Q1.

Manufacturer

PK	Manufacturer Code
	• Company Name
	• Address
	• Area Code
	• Phone Number
	• Account Number

Produces

Brand

PK	Brand Code
	Brand name
FK	Brand level
	Manufacturer Code

Has

Model

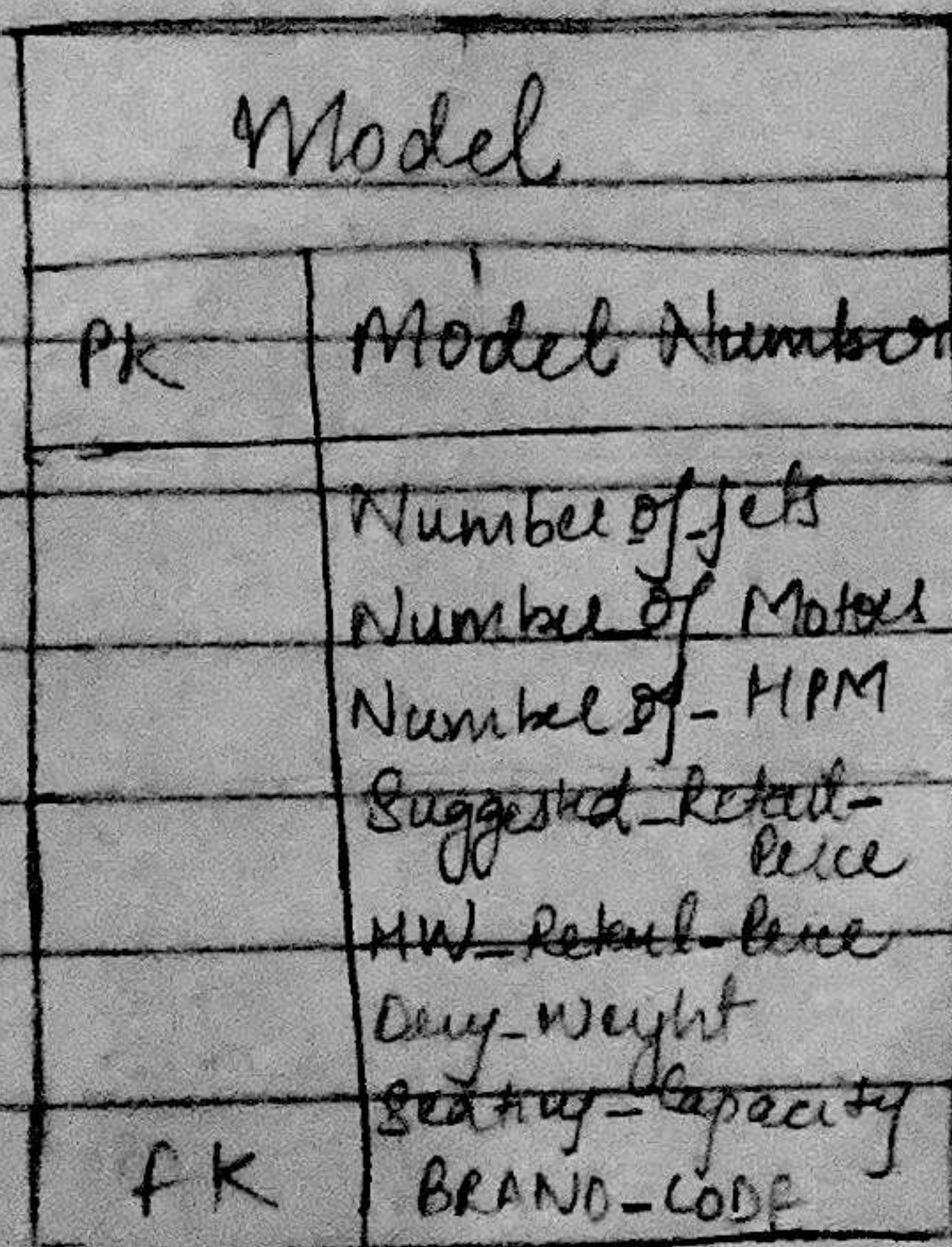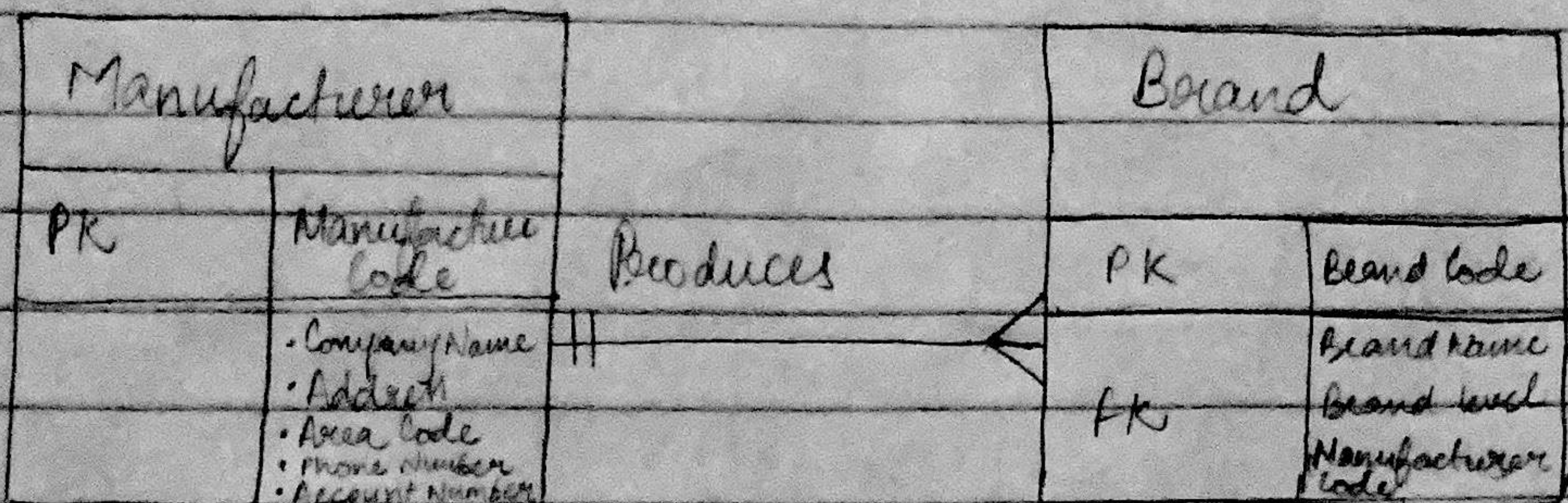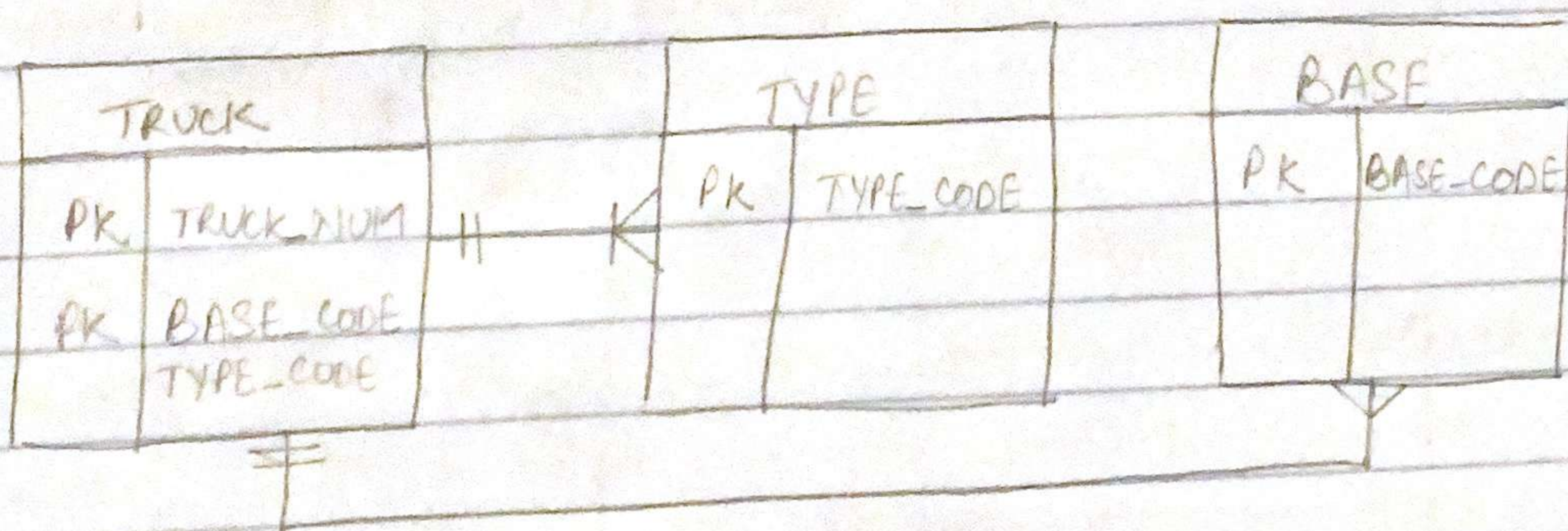| PK	Model Number
	Number of Jets
	Number of Motors
	Number of HPM
	Suggested retail price
	MW_Retail_price
	Dry_weight
	Seating_capacity
FK	BRAND_CODE

- The attributes for manufacturer, brand and model are as mentioned in the table.
- There exist a one to many relationship between a manufacturer and brand. It's because a manufacturer can manufacture more than one brand.
- There exist one to many relationship between a model and a brand. It's because a brand can have more than one models.

Q 2.

Table	Primary Key	Foreign Key
TRUCK	TRUCK_NUM	BASE_CODE, TYPE_CODE
TYPE	TYPE_CODE	
BASE	BASE_CODE	

Table	Entity Integrity (Yes/No)	Reason
TRUCK	Yes	As all it's p.k are uniquely identified
TYPE	Yes	As all it's p.k are uniquely identified
BASE	Yes	As all it's p.k are uniquely identified

Table	Referential Integrity (Yes/No)	Reason
TRUCK	Yes	A null entry is present
TYPE	No	No presence of null or entry matches the P.K
BASE	No	No presence of null or entry that matches the P.K

TRUCK		TYPE		BASE	
PK	TRUCK_NUM	PK	TYPE_CODE	PK	BASE_CODE
PK	BASE_CODE TYPE_CODE				

The TRUCK Table's candidate key is TRUCK Serial Number

f 3.

Division

PK	div_no
FRI	emp_no

Department

PK	div_no
FK1	div_no
FK2	emp_no

deviala

employs

manage

Employee

PK	emp_no
FRI	dept_no

emp_asgn

Assign_to

PK, FK1	emp_no
PK, FK2	proj_no

proj_asgn

Bioject

PK	proj_no

Entity-Relationship diagram with the following entities:

- **INSTRUCTOR**: PK InstructID, Name, Phone, ...
- **TRAINEE**: PK TraineeID, Name, ..., FK InstructID
- **Course**: PK CourseID, ..., Fee
- **Class**: PK ClassID, Name, ..., FK InstructID, FK CourseID
- **Enroll**: PK/FK TraineeID, PK/FK ClassID, StartDate, EndDate
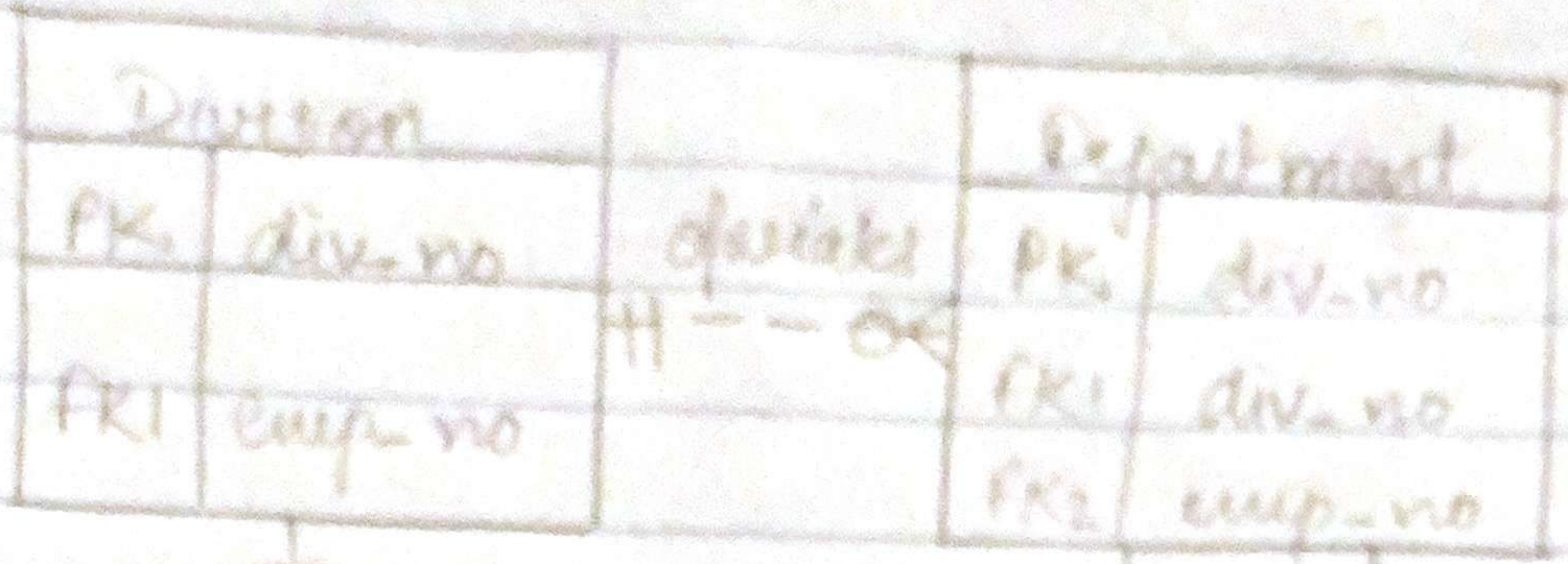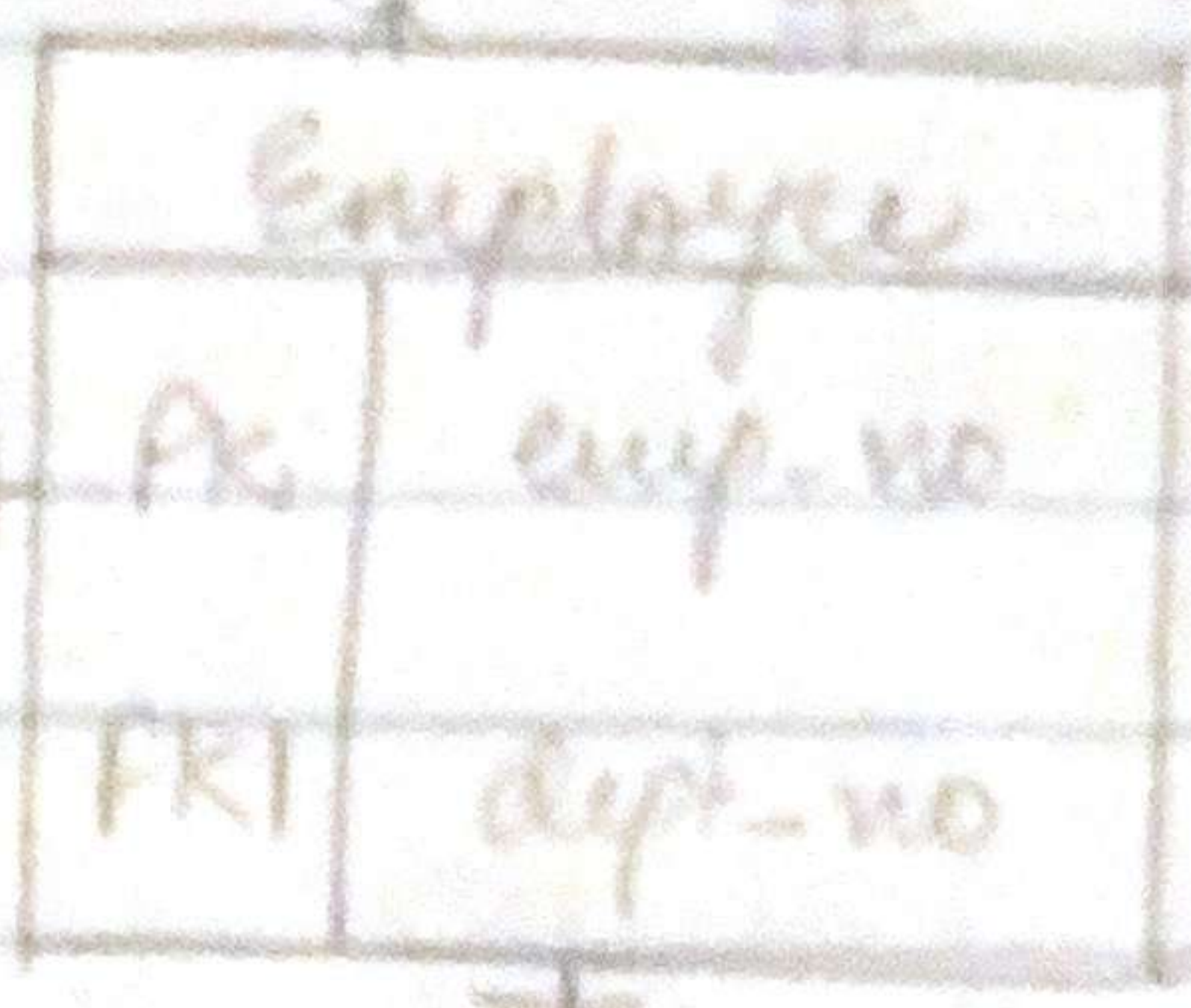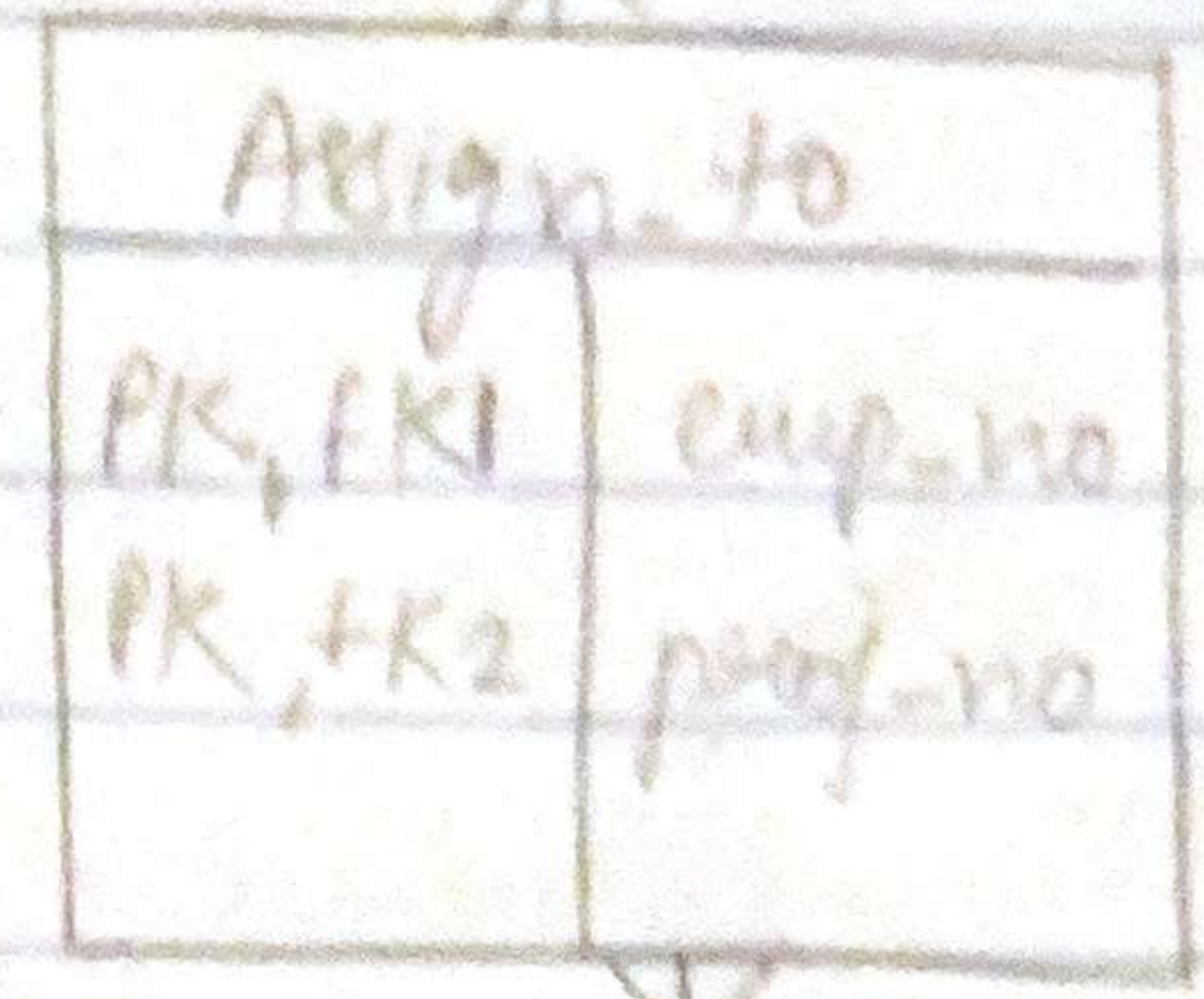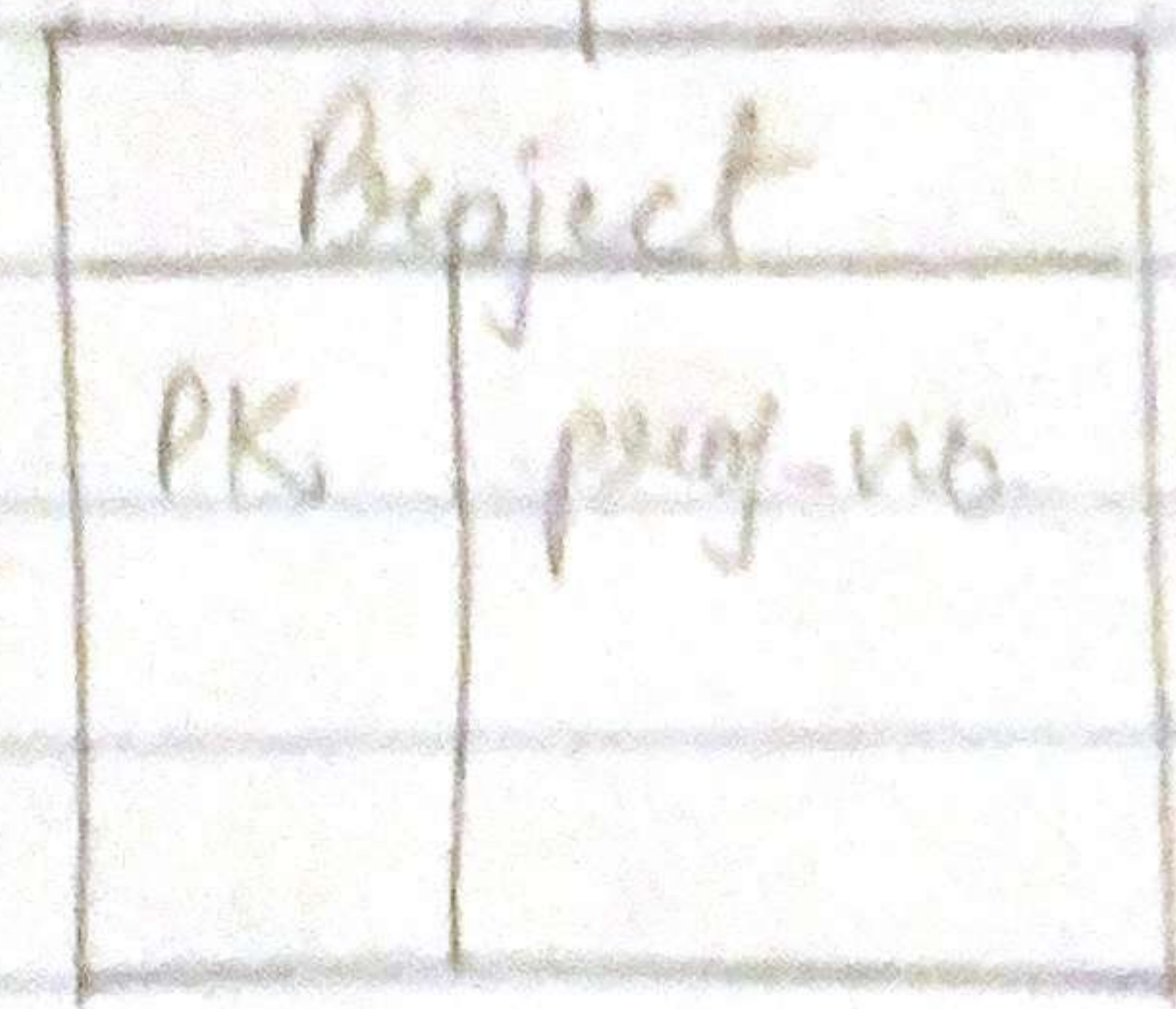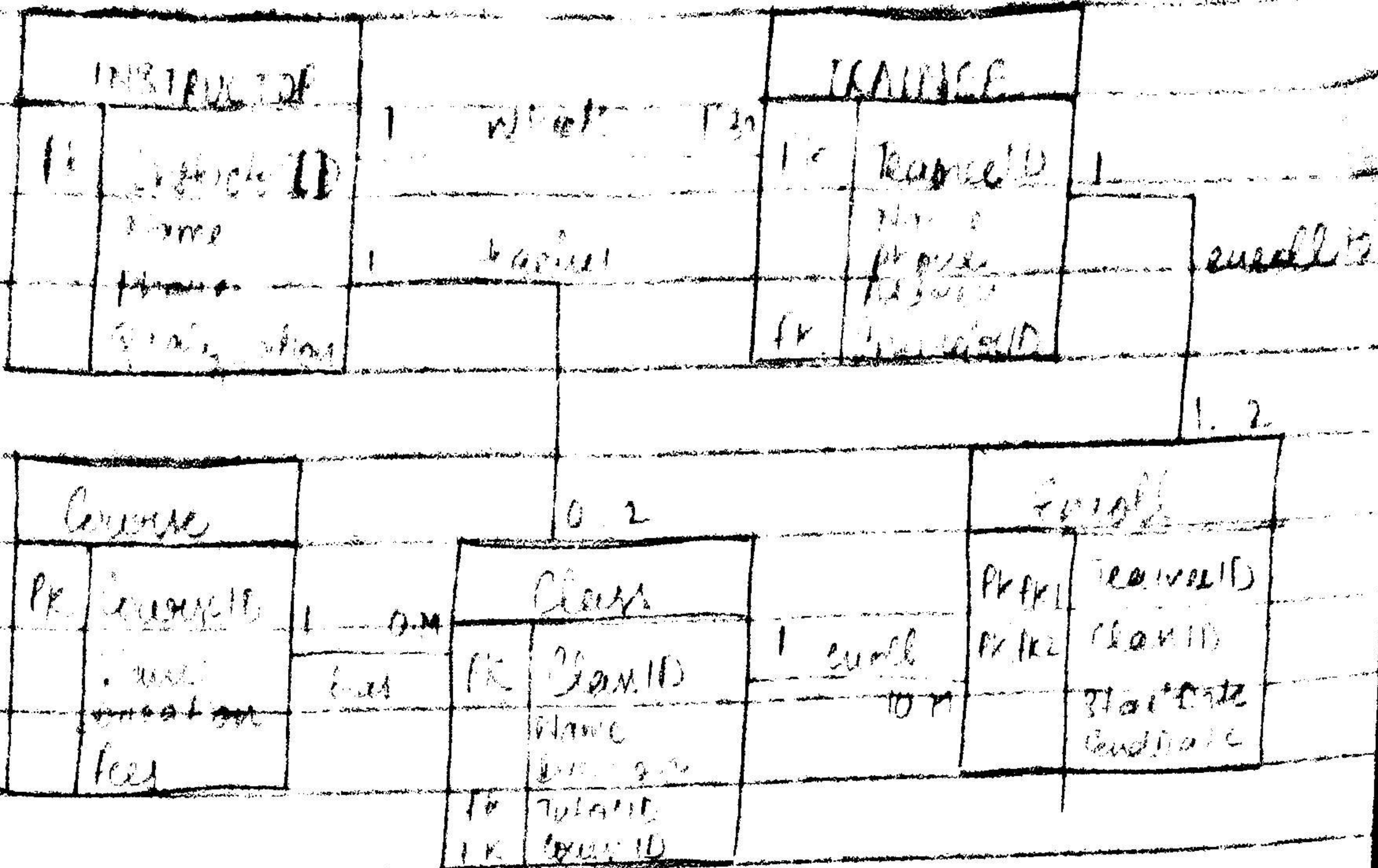
Entity	Relationship	Connectivity	Entity
TRAINEE	Trainee instructed by an instructor	M:1	INSTRUCTOR
INSTRUCTOR	Instructor instructs trainee	1:M	TRAINEE
COURSE	Course has classes	1:M	CLASS
CLASS	Class belongs to course	M:1	COURSE
CLASS	Class taught by an instructor	M:1	INSTRUCTOR
INSTRUCTOR	Instructor teaches class	1:M	CLASS
ENROLL	Trainee enrolls	M:N	CLASS

OUTING (O_ID, T_ID, EMP_ID, O_DATE, O_TIME)
In this table O_DATE, O_TIME represent scheduled
date and time.

CLIENT (C_ID, O_ID, C_NAME, C_PHONE_NUM)

TOUR

PK	TOUR_NAME
	Tour Name
	Tour Length
	Tour Fee

Qualification

PK, FK1	Tour_NOM
PK, FK2	G_EMP_ID
	Qual_Date

GUIDE

PK	G_EpmID
	G_RName
	G_LName
	G_Street
	G_City
	G_State
	G_Zip
	G_HireDate

STOP

PK, FK1	Tour_Nom
PK, FK2	Loc_Num

OUTING

PK	Out_Nom
	Out_Date
	Out_Time
FK1	Tour_Name
FK2	G_EmpID

BOOKING

PK, FK1	Out_Num
PK, FK2	Client_Num

LOCATION

PK	Loc_Num
	Loc_Name
	Loc_Type
	Loc_Descript

CLIENT

PK	Client_Num
	Client_FName
	Client_LName
	Client_Strat
	Client_City
	Client_State
	Client_Zip
	Client_Status

In other words in the original database. In case of
guide may or may not be qualified use zero or
more cardinality to represent relationship. In case
of guide must be qualified, use one or more cardi-
nality to represent the relationship.

TOUR

Pk	TOUR_NUM
	TOOR_NAME
	TOUR_LENGTH
	TOUR_FEE

Qualification

Pk, FK1	TOUR_NUM
Pk, FK2	G_EMPID
	Qual_DATE

GUIDE

Pk	G_EmpID
	G_FNAME
	G_LNAME
	G_Steet
	G_City
	G_State
	G_Zip
	G_Hisdate

STOP

Pk, FK1	TOUR_Num
Pk, FK2	LOC_Num

OUTING

Pk	OUT_Num
	Out_Date
FK1	Out_Time
FK2	TOUR_Num
	G_EMPID

BOOKING

Pk, FK1	Out_Num
Pk, FK2	Client_Num

LOCATION

PK	LOC_NAME
	LOC_Type
	LOC_Descript

CLIENT

Pk	CLIENT_FName
	Client_LName
	Client_Steet
	Client_City
	Client_State
	Client_Zip
	Client_State