//Written explanation for Q1-Q3

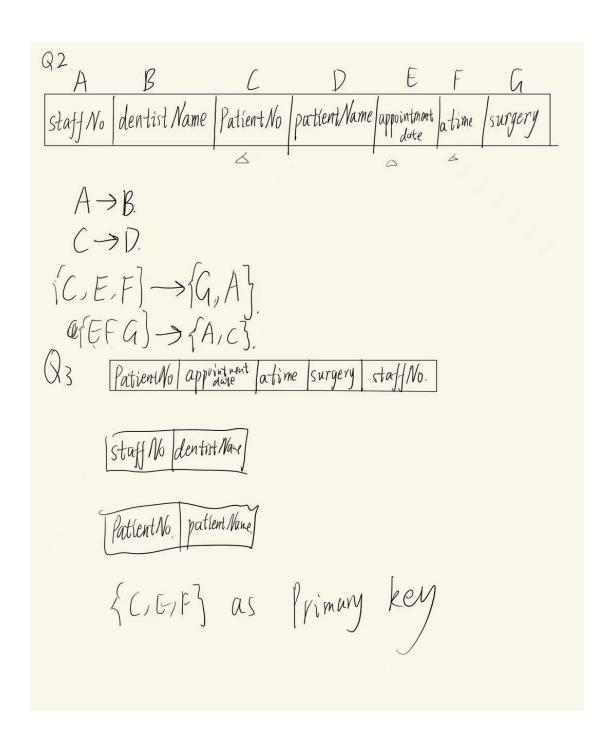
To convert any relation into 1NF, split any non-atomic values

JUST let "appointment date" be one column and "time" be one column to convert it

Q1

INSERT Anomalies:can not add a "appointment data" without "time".

DELETE Anomalies:IF we remove "S1032" then P110, "John Walker" will be removed as well. UPDATE Anomalies:IF we change the patient name "lan MacKay",we will need to update two rows.



```
DROP TABLE IF EXISTS Staff;
DROP TABLE IF EXISTS Patient:
DROP TABLE IF EXISTS Arrangement;
CREATE TABLE Staff(
    staffNo VARCHAR[50],
    dentistName VARCHAR[50],
    CONSTRAINT pk_st
        PRIMARY KEY(staffNo)
);
CREATE TABLE Patient(
    patientNo VARCHAR[50],
    patientName VARCHAR[50],
    CONSTRAINT pk_pa
        PRIMARY KEY(patientNo)
);
CREATE TABLE Arrangement(
    patientNo VARCHAR[50],
    appointment_date DATE,
    atime TIME,
    surgery VARCHAR[10],
    staffNo VARCHAR[50],
    CONSTRAINT pk a
        PRIMARY KEY(patientNo,appointment_date,atime),
    CONSTRAINT fk_a_pa
        FOREIGN KEY(patientNo) REFERENCES Patient(patientNo),
    CONSTRAINT fk_a_st
        FOREIGN key(staffNo) REFERENCES Staff(staffNo)
);
INSERT INTO Staff
VALUES ("S1011","Tony Smith"),
        ("S1024","Helen PEARSON"),
        ("S1032","Robin Plevin");
INSERT INTO Patient
VALUES("P100", "Gillian White"),
("P105","Jill Bell"),
("P108","Ian MacKay"),
("P110","John Walker");
INSERT INTO Arrangement
VALUES("P100","12-Aug-03","10.00","S10","S1011"),
("P105","13-Aug-03","12.00","S15","S1011"),
```

("P105","14-Oct-03","16.30","S15","S1032"), ("P108","12-Sept-03","10.00","S10","S1024"), ("P108","14-Sept-03","10.00","S10","S1024"), ("P110","15-Oct-03","18.00","S13","S1032");