Part_no in CAN_SUPPLY table and Proj_name and Part_no in USES table.



- (C) A weak entity type structure

Primary keys are Sname in SUPPLIER, Proj_name in PROJECT, Part_no in PART and combination of {Sname, Proj_name, Part_no} in SUPPLY table. Foreign keys are Sname in SUPPLY, Proj_name in SUPPLY and Part_no in SUPPLY.



2, Basic SQL

1) create the COMPANY database schema using SQL in php

```

CREATE TABLE EMPLOYEE(
  Fname VARCHAR(15) NOT NULL,
  Minit CHAR,
  Lname VARCHAR(15) NOT NULL,
  Ssn CHAR(9) NOT NULL,
  Bdate DATE,
  Address VARCHAR(30),
  Sex CHAR,
  Salary DECIMAL(10, 2),
  Super_ssn CHAR(9),
  Dno INT NOT NULL ,
  PRIMARY KEY (Ssn)
);
  
```

```

CREATE TABLE DEPARTMENT(
  Dname VARCHAR(15) NOT NULL,
  Dnumber INT NOT NULL,
  Mgr_ssn CHAR(9),
  );
  
```

```
Mgr_start_date DATE,  
PRIMARY KEY (Dnumber),  
UNIQUE (Dname),  
FOREIGN KEY (Mgr_ssn) REFERENCES EMPLOYEE(Ssn)  
);
```

```
ALTER TABLE EMPLOYEE ADD (  
FOREIGN KEY (Super_ssn) REFERENCES EMPLOYEE(Ssn),  
FOREIGN KEY (Dno) REFERENCES DEPARTMENT(Dnumber)  
);
```

```
CREATE TABLE DEPT_LOCATIONS (  
Dnumber INT NOT NULL ,  
Dlocation VARCHAR(15) NOT NULL,  
PRIMARY KEY (Dnumber, Dlocation),  
FOREIGN KEY (Dnumber) REFERENCES DEPARTMENT(Dnumber)  
);
```

```
CREATE TABLE PROJECT (  
Pname VARCHAR(15) NOT NULL,  
Pnumber INT NOT NULL,  
Plocation VARCHAR(15),  
Dnum INT NOT NULL,  
PRIMARY KEY (Pnumber),  
UNIQUE (Pname),  
FOREIGN KEY (Dnum) REFERENCES DEPARTMENT(Dnumber)  
);
```

```
CREATE TABLE WORKS_ON (  

```

```
Essn CHAR(9) NOT NULL,  
Pno INT NOT NULL,  
Hours DECIMAL(3, 1) NOT NULL,  
PRIMARY KEY (Essn, Pno),  
FOREIGN KEY (Essn) REFERENCES EMPLOYEE(Ssn),  
FOREIGN KEY (Pno) REFERENCES PROJECT(Pnumber)  
);
```

```
CREATE TABLE DEPENDENT(  
Essn CHAR(9) NOT NULL,  
Dependent_name VARCHAR(15) NOT NULL,  
Sex CHAR,  
Bdate DATE,  
Relationship VARCHAR(8) ,  
PRIMARY KEY (Essn, Dependent_name) ,  
FOREIGN KEY (Essn) REFERENCES EMPLOYEE(Ssn)  
);
```

2)

(a)

```
INSERT INTO `EMPLOYEE` VALUES
```

```
("Robert","F","Scott","943775543","1942-06-21","2365 Newcastle Rd,Bellaire,TX","M","58000",  
"888665555","1");
```

(b)

```
INSERT INTO `PROJECT` VALUES ("ProductA", "4", "Bellaire", "2");
```

(c)

```
INSERT INTO `DEPENDENT` VALUES ("333445555", "Joy", "F", "1958-05-03", "SPOUSE");
```

(d)

```
DELETE FROM `WORKS_ON` WHERE Essn="333445555";
```

(e)

```
DELETE FROM 'PROJECT' WHERE Pname="ProductX";
```

(f)

```
UPDATE 'PROJECT' SET Mgr_ssn="123456789", Mgr_start_date="1998-10-01" WHERE Dnumber=5;
```

(g)

```
UPDATE 'EMPLOYEE' SET Super_ssn="123456789" WHERE Ssn="333445555";
```

(h)

```
DELETE FROM 'EMPLOYEE' WHERE Ssn="123456789";
```