

FINAL SEMESTER EXAMINATION /
Academic Year 2020 – 2021 / 2nd Semester
Subject : Database Systems
Lecturer : Zain Saifullah
Study Program: Information Technology / IT4
Date of Exam : May 3, 2021

MULYA FAJAR NINGSIH ALWI
001202000101
IT 2020 CLASS 4

Instructions to Students

1. Due date of this examination is **Monday May 10, 2021 23.59 PM**
 2. Sanctions will be given to those students who are not following the examination rules
 3. All answers to be written directly following the questions. The number to the corresponding question must be written correctly
 4. This is a take home examination
 5. Students are not allowed to communicate or to cooperate each other or copy someone's work while the examination is going on
 6. You must submit your handwritten answer by screenshot it and inserted into word or pdf files. You also must submit screenshot all answers (from cmd) in the same file. Your file name is YourName_YourStudentID.doc(x) or pdf
-

Questions:

1. (50 Marks)
Make ERD based on the attachment at the end of the file.
If you think the number of the entities less than 3, you can add other entities related to the problem.
You must give explanation if you think there is multi interpretation on your ERD

ANSWERS:

PT. JAVA ANIMA DARMAJA
One Stop Business and IT Solution
Jl. Cempaka Blok C3 No.24 Perum Beringin Raya, Kemiling, Bandar Lampung Telp 0721 271411

SLIP GAJI KARYAWAN
Periode 1 Juni 2013 – 30 Juni 2013

NIK : JAD-003
Nama : DENI SETIAWAN, S.Kom
Jabatan : Marketing Manager
Status : Karyawan Tetap

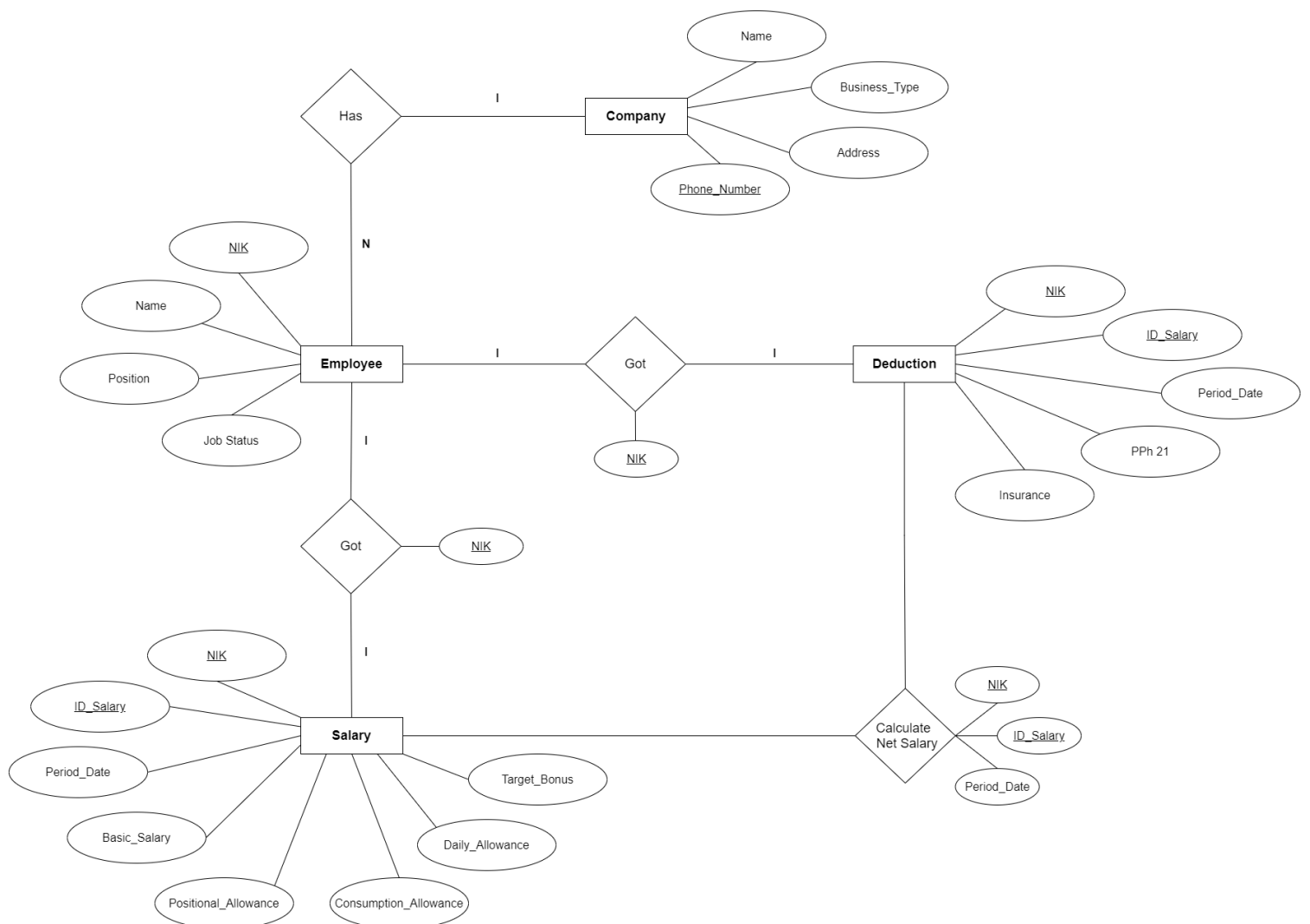
PENGHASILAN		POTONGAN	
Gaji Pokok	= 1,800,000	PPh 21	= 180,000
Tj. Jabatan	= 900,000	Asuransi	= -
Tj. Konsumsi	= 455,000		
Tj. Harian	= 520,000		
Bonus Target	= 752,000		
Total (A)	Rp 4,427,000	Total (B)	Rp 180,000

PENERIMAAN BERSIH (A – B) = Rp 4,247,000

Terbilang: # empat juta empat ratus dua puluh tujuh ribu rupiah #

B. Lampung, 30 Juni 2013
Manajer Operasional

Yulfiawati, SE.



To make an ERD we need to go through several steps, such as:

1. Determine the entity
2. Determine the attributes including the key attributes
3. Determining the relationships and the cardinality

Below is an explanation of my steps in creating an ERD:

1. Determine the entity

The number of entities based on the employee salary slips above is 4 entities, such as:

1. Company
2. Employee
3. Salary
4. Deduction

2. Determine the attributes including the key attributes

1. Company

Name	: varchar
Business_Type	: varchar
Address	: varchar
Phone_Number	: char(10) NOT NULL (PK)

2. Employee

NIK	: char(6) NOT NULL (PK)
Name	: varchar
Position	: varchar
Job_Status	: varchar

3. Salary

NIK	: char(6) NOT NULL (FK REF Employee(NIK))
ID_Salary	: char(6) NOT NULL (PK)
Period_Date	: date
Basic_Salary	: int
Positional_Allowance	: int

Consumption_Allowance	: int
Daily_Allowance	: int
Target_Bonus	: int

4. Deduction

NIK	: char(6) NOT NULL (FK REF Employee(NIK))
ID_Salary	: char(6) NOT NULL (FK REF Salary(ID_Salary))
Period_Date	: date
PPh 21	: int
Insurance	: int

3. Determining the relationships and the cardinality

The Company Has Employee

It is a relationship between company and employee entities, where each company must have employees.

The cardinality of the relationship between company and employee entities is **one-to-many** because many employees are in one company or one company has many employees.

Employees Got Salary

It is a relationship between employee and salary entities, which means that employees receive salaries, both basic salaries, allowances, and bonuses.

The cardinality of the relationship between employee and salary entities is **one-to-one** because an employee gets one salary (base, allowances, and bonuses) in one period.

And also, the relationship between employee and deduction entities is associated with the NIK attribute. Because not all NIKs and employee salaries are the same, therefore it is necessary to have a relationship between the two entities by using the NIK attribute to obtain the entity's data.

Employee Got Deduction

It is a relationship between employee and deduction entities, which means that employees also receive income deductions, both from income tax article 21 (PPh 21) and from insurance.

The cardinality of the relationship between employee and deduction entities is **one-to-one** because an employee gets one deduction (PPh 21 and insurance) in one period.

And also, the relationship between employee and deduction entities is associated with the NIK attribute. Because not all NIKs and employee deductions are the same, therefore it is necessary to have a relationship between the two entities by using the NIK attribute to obtain the entity's data.

Explanation of Salary and Deduction Entity Relationships (Calculate Net Salary)

The relationship between the salary and deduction entities is associated with the net salary calculation, which is done by subtracting the salary by deduction (**salary - deduction**) and also connecting the two entities requires the NIK, ID_Salary, and Period_Date attributes which have the same value to connect the two entities so that, we can calculate the net salary for the two entities, because each employee has a different NIK, ID_Salary, and Period_Date for their salary.